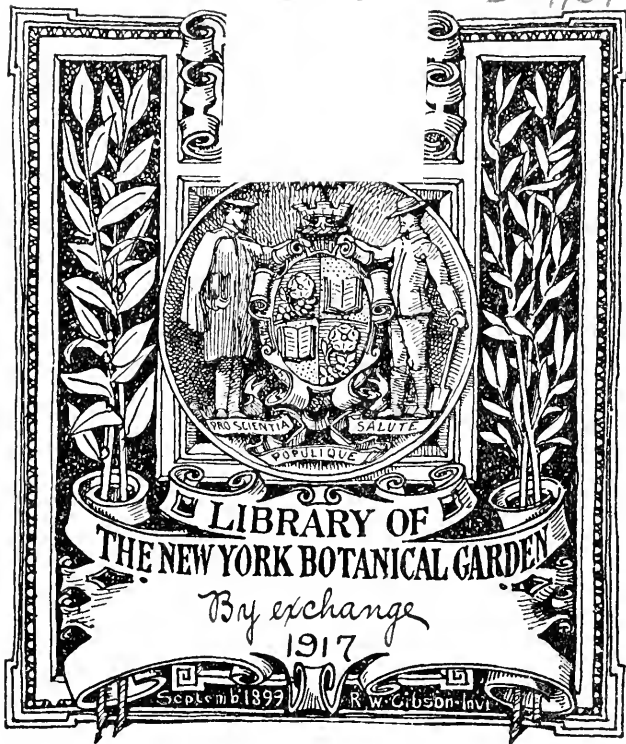


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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE
ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

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Irish Gardening

Contents

	PAGE		PAGE
Food Production	1	<i>Saxifraga longifolia</i> (Illustrated)	7
The Raspberry	2	The Cross-Vine	7
<i>Sternbergias</i> (Illustrated)	3	Notes on some New <i>Primulas</i> (Illustrated)	8
Bad Flower Gardening at Kew	4	Forcing Seakale and Asparagus	10
A Beautiful Greenhouse Plant	4	Three Years' Work at Sedums	11
<i>Hymenanchera crassifolia</i> (Illustrated)	5	Suburban and Allotment Gardens	12
<i>Quercus pontica</i>	6	The Month's Work—	
<i>Rosa Willmottiae</i>	6	Midland and Northern Counties	13
Late Roses	6	Southern and Western Counties	15
Climbers for Walls, &c.	6	Hints on Watering in Greenhouses	16



The Vegetable Products Committee

IRISH BRANCH

President—The Most Noble the Marquis of Headfort.

**Hon. Secretaries—Sir Frederick W. Moore, M.R.I.A.,
James Robertson, J.P.**

Hon. Treasurer—D. L. Ramsay, J.P.

With the recognition and approval of the Admiralty and the War Office the VEGETABLE PRODUCTS COMMITTEE has been formed under the presidency of LORD CHARLES BERESFORD for supplying Vegetables, Fruit, Jam, &c., to the NORTH SEA FLEET, in connection with which the IRISH BRANCH has been registered at the Head Offices, London, and through whom all enquiries respecting Ireland's contributions to the project should be made.

"The most ample expression of our thankfulness can never repay the debt which the people of these Islands owe to the gallant Officers and men of the Navy, who, by their ceaseless vigil on the danger-strewn waters of the North Sea, are maintaining us in comparative peace and quiet."

The Committee of the Irish Branch appeal for help in maintaining, as far as possible, regular supplies to the NAVAL BASE allocated to them, both by Gifts of Vegetable Products and contributions of money to supplement the supplies by purchase in the Market. Such gifts are urgently required to keep up the supply during the trying winter months.

The Hon. Secretaries invite enquiries, and will be pleased to give information and particulars as to forwarding gifts, on application. Remittances to be made to MR. D. L. RAMSAY.

Offices of the Royal Horticultural Society of Ireland

5 MOLESWORTH STREET, DUBLIN

IRISH GARDENING

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VOLUME XII
No. 131

JANUARY
1917

EDITOR—J. W. BESANT

Food Production.

THIS is a subject of vital importance at the present time, and intimately concerns every gardener, whether amateur or professional. The production of the greatest possible quantity of food material should be the aim and object of every person who has the smallest plot of ground available. In times of peace and plenty the owner of a very small garden, perhaps only a strip of a few yards behind his house, probably gets more value out of flower culture considering that vegetables are usually to be had at reasonable prices in the greengrocer's; but many causes have operated in the last two years to make the succulent cabbage and other vegetables scarce and dear. Scarcity of labour has been one of the chief causes, and it is not likely to be abated for some time. During the ensuing year therefore we earnestly urge everyone to utilise to the full every spare corner of ground in growing vegetables for home consumption, and if a surplus should result, then many a one with absolutely no garden would doubtless be glad to receive a portion, and thus a work of national importance may be done by all who have a garden.

No harm whatever would be done to the professional market gardener, since our large cities contain thousands of inhabitants who yet have no gardens, and it is obvious from the prices charged and the frequent scarcity that the supply is not equal to the demand.

Gardeners, in a much greater degree than farmers, have long ago learned the value of intensive cultivation, and even Mr. Wibberley might perhaps gain a few hints in a well-managed

market garden from the rapidity with which one crop follows another and in the value of deep cultivation in maintaining the soil in a high state of fertility. Private owners with large gardens in charge of a capable gardener will have no difficulty in maintaining large supplies, and on them devolves a duty in assisting the Vegetable Products Committee to supply our sailors with sufficient vegetables while at sea. If this ghastly war has no other result than that it bestirs thousands of cottagers and suburban dwellers to dig and plant their too often neglected gardens, then it will have done a world of good. There are doubtless many with but a vague idea of how to set about cultivating and cropping a plot of ground, and with a view to helping such we have secured a writer who has considerable experience in instructing beginners and who has taken an important part in laying out some of the most successful allotments in Ireland. Month by month he will indicate the chief operations necessary to get the most out of small gardens, while useful reminders of current work each month will be contributed by writers in the north and south respectively. It is our earnest hope that during the year just commencing no land at all capable of production will be found anywhere in Ireland uncropped, and of those who own or rent gardens, large or small, let it not be said as it is in Scripture—"I went by the field of the slothful, and by the vineyard of the man void of understanding. And, lo! it was all grown over with thorns, and nettles had covered the face thereof. . . . I looked upon it, and received instruction."

The Raspberry.

As a garden fruit the raspberry is one of the easiest to cultivate, and, given good cultivation, is a most remunerative crop. As a dessert fruit it does not take a high place; but it is of great value for preserving and cooking purposes, and is excellent when bottled.

A suitable time for planting is in the autumn after the leaves can be shaken easily from the canes, a good time being the present month.* The next best time is when the buds begin to swell in spring. They will grow well in good garden soil, but prefer a rich and rather moist soil, the richer and deeper the soil the better the results obtained. Planted between the rows of fruit trees in a young orchard, where they are partially shaded, they will do well; but the best crops are obtained in an open sunny situation where they are sheltered from cold winds. In poor soil, not naturally suited for raspberries, it will be necessary to prepare the site by digging or trenching as deeply as possible, and adding a heavy dressing of manure and decayed vegetable refuse; this should be dug in deeply, so that it will not come in contact with the roots of the newly planted canes. Care should be taken when trenching that the subsoil is not brought to the surface.

The usual way of propagating the raspberry is by suckers, which spring up in abundance from the creeping roots. These may be taken any time after the leaves fall off the canes. When selecting canes for planting, medium-sized and well-ripened ones should be chosen; these can be pulled up with a sharp jerk, securing with each some bushy fibrous roots. Old plantations generally throw up suckers at some distance from the parent stock, and from these plenty of suitable canes can be obtained.

There are different methods of planting. The one usually adopted for large plantations and market gardens is, to plant in groups of three canes, three feet apart in the rows, and five feet between the rows. They may also be planted for arched training in rows four feet apart and the same distance between the plants. Stakes are driven midway between the rows, the fruiting canes are bent over, three to the right and three to the left, and tied to the stakes, thus forming an arch. Probably the most productive method of planting, and one to be recommended for small gardens, is that of planting in lines, one foot between the plants and five feet between the lines. When planted in this way they should be trained to a trellis. Strong stakes

must be inserted in lines about twelve feet apart and wires stretched on these, the first at two feet from the ground, the second at four feet. There must be a strong straining post at each end of the line to keep the wires tight. To these wires the fruiting canes are tied, each cane to be free from its neighbour and leaving room for the successive cane to be trained between. The top of the bearing cane should be cut off about a foot above the top wire.

When planting, plant firmly, and afterwards cut the canes down to within six inches of the ground; or, if preferred, they may be left until spring and then cut down as soon as they show signs of growth. Put a mulch of short litter round the plants; this acts as a protection for the roots in winter and also as a fertilising agent. The object in cutting down the canes is to induce the development of strong ones from the base during the season for subsequent fruiting and also to lay a foundation for profitable plants for future years.

Most inexperienced persons would leave the cane the full length after planting in order to get fruit the first year. This is a mistake. The cane may bear a few fruits the first season, and miserable ones at that, but it afterwards dies, and probably leaves one or two weak and useless young canes, which seldom develop into productive plants, and in this case a year is lost.

After planting, nothing more will require to be done until the following autumn, except hoeing between the rows to keep down weeds. At the end of the first season after planting, three or four of the strongest canes made during the summer should be selected and tied to the wires, and the rest cut out.

General cultivation consists in an annual heavy mulch of manure in early spring. Manure should never be dug in, as the digging or deep forking will injure the surface-feeding roots. Hoe occasionally during summer to keep down weeds. In autumn, about September, all the old canes which have borne fruit should be cut out; this will allow light and air to reach the young canes, and they will ripen better and be more fruitful. Later on thin out the current year's canes, leaving four or six of the strongest to each clump, tie these to the wires, where support is given, and cut off the unripened tip. The annual pruning and training consists of a repetition of this practice.

Raspberries are usually allowed to grow in the same place for several years, therefore heavy annual dressings of manure are required. This should not be neglected if the best results are to be obtained.

A few of the most suitable varieties are:—

* Written in October.

Superlative, probably the best raspberry grown. The berries are dark red, very sweet, and ripen early—one of the best for eating and most suitable for bottling. The canes are strong and vigorous, it is a most suitable variety for trellis. Norwich Wonder, a vigorous sturdy grower, most suitable for large plantations where no stakes are used. It is splendid for preserving. Baumford's Seedling and Hornet are also to be recommended; they are good growers of well proved merit.

G. VENNARD.

Sternbergia lutea, commonly known as the Winter Daffodil, is the supposed Lily of the Field, of Scripture, a native of the Mediterranean region from Spain and Algeria to Syria and Persia. There are several forms of this, but the variety *angustifolia* is by far the best, as it soon becomes established and blooms more freely than any other. This and the type are always an attractive feature in the Cambridge Botanic Gardens at this season of the year, with their rich deep yellow flowers. *Sternbergia Fischeri*,



Photo by]

STERNBERGIA LUTEA

[F. G. Preston

In Cambridge Botanic Gardens.

Sternbergias.

FEW plants are more valuable and attractive than the genus *Sternbergia* either in the rockery, the open border, and even for the edge of shrubberies, for they brighten up the garden with their beautiful yellow Crocus-like flowers at this season of the year for quite two months, and with such bulbs as *Zephyranthes*, *Colechicums* and *Crocus*, that flower during the autumn, they add a touch of warm yellow, which others lack. It is essential that they should be planted in a warm spot in well-drained soil and should be left undisturbed; apart from that their requirements are so easily met, that one wonders why this beautiful class of plant is not more often grown.

a native of the Caucasus, somewhat resembles *S. lutea*, and by some authorities is considered only a form of that species; it differs, however, in blooming in the spring, and by its stipitate ovary and capsule. *Sternbergia macrantha*, from Asia Minor, is a handsome species, but not so reliable as forms of *S. lutea*, although its large bold flowers are double the size; the flowers appear in the autumn, but the foliage does not appear until the spring. Another species not usually seen in cultivation is *S. colchiciflora*, a native of S. Europe, and another autumn-flowering species, the foliage of which appears in the spring; it is of diminutive growth when compared with forms of *S. lutea*, and the perianth segments little more than an inch long.

Cambridge.

F. G. PRESTON.

Bad Flower Gardening at Kew.

THIS, we should explain, is the title of a pamphlet which has reached us lately and purports to criticise and denounce a system while making no reflection on the responsible authorities charged with the management of the "first botanic garden in Europe."

The writer, W. R., if we make no mistake, is a horticulturist of world-wide repute and one to whom gardeners owe an immense debt for the magnificent fight he has made for the proper use and cultivation of hardy plants as opposed to the system of "bedding out" dwarf tender plants in geometrical designs. No reasonable person will deny that "bedding out" in the old style was carried to excess often in positions quite unsuitable. It is a moot point, however, whether W. R.'s views are not as stereotyped as the system he denounces. He "went to Kew early in September to see what the summer had left of the beauty of the flower garden and saw a dismal sight." Well, considering the season and the fact that all skilled labour at Kew had long since gone to the war, we think W. R.'s attack savours rather of hitting below the belt, for, though denouncing the system only, he could hardly expect it to be fairly represented under present conditions, and doubtless the authorities who cater for the million did their best with the material in hand.

The flower garden particularly referred to, as many of our readers will know, lies between the pond and the palm house, and is bounded on both sides by straight lines. The beds are laid out in a formal way much less complicated than is often the case, but from several years' experience of digging and planting these same beds, we are disposed to agree that their number might be reduced and their size increased with advantage, for we have spent many trying days under a scorching summer sun "bedding out," and have been glad to escape into the palm house for a few moments' respite.

W. R. would banish all the tender plants, and in their place proposes to plant hardy herbaceous plants, Roses, Clematis, Honeysuckle and Jasmine, with which Kew abounds in glorious masses elsewhere. Incidentally he would do away with the grass between the beds and substitute dusty gravel or hot flags for paths and hard stone edgings to the beds. Why do away with the fresh green grass, the glory of our British and Irish gardens and the envy of every visitor to our shores?

From the palm house to the pond, but a few yards at most, W. R. would have a pergola to "give shade on hot days." There are noble trees enough to give all the natural shade

required during the few really hot days experienced in our climate, but we agree as to the value of the pergola to display the beauties of many of our hardy climbers, of which he mentions only two. But why introduce an architect to design it? Simplicity and stability should be the first essentials, and if a gardener marks out the site and extent, a bricklayer can do the rest if W. R. hankers after bricks and mortar. We had previously supposed him rather averse to architects in the garden.

Further paragraphs refer to water and waterside plants, and the suggestion is made that *Martian Water Lilies* might adorn the pond, which, if we recollect aright, is far too deep for anything of the kind; and, as for the water fowl, "this is a Royal Botanic Garden" certainly, but public, and the great B. P. will have what it wants no matter what individuals may think.

If the authorities at Kew ever feel impelled to make any changes in the flower garden we hope it will only be in the direction of reducing and simplifying the beds; at Kew, with its 300 acres, there is room for all styles of gardening, and we trust the bedding-out will be retained, but amplified by the greater use of specimen *Fuchsias*, *Streptosolen*s, *Heliotropes* and many other plants which cannot be grown in sufficient quantities and to a large enough size indoors to display their true beauty, and which when tastefully bedded out give joy and pleasure to thousands.

B.

A Beautiful Greenhouse Plant.

A PLANT that has recently come to the front, although by no means new, is *Lindenbergia grandiflora*. It is one of the most valuable of greenhouse plants, with its large, bright yellow, musk-shaped flowers, nearly an inch in diameter, which are borne in great profusion, and last for quite three months. For a number of years this beautiful but little known plant has been a conspicuous feature in the conservatory in the Botanic Gardens, Cambridge, during the late autumn and winter months. It is of easy cultivation under greenhouse treatment, but requires a little shade during the summer, and although of perennial nature, it is best given annual treatment, similar to *Chrysanthemums*, cutting the plants back as soon as they pass out of flower, when cuttings are freely produced, growing on two or three in each pot to obtain good bushy specimens, which grow 2 or 3 feet high and even more. For cutting they are very valuable, as the sprays remain fresh for a long time in water. It is a native of the Himalayas, and is common on the hills from Simla to Bhotan, at an elevation from 2,000 to 6,000 feet.—F. G. PRESTON.

Tree and Shrub Notes.

At this time of the year there is generally some cutting or pruning to be done among large trees. This work is best done this month, for it may be noticed that the sap of many trees, particularly those with large leaves, such as walnuts, horse-chestnuts, and sycamores, begins to flow early in the new year. Any cutting required to the members of the Conifer family should also be done now and not left till the spring.

A native of New Zealand, it was first seen in this country about 1875. It is interesting from the fact that it belongs to the *Viola* family, and is the only hardy genus of that family of a shrubby nature. There is another species, *H. Chathamica*, a native also of New Zealand, not so well known as the former; this is genuinely evergreen, with much longer leaves, which are toothed and prominently veined, but is not so hardy.

Cambridge.

F. G. P.



Photo by]

[F. G. Preston

HYMENANTHERA CRASSIFOLIA.

Hymenanthera crassifolia.

In the few places where this little known shrub is grown it stands out very conspicuous among other berried shrubs at this time of the year by its habit, neat foliage, but more particularly by its white berries. It is of a dense semi-evergreen habit, from 4 to 5 feet high, with stiff cylindrical or somewhat angular branches covered with ash-coloured wrinkled bark. The flowers, which are almost stalkless, are very small, with brownish reflexed petals, and it is by no means beautiful as a flowering plant, but in the autumn it is very attractive when laden with its masses of white berries, which remain on the plant for a long time through the winter.

Rhododendron micranthum.

In habit and foliage this is a very distinct *Rhododendron*, and when in flower might be easily mistaken for a *Ledum* at first sight. For its introduction we are indebted to Mr. E. H. Wilson, who sent home seeds from Western Hupeh in 1901. With small narrow leaves it is an informal bushy shrub up to 4 feet or more in height and as much in diameter. The flowers are white, half an inch across, closely arranged in an almost flat terminal raceme. Found growing at fairly high elevations the species is quite hardy. It is quite a good subject for a large rock garden, the front of shrubby borders and a lawn bed. A figure appears in the *Botanical Magazine*, tab. 8198. A. O.

Quercus pontica.

THIS rare and little known oak is quite distinct from all other deciduous species in cultivation. A couple of small specimens growing in the oak collection at Kew suggest that it is never more than a small spreading tree, or possibly a large shrub. The leaves are large, 6 to 7 or 8 inches long, half as wide, and conspicuously ribbed. In winter the large terminal buds are a distinct character. *Q. pontica* is a native of Armenia and the Caucasus, and is sometimes known as the Armenian Oak. A. O.

Alnus cremastogyne.

THIS is a distinct Alder from China which promises to prove of value as an ornamental tree in our pleasure grounds. Specimens were collected by Dr. Henry nearly twenty years ago, but for its introduction to our gardens we are indebted to Mr. E. H. Wilson.

A. cremastogyne has large shining green leaves up to nearly 6 inches long and half as wide. It has distinct fruits, which are solitary and borne on long stalks resembling in this respect an allied species, *A. lanata*, also from China.

Valued as waterside trees both these Alders of Western China should find a congenial home by the side of lakes and streams in Ireland.

A. O.

Rosa Willmottiae.

THIS is a very elegant and dainty wild Rose, introduced by Mr. E. H. Wilson from China. It is one of the first species to flower, being covered with rosy-red flowers borne on the slender graceful twigs in May. Naturally attaining its greatest beauty when in flower, *R. Willmottiae* is ornamental at all seasons of the year. Growing with age into a tall bush 7 to 8 feet or more in height, the leafless twigs are attractively armed with prickles in winter, clothed with elegant foliage in summer, and showy orange-red fruits in autumn. In addition to other uses in the pleasure grounds *R. Willmottiae* is useful as a lawn specimen, and makes a very attractive informal hedge.

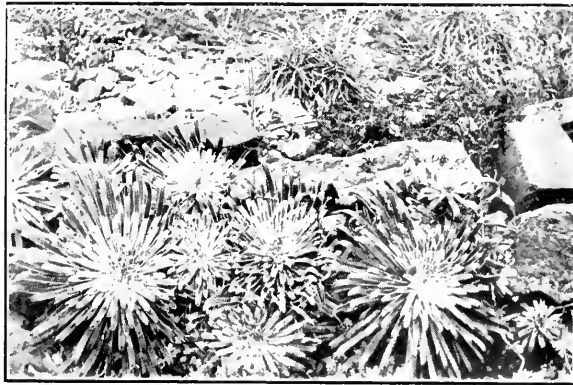
A. O.

Late Roses.

IN the absence of frost one could cut beautiful blooms daily during the autumn and winter months of 1916. To-day (3rd December) many of the Hybrid Teas are still showy, such as Lady Pirrie, Rayon d'Or, Simplicity, and Marquise de Sinety on two-year plants. And I have just cut a good bunch of Hugh Dicksons off maiden plants; most of these are perfect blooms, the colour fully as good as in summer: quite a treat to cut in an open nursery field within a few weeks of Christmas. It is no wonder that Hugh Dickson is a popular Rose, but, though thoroughly appreciated as a bedder and for pegging down, and unrivalled as a standard, I do not think it is so well known as a climber for low wall or paling. Yet, perhaps, the finest plant of this Rose which I have seen is treated as a semi-climber in Miss Pentland's garden at Clontarf, and when I saw it the plant was covered with beautiful blooms. J.M.W.

Climbers for Walls, &c.

MUHLENBECKIA COMPLEXA, an evergreen from New Zealand, is very free-growing, with thin wiry shoots that cling freely to any support



SAXIFRAGA LONGIFOLIA.

At Mount Usher.

The leaves are scattered on these shoots, dark green, small and heart-shaped, rather like the leaf of Maidenhair Fern. This species is hardy in most parts of Ireland, and will do in sun or semi-shade. The flowers are quite small and inconspicuous, and of a waxy green.

M. varians is also a rapid grower, but is deciduous, and loses its leaves every autumn. In this species the leaves vary considerably, as the name implies, and on one shoot several different shapes will be found. It is an excellent species for any spot where some quick grower is wanted, as it very soon forms a thick mass of light green foliage.

Polygonum baldschuanicum, a native of Bokhara. This is another very free and quick grower. From July to September the lateral shoots carry a loose cluster of creamy-pink flowers. Planted alone, it is not a suitable plant for a wall, but allowed to mix with any evergreen, preferably a dark one, ivy or such like, it gets a back ground and the bare stems during the winter are hidden.

R. M. P.

Saxifraga longifolia.

At its best this is undoubtedly the finest of all the incrusted Saxifragas. The rosettes of long silvery leaves may measure up to 6 inches across before the flowers are produced, and at that stage are as beautiful as at any in the plant's existence. The flowers are produced in long pyramidal masses of great beauty, and well worth waiting for. The time of flowering is uncertain—plants may live and increase in size for a number of years before flowering, and the larger they become ere doing so the finer the inflorescence is likely to be. Side shoots are not usually produced, though sometimes they are when the centre of a rosette is injured prior to flowering. Seeds form the best means of

Nerine flexuosa alba.

ALL the Nerines are useful subjects for decorating the cool greenhouse, but few are more attractive than the white Zigzag Nerine (*Nerine flexuosa alba*), with its snowy-white flowers, the petals of which are elegantly undulated and recurved. A batch of this choice free-flowering plant, intermixed with other Nerines or similar plants, will add great beauty to the greenhouse. Like all other of this genus, it must be well ripened in the summer by placing the plants in a dry place in full sun, withholding water from the time the leaves die until the flower scapes appear, when they may be repotted or top dressed.

F. P. G.



PRIMULA CAPITATA.

propagation, and to ensure the resulting seedlings being true it is necessary to enclose the inflorescence in a bag made of gauze or similar material to prevent cross-fertilization. The seeds should be sown in light sandy soil and covered very finely with silver sand; cover the pot with a piece of glass and shade from bright light. Care is necessary in watering as with all small seeds, and is best carried out by standing the pot in water up to the rim and allowing the water to soak up. When large enough the seedlings may be pricked out into pans or pots of gritty soil and grown on till large enough for planting out on the rockery. A vertical position is best, and by planting before the rosettes get too large it is much easier to get the roots firmly packed into chinks and fissures. Although in the Pyrenees *S. longifolia* is said to frequent shady cliffs, in our climate it appears to thrive quite well in the sun.

Our illustration shows a group of plants in the gardens of Mr. E. H. Walpole at Mount Usher, Co. Wicklow. B.

The Cross Vine.

BIGONIA CAPREOLATA.

THIS is a very pretty and interesting climber for a sunny wall in well drained soil. At first it is sometimes difficult to establish where much frost is experienced in winter, but when it has attained some height, more satisfactory progress is made. It is practically evergreen in mild localities, but here sheds most of its leaves in winter. The leaves are made up of two leaflets, varying from three to four inches long and an inch or more wide, their size depending on the vigour and health of the plant. The flowers are tubular, up to two inches long, and of a fine rich orange-red colour. A sunny wall is essential in most districts, but in the milder parts of the south and west it should be possible to get fine specimens established on old trees, much in the way that Rambler Roses are often grown. A variety, *atrosanguinea*, is in cultivation, with reddish purple flowers. B., Dublin.

Notes on some New *Primulas*.

By MURRAY HORNIBROOK.

It seems only a few years ago that—excepting those from the European Alps—very few *Primulas* were known to our gardens beyond a few well known species, such as *P. japonica*, *P. denticulata*, *P. rosea* and *P. sikkimensis*, but now the journeymen of such keen collectors as Forrest, Wilson, Kingdon Ward, Purdom and Farrer have opened for us the doors of those *Primula* treasure houses—the Chinese Alps—and, as a result, one is almost bewildered by the number of new *Primulas*—some already obtainable through nurserymen, others still in the possession of a few botanic and private gardens.

Unfortunately a good many of these new *Primulas* do not seem likely to prove “good garden plants.” I write this advisedly, having learnt from many disappointing experiences that few *Primulas* that are not “good garden plants” are likely to remain with me long. I can rarely get shade in my garden without getting also the roots and drippings of trees. Equally difficult is it for me to satisfy the requirements of moisture lovers in a limestone soil with a far distant pump as the only source of artificial moisture. Others more happily situated may therefore expend their money upon these, at present rather expensive, luxuries with a better hope of keeping them as permanent joys of their garden than I ever can, but as, through the kindness of friends, I have already been enabled to try quite a large number of these novelties, my experience of them may be useful to readers of IRISH GARDENING.

I have had several *Primulas* nearly akin to *P. cortusoides* and *P. obconica*, as may be expected, therefore, the majority of them are not very hardy, but *P. Veitchii* is an exception, it has large thick *Pelargonium*-like leaves and throws up quantities of stems bearing good sized bunches of flowers in varying shades of crimson pink. It seems quite hardy here on a northern rock face growing with *Ramondias*. *P. Sino-Listeri* is like a small *P. obconica*. I have it in sandy leaf mould, but it does not seem very hardy. *P. septemloba*, with drooping heads of deep magenta-pink flowers, seems perennial if protected from overhead winter moisture. *P. pycnoloba* is an extraordinary plant, with leaves of thick blanket felt and small flowers encased in enormous creamy calices. It seems to resent damp and to be beloved of slugs. I cannot keep it out of doors. *P. malacoides* and *P. Forbesii* are two charming annuals which usually sow themselves freely. I lift the seedlings and keep them in a frame over winter, as neither of them are very hardy. *P. Forbesii* is minute and fairy like; *P. malacoides* stronger, with wonderful scented foliage.

P. Forresti I always lost until I planted it out in full sun tightly wedged between rocks; here it has lived and increased for three years, so I am hoping that I have solved its difficulty. Its deep cowslip yellow flowers are beautiful, and its foliage has that wonderful pineapple perfume that one finds in several of these Chinese *Primulas*.

One of the most distinct of the new sections is known as *Muscarioides*. Most of the forms in this section have spikes of flowers just like grape Hyacinths. The best known was sent out as

P. muscarioides, it is now known as *P. Girdaldiana*. It has spikes of blue flowers, but the individual flowers are very small. *P. pinnatifida* is a much smaller plant, with flowers of deepest blue. *P. deflexa* is very fragrant and has a much finer spike of flowers than the dowdy plant originally sent out under this name, but now recognised as *P. Watsoni*—this has heads but sparsely covered with dull purple flowers nearly smothered in “meal.” All these forms, however, are quite put into the shade by an innocent imposter that flowered for the first time this season; its seed—together with that of another *Primula*—was sent home by a collector who mixed his labels. The *Primula* I got was named “*P. tibetica*,” and turned out to be a magnificent plant of the *Muscarioides* section, with much larger flowers than those of *P. Girdaldiana*, varying in colour from pale to a pure deep Oxford blue and with a fragrance unsurpassed by that of any other *Primula*. It is a gem of the first water, but its name puzzled me, for I knew that Sir George Watt, in his monograph on Indian *Primulas*, classified *P. tibetica* with *P. rosea*—to which section the new *Primula* could not possibly belong. I now learn from Prof. Bayley Balfour that it has been determined that the new *Primula* is a new species and is to be called *P. Menziesii*, while the second *Primula*—by error named *P. bellidifolia*—is the true *P. tibetica*. (This plant is like a tiny *P. rosea*, each thread-like stem bearing a single pink flower—an interesting, but not a showy plant.) The last member of this section that I have grown—*P. Littoniana*—seems to be the best perennial among them. It is most distinct—from narrow hairy leaves it sends up what appear at first to be dwarf scarlet kniphophias until the purple flowers break through the scarlet bracts. I grow it in sandy loam, and provided it does not get too much overhead winter wet it comes up again every year, but seems after its second year to deteriorate; it must be either a gross feeder or a surface feeder, and in future I will lift it and replant it in fresh soil immediately after flowering. As regards the others, *P. Girdaldiana* usually flowers two years and then dies, *P. Watsoni* and *P. pinnatifida* flower and die, *P. deflexa* seems more perennial; but, as all come freely from seed, I find it safer to raise a few seedlings yearly and thus anticipate any shortage.

The section *Soldanelloides* contains some of the most beautiful *Primulas* in existence. So far I have only grown one—*P. nutans*—which flowered this year. It has a spike not unlike those of the *muscarioides* section, but instead of their minute flowers it has fewer flowers, but much larger—each of them about the size and shape of a *Soldanella*—wide open cups of the purest lavender-blue, almost a plumbago blue and dusted with meal—the effect is indescribably lovely. My plants are so far only in pots, but not one died after flowering, and all being well, I will put some of them out next season in similar soils and situations to those in which *P. Littoniana* succeeds here—good turfy loam, leaf mould and silver sand—in a spot not too dry or water soaked.

P. Knuthiana is like a strong growing *P. frondosa* and seems to like similar treatment—rich loam fairly damp. *P. secundiflora* is of the same section as *P. sikkimensis* and has a few large drooping port wine coloured flowers. So far it is not a success here. It seems to require

a wet summer and a dry winter; at any rate I do not seem to be able to give it a damp enough soil in summer without running the risk of losing it in the winter—a light porous soil kept well watered in spring and summer should suit it better. *P. pseudo-sikkimensis* has larger flowers than the type and paler yellow; it has no fads. *P. pulchella* and *P. pulchelloides* I cannot keep through my very damp winters. *P. Maximowiczii* is quite unlike any other *Primula*, dull red-green leaves and a loose spike of mahogany red flowers, like a Roman Hyacinth. In var. *langutica* the flowers are almost black. I flowered three plants (out of about half a dozen), two in pots, one in leaf-mould on rock work; all failed to set seed, and all died after flowering.

P. vineæflora is a minute marsh plant, said to love running water and sharp drainage; it grows very slowly. I give it lots of water and a pot half full of crock; under such conditions my plants have lived for two years, but so far have not flowered.

P. Bulleyana, *Beesiana* and *pulverulenta* are too well known now to require any further description, but a new plant of this section—*P. helodoxa*—is a beauty, a good grower and very deep yellow flowers.

P. capitellata is a rare but dull plant, about midway between *P. farinosa* and *P. denticulata*. It is quite easy to grow in stiff well drained loam. *P. Kaufmanniana* is another rare plant, like a small *P. cortusoides*; it has survived five seasons in a leaf-mould pocket, but has never flowered. *P. Megasæfolia* has large bright green leaves and deep magenta-pink flowers, which it bears in winter or early spring, at which time frost often plays havoc with it, but I have it now growing out of a peat cliff, with a small plant of heather growing out above it and acting as a thatch; here it has flowered almost unscathed by frost the last two years.

P. nivalis var. *farinosa* was a rare purple-flowered *Primula* I had from Northern Asia, it bloomed and died, and from what I have since read about its character I am not surprised that I lost it. *P. saxatilis* is another plant near *P. cortusoides*, quite easy to grow in sandy leaf-mould in half shade, and seems fairly hardy here. *P. Reinii*—a Japanese—is like a tiny chinese *Primula* with pale rather washy pink flowers; it is rather a miff, and I doubt its hardiness; so far I have not planted it out.

P. suffrutescens—from America—is a most distinct plant, quite sub-shrubby in appearance, with rosettes of narrow stiff green leaves, rather like those of an *Androsace*; it succeeds with me on a cliff face, its foliage in full sun and its roots tucked away behind the cliff in a cool mixture of peat, leaf-mould and sand. *P. Inayati* is a rare *Primula* from the Himalayas, re-introduced by Glasnevin. It has very narrow and long bright green leaves and pale lilac flowers. It has survived three winters here in the open planted in a peat cliff in shade, there being a good admixture of sand with the peat in which it is growing.

Another new Himalayan, *P. Smithiana*, seems to be a good garden plant; it is like a smaller edition of *P. Bulleyana*, but with flowers of pure chinese yellow; heavy soil seems to suit it.

P. crosa seems very near *P. denticulata*, but is smaller and has serrated edges; it seems quite happy in ordinary loam. *P. Reidii*—another Himalayan—is, to my mind, the most beautiful

of all *Primulas*; it has leaves like an ordinary Primrose, but bristling with stiff silver hairs, and throws up four to six inch stems—white with meal—each bearing at the top two or three large cup-like flowers of the purest glistening white, with a distinct green eye; the texture of the flowers is almost velvety like a Rose, and the individual flowers are about the size and shape of *Campanula pulloides*. Unfortunately, it is not easy to keep, it seems a true perennial, but is liable to rot away in the winter, but I have managed to keep two pot plants for four years, and one of them set seed last year, from which I raised a few seedlings, so I trust I shall again see some small hairy leaves poking up next spring. I only once tried a plant out of doors; it flowered and never appeared again, and my stock has been too small to take further risks at present, but I am afraid its silky foliage implies a hatred of winter damp almost as irreconcilable as that of *Eritrichium nanum*.

In addition to these there are several new *Primulas* which have either not as yet flowered here or have not been tried out of doors. Of these *P. conspersa* is very distinct; its foliage is not unlike that of *P. capitata*, but the plants (which have not yet flowered) are throwing out strawberry-like runners which root and throw up leaves. *P. Loczii* has rosettes of narrow stiff olive-green leaves. *P. Purdom* and *P. Imperator* have not flowered, but one of the new Kew plants (*P. Sp.* 11041, I think) seems a fine thing, foliage near to *cortusoides*, flower stems erect, bearing good trusses of large deep pink flowers.

Last, but not least, comes *P. Winteri*, which I cannot keep in a pot, but which seems now quite happy out of doors. I have a couple of plants on a peat cliff and keep a small piece of glass over them from November to end of January. I know few sights more lovely than this *Primula* in flower, its dark green leaves thickly dusted with white meal, and its very generous display of large Primroses of pure lavender blue. I think it requires generous treatment both during its flowering period and for some time after, otherwise it is apt to be weakened by its lavish display of blossom and may die off.

In conclusion, a few notes on culture. Having no running water I plant all the moisture lovers, such as *P. Bulleyana*, *P. sikkimensis*, &c., in ordinary loam sitting on a sandwich of two peat blocks with some old cow manure between; the peat helps to keep the *Primulas* cool and the sandwich conserves the manure to the use of the plant above. Doubtful perennials, such as *P. Cockburniana*, *P. capitata*, &c., I treat as biennials; there are always a few self-sown seedlings and surviving old plants, but one feels safer with a pan of seedlings coming on. The seed of most of the moisture lovers resents germination in heat, and I find it simplest to shake their seed round the parent plants and get sufficient seedlings of these kinds by such means. *P. Juliae* does not flower freely here unless in a pot-bound condition, wedged between rocks, &c. I am going to try some pot-bound plants sunk in with their pots. *P. deorum* is a very shy flowerer unless it is grown in running water. *P. floridosa* and its cousins are surface feeders, and repay one for lifting them immediately after flowering and dividing and replanting in rich soil.

Any *Primulas* in pots that resent winter damp

are particularly liable also to rot in their pots if the frame is ever shut. The only way I can keep Primulas such as *P. Reidii* in this damp climate is by resting the lights of the frame upon four bricks, thus allowing a free passage of air night and day. If the pots are plunged up to their rims they do not seem to mind the cold in these circumstances, and Primulas of doubtful hardiness, such as *P. septemloba* and *P. Sino-Listeri*, have stood 25 degrees of frost without coming to harm.

In more favoured localities doubtless many of these Primulas will be quite perennial, but wherever artificial watering is possible I should recommend planting in the lightest possible soil—leaf-mould and sand. It will require more moisture in summer, but one will be far less likely to lose the plants in the winter. Finally, if you take your courage in both hands and plant out such treasures as *P. Reidii*, put a few small stones on the surface in a circle three or four inches from the plant and fill up the enclosed space with sharp sand, which will help to keep the collar of the plant from damping off. This sand round the neck will be found far more effective than stones; the latter as a rule only conceal slugs and bring them thus nearer the object of their desire, the sand “packs” better round the crown and is not beloved by slugs, who regard sharp sand as a highway to be avoided.

Forcing Seakale and Asparagus.

SEAKALE is a vegetable which is always looked for at the end of autumn and throughout the winter months in all establishments where any pretence of gardening is made, and when quickly grown and of good substance is very much esteemed. Perhaps of all vegetables it is the most easily forced: but even it requires some practical experience to keep up a succession of good kale for several months. It often occurs, perhaps for lack of convenience, that early forcing of this plant is done in the open ground, by pots being placed over the crowns of the plants, and these covered with leaves, dung, &c. As much more heat is required to force this vegetable out of doors at this season than is necessary in spring, it often happens when this plan is adopted that the first and second batches are long and spindly and very unsatisfactory. By far the best and most economical plan is to secure in November, or early in December, a number of cuttings by lifting old plants, and cutting the roots into pieces the thickness of one's thumb, and about five inches in length, the number of cuttings being regulated by the requirements of the establishment. In performing this operation it is advisable to make a clean cut across the top and a slanting one at the bottom, otherwise it will be a difficult matter to know which is the top of the cutting. These cuttings should be tied in small bundles, and placed upright in a sheltered position out of doors, where they can be covered to a depth of three inches, with old felt for preference, and there be allowed to remain to callus, which will have taken place by the beginning of February. If the weather be fine and the cuttings nicely callused, they should be dibbled into the ground at a distance of eighteen inches apart each way.

As soon as the plants make their appearance above ground, and it can be ascertained which

will make the strongest growth, all the weak ones should be removed. The result will be, by September, as fine a lot of plants for early forcing purposes as could be desired, and as soon as they have cast their leaves they will be ready to commence with. As they are required they should be carefully lifted out of the ground and planted in light soil in a cellar, or, where such convenience cannot be had, they may be planted, seven or eight roots in an 8-inch pot—a similar pot being used to cover them—and be placed in any structure where they can receive the benefit of a little warmth. As soon as the leaves of those in the permanent plot have fallen they should be removed, and the crowns covered with ashes, and when thought necessary, pots may be placed over a portion of them, and covered with leaves or manure, to bring them gradually along. But this should be deferred until the end of January, as far better kale will then be secured from them than if covered earlier in the season.

Asparagus is another highly esteemed and most useful vegetable. Fortunately it belongs to the category of easily forced vegetables, and can be secured in abundance at almost all periods of the year. The important point to remember about the successful forcing of this vegetable is to always have two or three fair sized beds of strong three year old plants, which have not been forced previously. As soon as the tops are yellow and hard they should be cut off, and the beds cleaned, and at once be well mulched with rotten manure to keep frost from penetrating too deeply into the ground. Preparations may at once be made for forcing this plant where there is sufficient material, convenience and a good batch of plants to keep up a succession until spring. Commence by collecting into a heap long dung and leaves, which must be prepared, by frequent turnings, to form a bed five feet high at the back and four feet at the front—the length to be determined by the size of the frames to be employed. On the top of this must be placed six inches of well decayed manure, on which place a frame. On the top of the manure place a third layer of chopped loam and about six inches of light, rich soil. Lift the plants very carefully, and place them in the frame as closely together as possible, with their roots nicely spread out. Cover them to a depth of about four inches with light, rich soil, and give a good watering to settle all down. The lights should then be placed on and kept covered for a few days, when air may be given, care being taken to watch the heat as it rises. If it be inclined to become too hot holes may be bored round the sides of the bed to act as safety-valves, and they may be plugged when the heat was diminished. By preparing a fresh bed in a similar manner as the previous one becomes exhausted, a succession of crops can be secured until the season for outdoor cutting commences.

J. J. CLEARY

Correspondence.

IN your November number there is an interesting note on *Dictamnus Albus*, formerly *white* *Fraxinella*. The most interesting characteristic of this plant is not mentioned—viz., that it emits an inflammable gas which may be lighted on a still, warm evening when the flowers are fully open: it burns without injuring the flowers or leaves, and gives off a pleasing aromatic perfume.

Seskin, Carrick-on-Suir. J. ERNEST GRUBB.

Three Years' Work at Sedums.

By R. LLOYD PRAEGER.

PERHAPS a brief account of experiences in an attempt to work out one of the most difficult genera which is in general cultivation may be of interest to those readers of IRISH GARDENING who, having themselves learned the difficulties of running down the species in some complicated and misnamed group, are inclined to look sympathetically on work of a similar kind. It was the late Canon Ellacombe, whose loss all gardeners deplore so deeply, who first urged on me the desirability of a revision of the Sedums found in cultivation; and after a second appeal from him, and a prompt and generous offer from the Royal Horticultural Society of London to publish the results of such an investigation, I took off my coat—metaphorically—and went at them. The study of this genus is rendered difficult owing to several reasons. First, a number of the species—and most of them common in cultivation—are polymorphic; they display a large range of variation, as regards size, growth-form, shape and colour of leaf, colour of flower, and so on; so that different forms of one species often appear, superficially, more distinct from each other than do allied but quite distinct species. Next, the nomenclature of the genus in gardens is quite hopeless; several common species are grown under a dozen names apiece, and one name is found applied to a dozen different species. Thirdly, these plants do so badly that herbarium specimens are often nearly useless to help identification, and can seldom be used without the exercise of great care, and without reliance only on critical characters, which are often minute. On the other side of the account, one was helped by the ease with which the species can be grown—though this advantage often proved the reverse, since the readiness of the plants to invade their neighbours' territory resulted in confusion of the labels unless much care was exercised.

Well, the first and the main thing to do was to get together as large and as complete a collection of Sedums as was possible, and fortunately I was well ahead with this work before the paralyzing

influence of the European War slowly clutched and strangled the free and easy intercourse at home and abroad which we had enjoyed so long. I begged, borrowed and bought in all directions. I plundered the British public collections. I worried my friends. I wrote perhaps a hundred and fifty or two hundred begging letters to foreign botanic gardens and foreign botanists. Parcels soon began to pour in—from England, Scotland and Ireland, France, Holland, Belgium, Denmark, Sweden, Norway, Russia, Austria, Italy, Spain and Portugal, Algeria, Canada and the United States, the Himalayas, Hong-Kong and Japan. I cannot indeed sufficiently thank the directors

of botanic gardens both at home and abroad, many friends—some of them, unfortunately, at present enemies—and many distant correspondents whose acquaintance I hope to make some day, for their generous response to my request for material. I had also the good fortune to get abroad just before war broke out, and made a good "scoop" of material at Berlin, Leipzig, Dresden, Hamburg, and Bremen. As a result a large collection was got together in my garden during 1914 and 1915. At first, until I had made myself familiar with most of the species, everything was grown and flowered. Later, with better knowledge it was in most cases difficult to examine material received. Altogether, some 1,500 separate plants were grown

and flowered, and about an equal number were either examined as received, or inspected where they grew in various public or private gardens.

The first result of my efforts, then, was the accumulation in the garden of a rather bewildering collection, with a wealth of obviously inaccurate names, enough to make one shudder. Even collections received from the most famous botanic gardens were evidently misnamed to the extent of one-third, or even one-half, of the total. The nurserymen's stuff was worse still—in one case every species was wrongly named. But with the flowering season of 1914 order began to evolve. Species after species was, in spite of frequent variability, run down, with the assistance of a collection of twenty or thirty of the leading floras of the countries in which the plants were native, and occasional reference to a much more extensive literature. Some species proved easy; others were very tough nuts to crack, especially



PRIMULA DEORUM.

Suburban and Allotment Gardens.

where the country of origin was unknown, or where the published descriptions were inadequate. In other cases difficulties arose owing to plants being sent with erroneous information attached to them. Thus, a *Sedum* received from a well-known English botanist as collected in Sussex proved to be a species unknown wild outside Japan; another from a Durham school garden received as found in Scotland, proved eventually to be the female plant of *S. fastigiatum*, a Himalayan species, of which I have never again seen the female in cultivation; and so on. Some collections, again, proved most interesting. Of a small consignment from the University Botanic Garden, Sapporo, Japan, two have turned out to be new to science. Two more new species were among a delightful collection of the tender and half-hardy *Sedums* which American botanists have of recent years been finding in such numbers in Mexico; these came to me from the gardens at Washington and New York. Still another new species—and this shows in what a state of confusion the genus has been—was found to be common in cultivation throughout Europe, eastward to Japan and westward to Canada, undetected and unknown, and grown under the name of one or other of its allies.

The nailing down of species after species allowed of more attention being paid to difficult and obscure plants, and these were also mastered one after another, as one grew more expert. Access to botanical literature became more important, and eventually I found it best to get typed out the original description, and other full descriptions of every known species, except where I had already easy access to the books concerned. The magnificent botanical libraries at Kew and the British Museum furnished the materials necessary to do this completely.

The present state of the business on which I entered so lightly is that my whole list of some 3,000 plants grown or examined fresh has boiled down to about 130 species, to which must be added about 15 species more which still await identification. Some of these—notably those contained in an interesting package of seed kindly collected in Yunnan by Rev. Father E. E. Maire—are still immature; others have not yet been induced to flower, in spite of efforts at home kindly supplemented by others at Kew, Wisley and Glasnevin. Another season will, it is hoped, suffice to run down most of these, when they will be, like all those which have preceded them, figured by my friend Miss E. Barnes, and a full description drawn up. So far eight species new to science have been definitely recognised, and these have been named and are about to be described in the "Journal of Botany." The material still remaining will undoubtedly yield some more new species, and when this is worked out the full results, with a figure of every species found to be in cultivation, will be presented to the Royal Horticultural Society for publication.

I shall conclude by saying that the study of the *Sedums* proved quite absorbingly interesting, although most people would not consider them as being a very interesting group; I am sure a similar study of any of the other numerous garden genera which stand in need of revision would prove equally fascinating, and I would cordially urge my readers to try specialising in some group which is in need of similar attention; I can assure them that I have found it the most exhilarating sport that can be imagined.

INTRODUCTION.—It is confidently anticipated that during the season now commencing a great extension of allotments will take place in the various Irish towns and cities, consequent upon the amount of public opinion which has recently been focussed upon the matter and the probable extension of the British Defence of the Realm "Allotment" Regulations, or an extension of the Small Holdings and Allotments Act to include Ireland. In suburban gardens, consequent upon the dearness of vegetables, it is to be expected that much of the ground at present under flowers and grass will be turned into the production of vegetable foods.

It is hoped that the monthly notes in this column will be of practical value to both holders and occupiers of suburban gardens.

WORK FOR THE MONTH.

CROPPING THE GARDEN.—Decide early what ground is to be cultivated for vegetables, make a measured sketch of it, and then draw up a plan of cropping for the first crop, with such companion crops—like lettuces and radishes—as may be grown with it, also allowing for successional cropping where the district is sufficiently favoured to get two crops in the same season. (Transplanted leeks after cabbages, &c.) In drawing up a scheme or plan of cropping for the large garden decide to grow the vegetables which may be considered necessary—from past experience or from the housekeeper's records—to keep the household supplied throughout the year. Where the garden is a small one aim particularly at growing the *necessary* vegetables which are dearest at the shops, growing the crops, where possible, so that they come into use before other supplies are available or after they are over. Arrange the crops so that those of the same type and requiring similar methods of cultivation (cabbages and cauliflowers, carrots and beet root) are grown in blocks together, growing them on different ground to that which they occupied last year. Space tall growing kinds, like peas and beans, at wide intervals, and where at all possible run the rows north and south, so that each crop gets the maximum amount of sunshine.

SOIL OPERATIONS.—In old gardens with a good under soil, *trenching*—i.e., digging two feet deep and putting the top soil to the bottom with the bottom soil to the top—is the best form of cultivation to adopt. In newer gardens or where the subsoil is not of good quality—crude clay, for instance—bastard trenching or plain digging should be done, but even here it will pay to put down the top three inches of soil to the bottom of the trench, this usually contains millions of weed seeds, most of which will be smothered by such treatment. Grass should be similarly treated, the sods being placed at the bottom of each trench, about 12 inches deep, and a little salt, about two to four ozs. per square yard, put over it; this helps to get rid of wire worms, which are often troublesome creatures in newly cultivated ground. Manure may be applied just above the turf or weed layer; this will help to decompose the former, and by the time the plants

make a good rooting system will be in a suitable condition for the plant to obtain benefit from it.

EARLY POTATOES.—If early potatoes, or extra good main crops, are desired, the tubers should be put to sprout early. Shallow boxes of any type will do. Put in each box a layer of potatoes, bud ends up, then place the boxes where they will have plenty of light and air without being subjected to fro. t.

EARLY PEAS AND BEANS.—Those living in warm localities or favoured districts can sow a row each of early peas and beans, provided that the soil is well drained.

THE SEED ORDER, &c.—Select the kind of seeds you want, to meet the requirements of your garden, early, and then obtain them from the seedsman without delay: prepare labels, writing the names on them during bad weather periods: get all implements in good condition, anticipate future requirements: prepare pea stakes by cutting branches off trees overhanging the garden, and generally get things in thorough-going order, so that when the big advance comes along in the spring and more food materials are asked for, your garden, at least, will have done its share.

FRUIT PLOT.—Pruning should be completed at an early date, after which dirty trees should be sprayed with lime-sulphur or some other suitable preparation: this being done, the ground should be forked over, digging in manure to the older trees more particularly.

FLOWERS.—Prepare a trench for Sweet Peas, if good blooms are desired this should be about three feet deep and two feet wide. Place with the bottom layer of soil some vegetable refuse, leaves and manure: higher up a little well rotted manure, and nearer the surface a little well chopped fibrous turf or sod, with rotted manure, incorporating also a dressing of wood ashes, basic slag and charcoal or soot, in equal proportions—putting on about 6 ozs. per square yard of the mixture.

W. H. J.

Daphne Dauphini.

THIS is a delightful evergreen flowering very freely now in the middle of November, and likely to continue some time should the weather prove favourable. It is a hybrid between *D. collina* and *D. odora*, neither supposed to be really hardy, though flourishing in the open in some parts of Ireland. The parents are sometimes given as *D. sericea* × *D. odora*: *D. sericea* being a species closely allied to *D. collina*, and apparently often confused with it. The hybrid seems quite hardy in the climate of Dublin, which is by no means ideal in winter at least. A peaty soil suits it admirably, and at least half shade seems beneficial. In the Botanic Gardens at Glasnevin a nice bush is flowering freely in a narrow border on the north side of one of the greenhouses. The flowers are reddish-purple, borne in small clusters and are sweetly scented. The glossy green leaves are about a couple of inches long and are themselves attractive. *D. Dauphini* is well worth attention by those who desire to have their gardens interesting and attractive over as long a season as possible.

B.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill, Shane's Castle, Antrim.

GENERAL REMARKS.—The year 1917 should be a year for all gardeners, professional and amateur alike, to stir themselves, in the way of utilising all their energy and ground to the very best advantage: to help, in their line, to stave off anything like a famine in this country. A gardener in the northern counties often finds he has to cope with many difficulties that his southern friend cannot understand, in the way of hardening off stuff before planting out, or getting in crops early, so that in these notes for the year I would have young gardeners to understand that no hard and fast rules can altogether be observed, but they must be always ready to adapt themselves to the conditions they have to meet and the conveniences they have to meet them with.

VEGETABLE GARDEN.

Owing to the very wet weather we have had lately the most of the work outside is in arrear. Push on all digging and trenching if weather is at all favourable, more especially for such important crops as onions, carrots and parsnips; if possible, double dig or bastard trench your ground for these crops. The onion ground treat extra well in the way of manure and compost heap. Take advantage of frosty weather to get all manure wheeled or carted on to vacant plots: keep it in good sized heaps in case it has to lie for a time: it would be dried up and lose its goodness in small heaps.

THE SEED ORDER must now receive attention: do not hurry over it, and stick to good old varieties you know well: do not try too many novelties all at once, but, all the same, gardeners should try a limited number every year, so that older varieties may be discarded gradually in favour of better sorts, for there is just the same bother growing a bad variety as a good one.

SEED SOWING.—Where heat can be utilised, either from hotbed or pipes, onions may be sown in boxes. Sow thinly and do not force them too quick: sow also a box of cauliflowers, Early Snowball or Early Erfurt. Prepare a frame for early Short-horn carrots. The way I proceed is to form a bed of leaves and straw manure—mostly leaves—about 4 feet deep, tramp them well, then put a layer of sandy soil on top, 9 inches deep: sow carrots broadcast (I always sow a pinch of radish seed with the carrots), then cover with finely sifted soil, and one watering will suffice until the seedlings appear. According as you are using your radish you are thinning your carrots at the same time: sow also a line of lettuce at the end of the frame. Sow a pan of tomatoes: also cucumbers (if you want an early crop), sow one seed in a 3-inch pot and plunge into a nice bottom heat of 70°, withhold water until the seed leaves appear. A sowing of an early pea may be made in narrow boxes or 6-inch pots, cover with boards to keep off mice or soak seed in paraffin before sowing.

FORCING.—Bring in rhubarb and seakale to the forcing house at regular intervals. When

lifting seakale crowns for forcing, prepare the best rootlets for cuttings, tie in bundles and plunge in ashes till time for planting. Of the seakale that is to remain in the ground, cover half of it with strawy manure and leaves, the other half with ashes, then all will not be coming in at once. If you have plenty of house room make a sowing of French beans in pots—Osborne's early forcing I find reliable—but unless you have enough heat to force these well, they should not be attempted meanwhile. Blanch endive and chicory according to the demand you have for these delicious salads: at this season of the year they are much appreciated by all. It is usual to force a few early potatoes, and the sooner we get them in the better this year by the reports we hear. Get your seeds nicely placed end up in seed boxes, sprout them in some nice warm house by keeping them damp, and rub out weak eyes.

HORSE RADISH is usually a neglected crop: it should be lifted annually and the roots stored, and a fresh plantation made in trenched ground. This is a good month for the job; it will repay you for the trouble both by nice straight young roots and the general appearance of the plot.

FRUIT GARDEN.

Planting operations should be completed if the weather conditions are favourable. The ground should be prepared in early autumn to allow time for the soil to settle. Good drainage is essential to the successful cultivation of all fruits and should be given special attention. When planting fruit trees care should be taken not to plant too deep or too shallow, as is often done now in light soil, but try and strike the happy medium. After the hole is opened and before planting your tree drive a stake (a good stout one) first into the middle of the hole, then place your tree alongside of the stake, spread out the roots, then tread in your nice dry soil firmly and well, finishing up with tying your tree to the stake not too tight, but just tight enough to keep it from wobbling. Often one sees young trees ruined by driving in stakes after the trees have been planted. If any young trees require root-pruning—that is, growing all to timber—this month is not too late, but I prefer, if possible, to do it just before the fall of the leaf.

PRUNING.—If the pruning of gooseberries and currants is finished, rake up and burn branches, then proceed with forking between them and give a nice dressing of rotten manure round each bush; take advantage of the middle of the rows, where there are few roots, to dig deeply and get any annual weeds well down. Pruning and nailing of wall trees should be completed as early as possible, but avoid pruning if frost is very severe, for much damage may be done which will not be apparent till later.

STRAWBERRIES.—Established beds should be scuffed and cleaned, very lightly forked, and a good dusting of wood ashes between and round the plants, and over that a good dressing of farmyard manure should be given.

RASPBERRIES should be thinned out and tied to wires or stakes: a good liberal dressing of farmyard manure should be given, as raspberries soon deteriorate if not liberally treated in that way.

WINTER SPRAYING should be done in every garden, to every fruit tree, even though you see no visible enemy; prevention is better than cure any day. I use the lime and sulphur wash, which is non-poisonous and very effective. Choose a nice calm day for the operation.

INSIDE FRUIT.—Peach houses will have been thoroughly washed, and the trees pruned and retied, if not they should be done at once, as the buds are easily knocked off after this month. Vines should be cleaned and pruned by now, loose bark scraped and rods washed (if mealy bug is prevalent they will need to be more than scraped, as it is very hard to get rid of that pest), and the whole house thoroughly cleansed; the borders are sure to be dry if we have been trying to keep grapes hanging, so, after giving a liberal dressing of loam, wood ashes and bone meal, give the whole border a good soaking of weak liquid manure, open all ventilators and give plenty of air till ready for starting. If forcing strawberries is contemplated bring in a batch after washing the parts and scraping top soil; give them a nice top dressing and put them on a shelf near the glass and let them start away quietly at first.

FLOWER GARDEN.

The present time is suitable to examine laurel and other common shrubs; cut out any rotten branches and trim back any branches coming too far out on to the walk or grass. The borders consisting of flowering shrubs, such as Azalea Mollis and Rhododendrons, &c., should get a nice topdressing of leaf-mould or rotten manure, if available, for after the various rakings and surface cleanings it is bound to leave the borders exhausted; fork the border over, leaving it rough; it can be fined down later when dry.

TURFING.—Complete any necessary alteration to turf on lawn and repair grass verges where they are worn or damaged by the absence of light or the drip of trees. Use the roller after rain, for the more a roller is used the more satisfactory the lawn becomes.

Give a liberal coating of manure to herbaceous borders, and if there are not many bulbs use the spade when digging, and as you proceed any rearranging can be done, unless the border wants to be lifted, trenched and replanted. Make the clumps in your herbaceous border a good size, as nothing looks better (to my way of thinking) than good bold clumps of each variety.

SEEDS.—Sow East Lothian Stocks now if you want a good show of them this year; sow in boxes or pans, and bring them on slowly in nice quiet bottom heat, be sparing with the water, as they are very liable to damp. A sowing of Sweet Pea should be made this month; sow in pots, three seeds in 3-inch pots. Look after the cuttings in frames, such as Calceolarias, Pentstemons, and Violas. Pick them over, and give them plenty of air on mild days. Early flowering Chrysanthemums which have been lifted and placed in frames or peach house have developed plenty of shoots suitable for cuttings. They may be taken off now and inserted in boxes of nice sandy soil; place in a cool house and shade with paper from the bright sun till they begin to take root.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Barrymore, Pota.

THE KITCHEN GARDEN.

It is scarcely necessary for me to emphasise the importance already urged by other writers, to increase the quantity and quality of our home-grown foodstuffs as far as one possibly can, within his own particular scope, in the interest of the nation; and I think in such times as these we are now passing through that such work should claim the greater share of our attention. In order to economise labour and to use the supply of manure available to the best advantage, a rough plan should be drawn up of the position the intending crops are to occupy for the forthcoming season, and then the work of preparing each plot can be dealt with to the best advantage and the work pressed forward as speedily as the climatic and other conditions allow.

The rotation of crops is a question which needs to be studied, and although some crops, such as potatoes and onions, as examples, may be grown on the same site for a number of years with every success, providing the ground is suitably manured each season to repair that which is lost, others, such as all the Brassica tribe, require renewing; and then root crops, such as carrots, parsnips and beetroot, should follow on ground that has been liberally treated and worked as deep as possible the previous season to prevent the tap-roots coming in contact with raw manure, and so preserve their shape; therefore in a small garden especially a change of site for each subject is desirable. Ground that has been liberally treated with manure for several seasons will produce even better results by its omission for once and a dressing of lime given instead. Carefully save and keep as dry as possible the resultant ash from all smother fires; this will be of inestimable value in the spring for dressing ground previous to sowing or planting. Soot also, in addition to being a valuable fertiliser, is excellent for dusting growing crops of every description in the early morning when the dew is on them and greatly protects them from insect and other pests. Take advantage during frosty weather to haul in manure to the respective quarters and every opportunity when the weather is open to push on the work of trenching and digging, leaving the surface soil in as rough a condition as possible. The question of trenching is a debatable one, and much depends upon the nature of the subsoil and also what is to occupy the ground. Personally, if the subsoil is not too crude, I would not hesitate to bring it to the surface for the onion bed, thoroughly well working the soil and enriching it accordingly, giving the young plants a deep rooting medium of the greatest value of a dry season especially.

During inclement weather much work can be done under cover that will relieve the pressure which every month will bring later on.

POTATOES.—The whole of the tubers intended for planting should now be laid out thinly on trays or shelves in a cool, light structure. Young potatoes are usually eagerly awaited for, and for the very earliest supplies may be grown under glass, not necessarily with a lot of fire heat, in 10-inch pots or, with perhaps better results still, in empty kipper boxes. Use a moderately

light soil, fairly rich; grow as sturdily as possible, supporting the growths and topdressing with a similar mixture when necessary.

Pits and frames should also be utilised, and, if deep enough, filled up almost to the required depth with freshly-fallen tree leaves, which will promote a steady heat, and also use them up in a tidy manner and make excellent material for potting purposes and wheeling on to the ground next season; or shallow portable frames may be used and the leaves enclosed with stout, rough posts and slabs, and the frames placed on top. In any case thoroughly well firm before placing the soil on top and planting the tubers, and allow at least 18 inches to 2 feet between the soil and the lowest end of the light to allow for the proper development of the foliage. Tubers intended for planting, if not sufficiently advanced, may be placed on the border of an early fruit house, and lightly syringed when the weather conditions permit. Plant with a trowel a foot apart all ways, and if not already mixed in the soil, give a good dusting of wood ashes and soot. If required make a sowing or two of an early maturing radish.

RHUBARB.—During open weather the whole plot may be forked over, removing any weeds of a perennial nature. Lift and expose to the weather any further stools required for forcing. Give the bed a liberal dressing of manure, and towards the end of the month a few of the strongest crowns of an early variety may be covered out of doors with barrels, boxes, or even seakale pots, and well covered up with long straw litter.

ASPARAGUS.—If strong roots are available forcing may be carried out now with every success on a mild hotbed under a frame. Transplant the crown with as little delay as possible, covering well with fine soil, and thoroughly water in. Unlike most other roots, Asparagus is injured rather than benefited by undue exposure.

SEAKALE AND CHICORY.—These are easily forced, and where winter salads are in request the latter is indispensable and easily managed. Avoid too high a temperature, and whatever means are devised keep absolutely dark, and apply the heat as near as possible to their toes, and water freely with tepid water to settle the soil about them.

BROAD BEANS.—Where circumstances do not permit of autumn sowing an earlier crop may be obtained by sowing in boxes and raising in a cold frame than would be by sowing out of doors. This method has much to recommend it, and can be practised by everyone possessing a cold frame. Place the beans two inches or so apart and cover to the depth of half an inch. Any old potting or garden soil will answer the purpose. Protect from mice or rats, and thoroughly harden off before placing out of doors in March, when a row may be planted practically anywhere, besides the usually all-too-small south border.

MINT AND TARRAGON may be lifted and a few roots placed in boxes and brought on in a mild forcing pit. Sow a little cauliflower, such as Early London, in a well-drained pot or pan, using sifted soil, and raise in a gentle heat, keeping the seedlings as near to the glass as possible, and prick out into other boxes when the rough leaf is formed. Where autumn sowing is practised this will scarcely be necessary. Sow a little lettuce in the same way, or make a drill of each on a mild hot-bed.

CARROTS.—For frames on a mild hot-bed choose an early variety such as Sutton's Inimitable Forcing, and sow in drills six inches apart. Sown thinly they may be gradually thinned afterwards as required for kitchen use. A thin scattering of radish can also be made. Admit air cautiously, and always on the leeward side, and water with a fine rose-can when the weather is fine. These remarks apply to all early crops.

A sowing of turnips made in a cold frame facing south will produce choice young roots without the aid of any fermenting material.

PEAS.—Various methods are practised of raising seeds of this important vegetable under glass for subsequent planting out, such as in pots, boxes and turves. Practically the same remarks apply as to those given for broad beans, excepting that they need not have quite so much room. A practice I adopted last year, and which I hope to repeat this year, was as follows: The first opportunity in the new year, when the ground was workable, I pegged out a narrow south border for peas at ten feet apart, drawing fairly wide but shallow drills and sowed thickly with Early Marvel—a pea that I consider is hard to beat—coating the seeds well with red lead. I then covered each row with some old lights. Germination took place in about a fortnight, and a week or so later, according to the weather, a little soil was drawn to the rows, short bushy stakes put to them, and on the exposed easterly side a few spruce branches in addition. Between the rows I afterwards planted five rows of potatoes.

THE FLOWER GARDEN.

Much will depend upon the weather as to what can be practised; but, as in other departments, as much as can be possibly done to ease the work later should be put forward as speedily as possible. There is a vast variety of work comes under this heading, and a great deal peculiar to its own particular place. Any alterations of ground work, forming of new beds, planting of trees and shrubs, relaying of or levelling lawns, or repairing edges to walks where the latter have become too wide, should be carried out. If not already done the shrubberies may be forked over and all fallen leaves buried, and any top-dressings of manure applied to flowering subjects and others that need it, such as Hydrangeas and Bamboos, as examples. On fine days admit abundance of air, or, better still, remove the lights entirely from frames containing cuttings of practically hardy plants, and stir the soil with a pointed stick.

HARDY FRUIT GARDEN.

The principal work now claiming attention will be the pruning, tying or nailing of wall trees, and every comfortable opportunity afforded should be taken advantage of. The sooner this work on walls can be done the better before the buds begin to expand. Trees that have covered the wall space allocated to them need little pruning besides the shortening back of the spurs and tying in of any young growths required for extension, such as on plums, sweet cherries, pears and apples, that come under this system. Peaches and nectarines and Morello cherries are practically the only exceptions, and these three require similar attention, removing as much of the old

wood and laying in young growths of the previous season's. Overcrowding should be avoided in both cases, and especially with the first two named. Lay in the wood as straight and evenly as possible, remove any tight ties. Any stubborn growths on Morello cherries that were not tied down during the summer months and so brought into shape may be spurred back. It is a capital plan with young trees that are being trained to make a few chalk marks on the wall radiating from the base of the tree to guide the person tying, and so lay in a good foundation.

PLANTS UNDER GLASS.—There are two popular classes of plants that need attention this month with regard to propagating, viz.—Chrysanthemums and the popular Tree or Winter Flowering Carnations. The former may be successfully struck in boxes of soil in a cold frame, placing cuttings preferably from the roots of the old plants in rows 2 inches apart, and when well rooted, lifted and placed three in a 5-inch pot, and later into flowering size. This applies to decorative varieties.

Hints on Watering in Greenhouses.

AMATEURS are sometimes apt to overlook the importance of careful watering, and even some of those who realise it as one of the essentials in the life of a plant have no definite knowledge of the matter.

As in every art in life it is only practice which brings perfection, but with a few rules kept constantly in mind the careful amateur can take a good step along the path towards perfection.

First of all, bear in mind that over-watering is quite as harmful as under-watering—in fact at this time of the year, when drying out takes so much longer, the former would probably cause more harm to the plant than the latter. Therefore do not water a plant until certain that it is dry, as the roots if kept in a perpetually wet state will rot. There are three ways of finding out if the plant is thoroughly dry:

First.—Tap the pot with the knuckles, and, if dry, it will give a hollow ring. If the roots are still damp the sound will be a muffled one.

Second.—Lift the pots, and the dry ones will be found to be much lighter than the wet ones.

Third.—By the appearance of the surface soil in the pot, but judgment in this way will only be reliable after some months of careful observation.

Sometimes when the soil is quite damp, the pot will give a hollow ring. This occurs when the pot is cracked, or when the soil does not adhere to the side, as it sometimes fails to do when the plant has been potted up with damp soil.

The appearance of the weather must also be taken into consideration in watering. If the day promises to be very sunny more watering will be required than on a damp, gloomy morning, when there will be very little drying out during the day. A good time to water is between 10 a.m. and 12 mid-day, and during the summer season it is well to give the plants a look over during the afternoon. Hothouses require very similar treatment to cool-houses, but it is necessary to damp the shelves of the former to keep the atmosphere moist.

If all these points are borne in mind and added to careful observation there is no reason why an amateur should lose any of his cherished plants through mistaken watering. J. F. R.

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Contents

	PAGE		PAGE
Gardeners and Food Production . . .	17	Herbaceous and Alpine Plants . . .	22
A Connemara Garden (Illustrated) . .	18	Economy in using Potatoes . . .	23
Saxifrage <i>cotyledon icelandica</i> (Illus.)	19	Wonderful Plants . . .	24
<i>Antirrhinum</i> s or Snapdragons . . .	20	Seed Potatoes at the National Museum	24
<i>Hypericum patulum</i> <i>var.</i> <i>Henryi</i> . . .	20	Obituary (Illustrated) . . .	25
<i>Sternbergia</i>	20	Potato Growing in Allotments and	
A New Barberry	20	Small Gardens	26
The Winter Sweet	21	Suburban and Allotment Gardens . . .	27
The Maritime Pine	21	The Genus <i>Juniperus</i> and its Commercial	
<i>Illicium religiosum</i> (Illustrated) . . .	21	Importance	28
<i>Clematis Fargesii</i> (Illustrated) . . .	21	The Month's Work—	
The Allotments and how to Cultivate		Midland and Northern Counties	29
them	22	Southern and Western Counties	31



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No. 132

ARBORICULTURE IN IRELAND

1917

EDITOR—J. W. BESANT.

Gardeners and Food Production.

ONE cannot open a newspaper at the present time without being confronted with the word "tillage." It has been found necessary to urge—nay, also to compel—farmers to till in order to increase our stocks of home grown foodstuffs.

Now, gardeners, it is no boast to say, are past-masters in the art of tilling the soil, and it is on the results of their industry and experience that the value of deep cultivation has been demonstrated.

It has been no uncommon thing to hear private gardens described as luxuries, and a certain type of writer has occasionally urged their extinction, contemptuously referring to private gardeners as domestics, and ignoring the fact that private gardens have for centuries been centres of knowledge and industry which by their influence in their own immediate districts have had the effect of stimulating and encouraging amateurs to till and cultivate their gardens to such an extent that not a few have been able to worthily hold their own against professionals.

The effect then of thousands of private gardens, under the charge of a trained gardener, scattered through the counties of Great Britain and Ireland, has resulted in spreading a knowledge of proper cultivation which cannot but be of enormous advantage in the present crisis.

What we would urge now is, that every trained gardener in Ireland should do all in his power, in his own particular neighbourhood, to stimulate and encourage cottagers and others to cultivate to the utmost their gardens and allotments. Everywhere now public bodies are seeking land to provide allotments, and it is safe to say that many who seek to become tenants will be glad

of help and advice in the preparation and cropping of the ground. It is "up to" the head gardeners in Ireland to interest themselves in making a success of any and every effort at home production of food, and by freely offering to place their experience at the service of the community they will be doing an immense service to the State. Throughout the year there will be endless opportunities of advising as to the continuous cropping of the ground, and timely advice regarding strains and varieties will be helpful. Far too much reliance is still placed on old-fashioned types, while new and improved strains are left to the up-to-date trained man. In a small plot it may not be advisable to grow too many different kinds of vegetables—all the more reason then to grow only the best and most prolific. Who is better qualified to say which are the best than the trained gardener who year by year is continually experimenting for his own and his employer's benefit?

Gardeners can also help by contributing their experiences to the gardening papers. Advice as to cultivation, cropping and choice of varieties will be welcome to many who have never read a gardening paper hitherto, but will now, no doubt, be shyly turning over its pages at the bookstall, finally bearing it away for further study at home.

We appeal confidently then to the trained gardeners of Ireland to let no opportunity pass of helping in the great national work of food production, and prove that in the hour of the country's need they were not found wanting.

Gentlemen, it is now or never!

A Connemara Garden.

By MURRAY HORNIBROOK.

It is a long stretch of road between Galway and Clifden, and although in its first 17 miles—to Oughterard—it passes through scenery at times picturesque and beautiful, upon leaving this town and mounting the first hill one feels that one has left civilisation behind one; no longer does the road skirt well-timbered parks, but it plunges down steeply to a treeless region of bog, heather and lake, up hill and down dale the unfenced road pierces its way through the otherwise tractless bog for mile after mile, skirting the fringes of an endless number of lakes and the bases of the Maam Turk and Twelve Pins Mountains; for a time the loneliness and majesty of this scenery is absorbing, but after 15 or 20 miles of it one welcomes all the more eagerly the sudden change to a view of a tree-topped hill with a house and patches of colour standing out, which a sudden bend to the left of the road, about 3 miles beyond Reccess, discloses.

The road has been for some time hugging the shores of Derryclare Lough and Lough Atry.

Now, suddenly leaving them and swinging and rising to the left, one bestrides a hill and finds oneself looking at a most charming picture. At one's feet lies the so-called "Canal"—a narrow arm of water issuing under Derryclare Bridge—winding beneath us through the Luncheon pool to where it joins Upper Ballinahinch Lough in Chapel Bay; thence the lake stretches away before us—past the Salmon Rock, the Islands, Red Martin's Bay and "Mr. James' Bay"—till it closes in on the horizon at Snabeg—the narrow channel joining Upper to Lower Ballinahinch. On our right the rocky sides of Ben Derryclare and Ben Lettery rise sheer from the lake shore for some 2,000 feet. On our extreme left the line of low undulating heather-clad hills separating us from the Atlantic is unbroken save where the conical form of Cashel Mountain raises its head above them. From where we stand the road dips suddenly, curving to the left round Chapel Bay, with a tiny R. C. chapel on its

very edge, then rises again abruptly to the crown of a hill. This hill is the highest point of the narrow neck of land separating Ballinahinch Lough and Lough Nabruca, and on its summit—facing us—Mr. Arthur V. Wilcox has built Lisnabruca House, and year by year the process of turning the bare slopes of the hill into wood and garden proceeds. The view from the house across the lake to Ben Lettery is probably unsurpassed by any other in the United Kingdom. The short avenue from the road to the house is cut through solid rock; down the rock face hang Rambler Roses and the local wild rose of wonderful shrimp pink; from every crack and cranny of the rock sprout hybrid Dianthus, mostly self-sown hybrids of *D. cæsius* and *D. superbus*, and everywhere one sees the bright purple of *Daboecia polifera*—the Connemara Heath.

Leaving the avenue we descend some steps—on our right a slope covered with *Rhododendron* species and hybrids, *Loniceras* and flowering shrubs—to the first of the garden terraces; here in summer were masses of *Liliums*—*auratum* *platyphyllum*, *Krameria* and *rubellum*, *Gladioli* and *Carnations* backed by



VIEW IN THE GARDENS AT LISNABRUCKA HOUSE.

7 foot hedges of *Escallonia*. Passing through this hedge and skirting another *Rhododendron*-covered slope we reach the first rock-work—a large raised rock garden sloping up to the wall.

The climate of Lisnabruca seems very acceptable to the majority of alpines, and, as the owner of the garden takes a keen and knowledgable interest in such plants, it is not surprising to find the garden space devoted to their culture to be increasing yearly.

Here, on the first rock-work, are heaps of good things. All the *Aizoon* *Saxifrages* appeared to be flourishing and of the more difficult *Kabschias*, *S. dalmatica* and *S. Boryi*, were pictures of health, and everywhere perking up amongst them one finds *Wahlenbergia hederacea* and *Veronica canescens* smothered in blossom. Here, too, are most of the dwarf *Campanulas*—*C. pulla*, *C. G. F. Wilson*, *C. Garganica* and a curious constricted form of *C. rotundifolia* from Dogs' Bay, Roundstone. Higher up one notices

Geranium Traversi, *Erodium chrysanthum*, *Lithospermum graminifolium*, *Androsace Hedracantha*, *Drabas* and some particularly fine coloured forms of *Lychnis lagaesæ*, but the glory of this rock-work is a wonderful plant of *Viola Valderia* which, a miff in so many places, here ramps around and never ceases to flower.

The path from this portion of the garden drops down to the lake, hugs a cliff base (covered with *Osmunda* fern and *Sax. umbrosa*), then leads up through the Rose garden, with its hedges of Sweet Pea, through the Dahlia garden, round the Lily ponds, where one notices Water Lilies—pink and red—both in the ponds and in the bay, then up again over the heather-topped lake edge and round the point, whence a sharp descent brings us to the rock gorge, which is gradually being re-

claimed and utilised as a rock garden. This gorge is, where it commences at the top of the hill, about ten yards wide; it widens as it descends in natural rock terraces till, at the lake shore, it is about thirty-five yards across; down its centre flows a small stream in cascades: its spring dammed up and diverted into a large reservoir

high up out of sight, ensuring a constant supply of water. In the bed of the stream grow moisture-loving Primulas, such as *P. deorum* and *P. rosea*, and endless Iris. The rock terraces are filled with choice plants—*Campanulas galore* (*C. raddeana* especially fine). Other plants doing well are *Platycodon Mariesii*, *Nierembergia rivularis*, *Kirengeshoma palmata*, *Camp. Waldsteiniana*, *Wahlenbergia Saxicola*, *Dodecatheon meadia*; higher up were dwarf *Rhododendrons*, such as *R. racemosum*, *R. Kamschaticum*, *Ledums*, *Kalmias*, and a fine *Lithospermum prostratum*, and everywhere *Erythraea diffusa*—the pink *Gentian* is a most uncertain plant with me, but at Lisnabrucka it has to be weeded out by the basketful. It and *Camp. barbata* and *rotundifolia* are waging eternal war for the possession of the garden, their seedlings are everywhere. As one descends towards the lake shore one notes bright forms of *Dianthus deltoides* and *D. Grisebachii*. The eastern side is very exposed and suffers from

drip, nevertheless hybrid *Aquilegias* and *Sedums* are naturalising themselves freely. Then lower down one passes over a little stream, which winds round a boggy patch in which *Iris Kœmpferi*, *Gentians* and bog *Primulas luxuriate*; lastly, just above the lake level, one sees a rubbly bank, and here *Saxifrages* find their happiest home. Small bits put in last summer are already jostling each other, and in another year this bank should be a magnificent sight.

Mr. Willcox has been most fortunate in securing such a site for his rock garden, and it has been laid out with considerable skill and judgment, the natural features of the gorge have been retained and worked into the general scheme, and so natural does it appear from the lake that the presence of a garden seat alone

prevents one from imagining that these welcome patches of colour on the brown hillside have been planted there by nature.

Although the surroundings of this rock garden and the view from it render it in some respects unique, yet the form of its natural site is not uncommon in other hilly parts of Ireland. To any one possessing such a site and

wishing to utilise it as a garden the Lisnabrucka rock garden should prove a good object lesson.

Saxifrage cotyledon icelandica.

IN IRISH GARDENING for February, 1916, I mentioned that I had grown this *Saxifrage* for four or five years, but without flowering it. Last spring I put a vigorous rosette into a four-inch pot, and at the beginning of May it showed signs of blooming. Eventually it threw up a flower-spike about two feet long, which remained in bloom for many weeks. The individual flower is a solid white, and better than *S. longifolia*. The spike is more graceful than the somewhat stodgy form of *longifolia*, but more compact than the ordinary *S. cotyledon pyramidalis*.

J. HARPER SCAIFE.

Dalkey.



VIEW IN THE GARDENS AT LISNABRUCKA HOUSE.

Antirrhinums or Snapdragons.

ANTIRRHINUMS, those plants which used to be known in gardens as "Snapdragons," have within recent years been developed and improved to an enormous extent. There is no class of plant which has taken such a firm hold in our gardens as these. They have certainly come to stay, and they have won this position from the reliance that can be placed in them. They can now be had in fixed and distinct colours, all shades from white, orange, copper, scarlet, pink and dark crimson.

For use in bedding out, as cut flowers, for large bold masses, in ribbon borders, or even pot work, no plants are better suited or more showy. They remain in flower as long, if not longer, than any other bedded out stuff, and if, when first the bloom shows signs of fading, the plants are cut over, removing all old flower shoots, a second growth will be made and a further period of flower ensured.

Two distinct varieties can be obtained in which appear the same range of colours.

"Tall" where the plants reach as high as 3 feet, with long spikes of bloom.

"Intermediate," being from 12 inches to 18 inches, and the most useful for all bedding and border work.

Those who have time and space to raise their own plants should purchase seed from a reliable firm, stating the colours they desire, and make one sowing in September or October in a cold frame. When the seedlings are fit to handle, they can be pricked off into boxes or pans, and left to winter in the frame. When the spring bedding is over and the beds or borders ready, these plants will be fit to go out.

Another sowing can be made in February in a warm house or on a hotbed, pricked out when fit and gradually hardened off so as to prepare them for planting about April or May.

Plants produced from this later sowing will form just as strong, sturdy and satisfactory plants as those raised from the autumn sowing, but they will be somewhat later in coming into bloom.

For those who have not the advantages of frames and hot beds, or pans and boxes, these plants can be bought, and splendid results can be obtained from them. They can be relied on to come true to name, and they cost very little. When the plants arrive early in May, they may at first appear small and poor value for the money, but in a very short space of time they will have filled out to compact bushy plants covered with bloom. They should be planted in well prepared ground, and well watered if the weather is dry after planting, and any which show signs of running up should have their tops pinched out.

R. M. P.

Hypericum patulum var. Henryi.

THIS I have noted in the Botanic Gardens at Glasnevin as a very handsome flowering shrub apparently much hardier and finer than the older *H. patulum*.

Originally discovered in China by Dr. Henry, now of the Royal College of Science, Dublin, it reached Kew in 1898, but is still too rare in private gardens. Such a beautiful, hardy flowering shrub should be more widely known, giving, as it does, a fine display of large, handsome, yellow flowers throughout summer and autumn. It is a most useful plant for the front of a shrubbery, and makes a fine bed. Although not particular as to soil and position, undoubtedly a well drained soil and an open, sunny site give the best results.

The pruning consists of cutting hard back the previous year's shoots, and should be done now to give as long a season of growth as possible. Seeds are produced freely and cuttings strike readily in a cold frame.

TUTSAN.

Sternbergia.

MR. PRESTON in last month's issue remarks that "the requirements of the genus *Sternbergia* are so easily met that one wonders why this beautiful class of plant is not more often grown." The reason is that, although its requirements may be easily met at Cambridge and other parts of southern England, they cannot be provided on the west coast of Scotland—that, at least, is my experience; for, after repeated failures extending over many years, I have had to abandon hope. It seems that the plant requires stronger sun and less winter wet than it meets with here. It may save disappointment to those similarly situated as regards climate if this reservation is added to Mr. Preston's note. Conditions which suit most plants from southern Chile admirably are not acceptable to *Sternbergia*, which I have never seen in such brilliant profusion as in the sun-baked soil near Bordeaux. It would be interesting to hear whether it flowers regularly in Ireland.

HERBERT MAXWELL.

Monreith.

A New Barberry.

BERBERIS LEVIS.

LOVERS of shrubs who want a robust growing yet ornamental evergreen will find this Chinese species of much value. It will apparently grow to a height of six feet or more, judging by comparatively young plants now growing here, and which are four to five feet high now. The leaves are dark green above, rather paler below, and with spiny margins. The flowers are produced in spring, and are borne in clusters, pale yellow in colour.

DUBLIN.

The Winter Sweet.

CHLIMONANTHUS FRAGRANS.

THIS delightful winter flowering shrub has been opening its blossoms for some weeks now, and on sunny days the perfume is very sweet, even at some distance away. Here in Dublin it requires a south wall to do really well, though elsewhere it will flower in the open, but requires more sun to ripen the wood than we get here usually. The ordinary form, or what is reckoned as the type, has the sweetest scented flowers and is quite good enough for most purposes. There is, however, a variety—*grandiflora*—with larger flowers, which are very handsome when cut and placed in a room. There is also recorded a variety—*luteus*—with the petals all yellow instead of the inner ones being reddish-purple—but I have not seen it.

The flowers of the ordinary form if cut in the bud state and placed in a room where there is a fire at least part of the day, open freely and seem even to attain a larger size than if they opened on the plant.

It often happens that when gathering twigs for the house most of the flowers are found clustered at the base, just where the twig is detached. At first it seems impossible to place them in water without immersing the flowers, but they open just as well if the opposite end of the shoot is placed in the water, first cutting off a small portion from the apex.

The Maritime Pine.

PINUS PINASTER *Syn.* *P. MARITIMA.*

ALSO known as The Cluster Pine from the cones being borne in whorls frequently remaining on the tree for years, this species is very striking when it has reached 40 to 50 feet in height. Although not remarkably valuable as a timber tree it is nevertheless imported in considerable quantity for pit props, and, as it grows rapidly when young, it is worthy the attention of planters who are looking for quick returns. It is, however, very valuable for seaside planting, and for this purpose would probably prove useful in the west of Ireland, where trees are very much wanted for shelter as well as to improve the landscape.

It has been very largely planted in France on poor sandy soil, and yields annually a most substantial revenue.

It would be interesting to know whether *P. Pinaster* has been planted in any quantity anywhere on the Irish coasts; perhaps some member of the Irish Forestry Society could tell us.

B.

Illicium religiosum.

THIS is an evergreen shrub belonging to the same natural order as the Magnolias, but not quite so hardy as the majority of these handsome shrubs. It grows fairly well, however, in some of the milder parts of Ireland, and is an interesting addition to the exotic vegetation of this country. It is an evergreen bearing somewhat narrowly oval leaves borne on stout stalks. The flowers are not conspicuous, being of a greenish-yellow colour and composed of a large number of petals. The fruits are interesting from their shape and the fact that they are probably not often seen outside. As will be seen from our illustration, they are somewhat star-shaped, the fruit illustrated being composed of seven carpels arranged round a common axis. Only a few of the carpels contained a single seed. Our specimen came from Mr. Walpole's collection at Mount Usher, Co. Wicklow.

A Crimson Heather.

CALLUNA VULGARIS ALPORTII.

THIS is one of the finest of the numerous varieties of the common Ling. In the absence of lime there are no more beautiful and interesting hardy dwarf shrubs than the hardy heaths, and among them the subject of this note is certainly pre-eminent. Of robust upright habit, the stems thickly clothed with small dark green leaves and producing in autumn handsome spikes of dark crimson flowers, a group of plants makes a striking picture.

B.

Clematis Fargesii.

NATIVE OF W. SZECHUAN AND W. KANSU.

THIS, as our illustration shows, is a remarkably pretty species, and will be sought after by gardening folk when planting is again freely taken up in the happier time which all hope is soon to arrive.

The flowers are large and white, produced singly or two or three together in the axils of the leaves of young branches. They appear in early summer and make a very lovely display. The plant is a vigorous grower, quickly covering a considerable space, and will be useful for covering arbours, trellis work and rustic work of any kind; allowed to ramble at will over some low-growing tree which has passed its best, a pretty picture would result.

A number of the new Chinese species of *Clematis* are not of great decorative merit, but there are several others of considerable beauty which I hope to refer to as opportunity affords of illustrating them.

B.

The Allotments and how to Cultivate them.

Now that the allotment scheme is in full swing it may help those who have taken, or are about to take, plots to read and study these few hints. On taking over an allotment, with the object of transforming it into a flourishing and food-producing space, the inexperienced are apt to feel bewildered, having no clear idea of what should be done or of how to set about putting the ground in order; but one need not hesitate. In the first place one has only to consider whether he will trench the ground or merely dig it. Let us suppose that the prospective allotment is in grass. In event of the ground not being ploughed, as has been suggested, my advice is to cultivate the ground by "bastard trenching"—that is, transposing the first spit and in forking up the next, but not removing it. To begin operations a trench should be taken out across the whole length of the plot, say, two feet wide; this should be wheeled to the extreme end to fill in the last trench. Into the first trench dig the sod from the next two feet, chopping it finely, and placing the next "spade" or spit of soil on top of this. Fork up the bottom of this trench, but leave the soil there: this will assist drainage. Some people dig in leaves, manure and many other things, but to those wishing to get their crops in early I would suggest opening drills after the trenching has been completed. The manure can be then put into the drills. Land which has been untilled for some time—more especially grazing land—will be found to contain wire-worms: this is the worst pest the allotment holder will have to contend with, but if plenty of soot and lime is well worked in, this pest may be somewhat abated. The best crops for the allotment holder to grow will require consideration. If space can possibly be spared one should grow at least half of the plot in potatoes, and the remaining ground could be cropped by beans, peas, parsnips, carrots and onions: a good sowing of leeks could also be made, so that when potatoes are lifted such ground could be planted with leeks. Brussels sprouts, cabbage and others of the Brassica family can also be grown with success. One hears on all sides now which is the best potato to grow, but one must take into consideration soil, aspect and climate. I grow Puritan, an extra early variety, and it is one of the best early potatoes I grow: I can have it by the end of May, and when about half grown it is really as dry as some varieties are when fully grown. For second early I advise allotment-holders to grow British Queen, either as a second early or a main crop. I find no easier potato to cultivate; it succeeds here in the North

when most varieties fail: some say Arran Chief is better. For a late crop for winter use there is no potato in the market can equal the Skerry, its cropping and keeping qualities are so well known as to need very little description. There are many varieties too numerous to mention, but I have enumerated three of the very best.

W. A. M.

Banbridge, Co. Down.

Herbaceous and Alpine Plants.

WITH the advent of February there is a feeling that spring is approaching, though no doubt much bad and treacherous weather lies before us.

There is more strength in the sun, however, and with every day it increases, coaxing early plants into growth and bringing additional work to an already over-crowded day.

Herbaceous borders will now require attention at the first favourable opportunity. Where bulbs are grown between the other plants it is impossible to do much or any digging before the leaves have pushed through the surface. Very soon now it will be possible to see the position of each group, and digging can proceed when ever the soil is in a suitable condition, but avoid working on it while it is wet.

A good deal of nonsense is written about giving up flower growing and substituting vegetables: this is mostly written by people who evidently know nothing whatever about vegetable growing, and need not be too seriously noticed. There is no need to sacrifice perennial flower borders for this purpose while other land exists in an uncultivated state. It is a very much wiser and more reasonable proceeding to plough up a private deer park, as we read of several gentlemen doing, and leave the flower gardens to make the best of it. In the case of those gardens which required replanting annually there is some excuse for departing from this practice for the present, but

with the perennial border it is different. Necessity will enforce a great deal of the annual lifting and replanting being omitted for this year, but happily perennial herbaceous plants will not suffer greatly on this account, providing the shoots are well thinned out when a few inches high—work that with a little instruction can be well done by men over military age or by girls and women. Lose no opportunity, then, of lightly forking over the borders, and if farmyard manure be scarce and required for vegetables, fork in any decayed refuse available, and if possible give a dressing of basic slag or superphosphate at the rate of about 2 ozs. to the square yard. Even if no manure be applied the forking over will be of service in aerating the soil and providing a loose surface in which the hoe can be easily worked until the plants are tall enough to shade the soil



Photo by]

[J. Harper Scoble

SAX. COTYLEDON var. ICELANDICA
(see p. 19)

and keep down weeds. During inclement weather prepare stakes so that no time may be lost when they are wanted, and as soon as the plants have made some growth put in the stakes, as it is imperative to get this done early. If the plants are allowed to get lanky and falling about, the work takes twice as long and never looks so well. I am afraid that many amateurs look upon such advice as so much ideal "talk" to be listened to in a condescending kind of way, but the professional gardener who has to get through an enormous amount of work with a very small staff knows the value of taking time by the forelock; he would never succeed otherwise.

ALPINES.—At the time of writing the rockery is covered with snow, and frost prevails, rendering work in this department impossible. It will not last forever though, and perhaps by the time these lines are in print will have vanished. It is necessary to have a stock of topdressing material ready for immediate use now, for with the disappearance of the snow and frost much work will be revealed, many small plants will be found raised almost out of the ground and others will be found very bare of soil. The loose ones must be safely pressed into the soil again, and a nice gritty topdressing will be appreciated by all. Any portions devoted to peat-loving plants will benefit by a topdressing of fine peat with which may be mixed a little well-decayed manure for the gross feeders.

A watchful eye must be kept for slugs, who will be on the look out for tender young growths appearing and also for the flowers of such things as Adonises, Saxifragas, &c. Assiduous collecting is really the best means of ridding the rockery of slugs, but useful deterrents are soot and lime scattered around choice plants, also tobacco powder and even sharp sand or ashes.



Photo by J. R. M. Pollock
FRUITING BRANCH OF ILLICIUM
RELIGIOSUM (see p. 21)
PLANTSMAN.

Economy in using Potatoes.

In view of the high price of potatoes and the small crops produced in many parts of the country, it is essential that all consumers should practice strict economy in their use. Apart from the question of eating fewer potatoes, very considerable economy may be effected by careful, intelligent cooking. Let us consider for a moment the construction of the potato. Investigation has shown that the potato is made up approximately as follows:—

	per cent.	
(1) Skin	2.5	} edible portion.
(2) Layer next to skin .. .	8.5	
(3) Flesh	89.0	

The edible portion contains about 75 per cent. of water, so that only about 25 per cent. is of direct value as food. Further, the richest part of the potato is that next the skin.

Trial has shown that the most common method of cooking potatoes—paring and then boiling after placing the pared tubers in cold water—is

the most wasteful method practised. This is so for three reasons:—

- (a) Not only the skin, but the surface layer and perhaps 10 per cent. of the "flesh," are removed by thick paring, partly owing to deeply-sunk eyes and surface irregularities: the total loss may, indeed, amount to as much as 20 per cent. of the whole tuber—or 1 lb. in every 5 lb.
- (b) The surface layers, which are wasted, contain a larger percentage of solids than the remainder: and
- (c) The subsequent boiling dissolves out soluble ingredients of the potato, and also breaks down the surface into the water—which is thrown away.

Experiments on the subject showed that pared potatoes put into cold water and boiled lost 15.8 per cent. of their protein or flesh-forming substances, 18.8 per cent. of their ash or mineral matter, and some 3 per cent. of their carbohydrates or starch. Plunged at once after paring into boiling water and boiled they lost 8.2 per cent. of their protein, about 18 per cent. of their ash and a small amount of their starch.

On the other hand, when boiled in their jackets, potatoes lost only 1 per cent. of their protein, a little over 3 per cent. of their ash, and practically none of their starch, whether plunged in cold or hot water at the start.

It is clear, therefore, that if pared potatoes are placed direct in boiling water the loss in boiling is very much reduced compared with the usual method—placing in cold water; steaming instead of boiling also reduces the loss; while boiling or steaming in their jackets reduces all losses to a minimum—both the "boiling losses" and the primary 20 per cent. loss due to paring are almost wholly avoided.

When potatoes are partially diseased they must of course be pared in order to remove the affected parts.

Considering the facts already outlined, the following points may be taken as maxims in economising potatoes:—

(1) In cooking for the table potatoes should be boiled or steamed in their jackets: this will reduce the loss to a minimum. To facilitate the escape of steam and prevent the cooked potatoes from becoming "stodgy" it is useful to make a cut in the skin of the tubers at each end.

(2) In baking potatoes slow cooking is desirable, so that the skin does not "bake on" to the "flesh," and so cause loss. The skin should be pricked or cut before baking to permit the escape of steam. Proper baking of potatoes involves little if any greater loss than boiling in their jackets.

(3) If because of injuries to the surface, or for any other reason, potatoes must be pared, they should be cooked by steaming, or by cooking in the smallest possible quantity of water, which should be boiling when the potatoes are put in. The water should be used as a basis for soups, for

which it is quite suitable. The loss in boiling is reduced if salt is added to the water.

(4) A better plan even than that last mentioned is to pare the potatoes as thinly as possible and use them, after slicing, for vegetable or meat pies, with or without a pastry crust. Potatoes should also be pared very thinly when used for soups.

(5) Where a bulky vegetable food is required the potato may usefully be replaced by turnips, especially swedes, which should be sliced and steamed rather than boiled. If boiled, the minimum of water should be used, and the liquid should afterwards be made into soup.

Consumers of potatoes, who are also growers, should, in addition, note the following points with a view to economy:—

(6) Potatoes should be stored when dry in a cool, dry place, where loss from "rotting" is likely to be reduced to a minimum; not where they will "heat" or "sweat." A sprinkling of powdered lime or sulphur will aid in preventing the spread of disease.

(7) Enough seed for planting should be reserved in case seed is not available in 1916; but if the 1916 crop was not the produce of seed from a northern climate, an effort should be made to secure from Scotland or the North of Ireland for 1917. (See also Leaflet No. 173, *Potato Growing*, and Leaflet No. 296, *Potato Growing in Allotments and Small Gardens*.)

(8) All small potatoes not required for seed should be used for household food as far as possible; the very small ones, as well as those which are diseased, should be used, after boiling, for pigs and poultry.—*The Journal of the Board of Agriculture*.

Wonderful Plants.

PLANTS do not think, observes a keen student of nature: yet without thinking they carry out very elaborate plans for getting food, for fertilizing themselves with the aid of bees and other insects, for guarding the seeds until the right moment, for scattering them, with the aid of the wind, water, birds and animals, and for insuring their germination.

Some plants set traps of almost inconceivable

ingenuity, depending on what would seem to the casual observer as absolute knowledge of bee psychology.

Plants fit their environment just as well as men fit theirs, and, perhaps, somewhat better.

The results that we get by taking thought they get in some other way, fully as mysterious as human thought, and possibly of as high an order in the scheme of the universe.

A flower serves its purpose, which is to live and to propagate its kind, and man, biologically, can do no more. Flowers, wild and cultivated, probably grow more complex in their organization and functions as the ages pass; no less and no more can be said of men. Plants fight with their kind

and with other forms of being for the gift of life, and so does man, although—as one is tempted to say—with less intelligence.

The thought of these things quenches arrogance and gives the lie to pessimism. What are our petty doubts and sorrows?

In us and in the humblest weed is the same inextinguishable life force, moving, whether purposeful or not, as though it had a purpose.—*B. C. Fruit and Farm Magazine*.

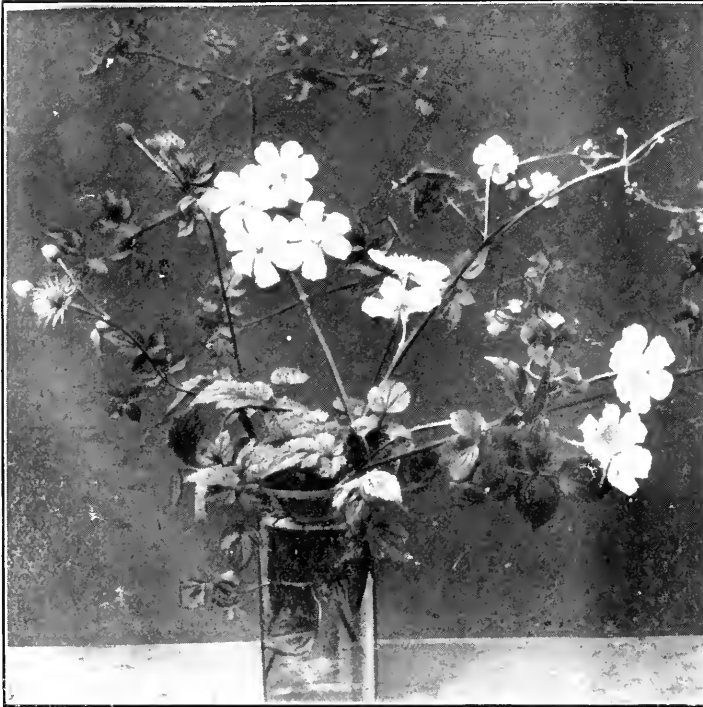


Photo by

CLEMATIS FARGESII
(see p. 21)

[R. M. Pollock.

Seed Potatoes at the National Museum.

AN interesting and instructive exhibit of seed potatoes has been on view lately in the Botany

Department of the National Museum, Kildare Street, and will, no doubt, be visited freely by intending planters during the next few weeks.

At the time of our visit, in the middle of January, selections from seven different sources were on view—viz., from Messrs. A. Dickson & Sons, Rowan, Edmondson, Drummond, Hogg & Robertson, Sutton & Sons, and the Albert Agricultural College, Glasnevin: the latter in a typical sprouting box.

Many varieties were on view, comprising early, mid-season and late sorts, correctly named, and in two instances tables showing approximate dates of planting and lifting were given.

In the same room many tables are shown giving the comparative food values of many common articles of diet.

The authorities are to be commended for the practical means they are taking to spread a knowledge of the economic use of food materials.

Obituary.

THE death of Mr. Edward Walpole at an advanced age, recently announced in the daily papers, removes a landmark in Irish horticulture, and will evoke very genuine feelings of regret in the hearts of many who had the privilege of enjoying his friendship. A still greater number will regret the loss of the last of the three brothers who created the beautiful garden at Mount Usher, and filled it by their incessant work with so many rare and beautiful plants, and who, prompted by their kindly dispositions, made it an easy matter for all interested in gardens to gain admission, to see, learn, and enjoy.

Mount Usher was started very many years ago as a small country residence to which the brothers Walpole were brought by their parents to spend holidays in the country, and they readily acquired a taste for country life, for natural history, and for gardening. On the death of their father, George, Thomas and Edward Walpole entered into possession of Mount Usher, and started to develop it. Their labours were divided. George and Edward took over the plant side, Thomas the constructive. Under the last named changes in the house were planned, walks were made, bridges constructed, and the river banks secured. George and Edward worked steadily at extending the collections, hunting through catalogues, visiting gardens, writing to friends for information and advice, but never for plants: these they purchased, or got by exchange, when this method was suggested to them by those who wished to exchange. The collection rapidly grew, and as space was limited the duplicates were removed and the less interesting and less attractive plants had also to go to make room for newcomers. None of this was hasty work. Notes were taken, lists were prepared, plans considered, only to be carried out when there was perfect agreement, and so Mount Usher was developed by the collaboration in loving harmony of the three brothers. As space became more limited the grounds were gradually extended until the present considerable dimensions were reached. The brothers Walpole

quickly realised the great possibilities of Mount Usher, especially as regards the cultivation of what are generally known as half-hardy plants, and they made many and interesting experiments in that direction, the results not only satisfying, but sometimes even astonishing the enterprising owners. Discriminating visitors and garden owners from many countries also noted, and were delighted and astonished. Favoured by its beautiful situation by the river and minor streams running through it, thus ensuring an abundant supply of soft water, by a mild and humid climate, by a fertile soil, free from lime,

Mount Usher had much to recommend it. Advantage has been taken of these natural assets, and it can be asserted with full knowledge and confidence that Mount Usher at present is the most interesting and edifying garden of its size in Ireland, if not in the British Isles.

George was the first to die, Thomas followed, not long afterwards, and now we have to record the loss of Edward. The late Mr. Edward Walpole was a man of the kindest disposition, of sound common sense, and of great enterprise. He had a retentive memory, and those with whom he was on terms of intimacy were frequently entertained with stories about his life experiences in Ireland, and about various visits to other countries, to gardens and to nurseries. His early days were passed in Waterford, and the writer remembers his telling him that one of the conditions of an apprenticeship joining then was that

salmon was only to be given for dinner on a limited number of days each week. No need for such a condition nowadays! Edward Walpole spent most of his Saturdays to Mondays at Mount Usher. As soon as he arrived there he changed his coat, armed himself with trowel and pipe, forgot all business cares and worries, and sallied forth amongst his treasures, humming softly to himself, joining the birds in their song and nature in her delights, happy and joyous. This is the picture, a satisfying one, which rises in the minds of his friends when they think of him.

All Irish gardeners will rejoice to know that Mount Usher is to be kept up. The mantle has fallen on the new owner, Mr. E. H. Walpole.

F. W. M.



THE LATE MR. EDWARD WALPOLE
In his garden at Mount Usher, Co. Wicklow

Potato Growing in Allotments and Small Gardens.

At the present time many householders will be especially anxious to curtail their domestic expenses by devoting increased attention to the cultivation of vegetables in their gardens and allotments, and all available land may in some cases be used for growing vegetables. In such circumstances few vegetables can be planted more profitably than the potato, and the following suggestions are offered for the benefit of those who cannot devote more than about an acre of land to this vegetable.

THE SOIL.—Growers on a small scale can seldom choose the soil in which to plant, but they may do much to enable such soil as they have to produce a satisfactory crop. Potatoes do best in moderately light soil with good drainage. When heavy land must be used it should be thoroughly dug over during the autumn and winter, and should be prevented from becoming water-logged by being thrown up in ridges or narrow stretches if necessary. Twitch (couch grass), docks, nettles, or similar perennial weeds should be forked out, and if there is any reason to suspect that leather jackets (grubs of the daddy long-legs), wireworms (grubs of the click beetles), or millepedes (also known as false wireworms) are present in large numbers, the land should be repeatedly turned over as far as the weather permits. If the land is sandy or open in texture it may be improved by adding "humus," that is anything in the nature of dead leaves or decaying vegetable matter. Impoverished land should be enriched with stable or farmyard manure, which may be dug in during autumn or winter, or before planting in spring.

Lime should not be applied in large quantities to land on which potatoes are to be the next crop, as it may induce scab. Nevertheless small quantities (say 7 lb. per rod) are beneficial in rich garden soils; and on heavy soils, or soils that have lain in grass for some years, 14 lb. of lime per rod may be applied. Lime corrects acidity and improves the texture of clay (*see* Leaflet No. 170).

TIME OF PLANTING.—If the soil is in reasonably good condition, potatoes may be planted as soon as mild weather arrives in spring. If, however, wet weather has made the preparation of the soil difficult, planting should be deferred for a time. It is better to plant at the end of April with the land in good condition than early in March with the land in bad order.

In a very few districts potatoes may be planted in February, but March and April are the usual months, the former for the early varieties, the latter for the main crop.

SELECTION AND PREPARATION OF "SEED."—Seed potatoes of a suitable size should be procured, or saved from the previous crop, provided it has been a satisfactory one. It is undesirable to plant the very small potatoes known as chats, or the largest tubers, except in the case of first early varieties. In the case of earlies, seed potatoes should not as a rule be cut. As potatoes lose their vitality if grown continuously in the same locality, frequent change of seed is recommended, and experience has shown that it is better to obtain seed tubers from a district farther north than that in which they are to be planted. It is customary with the best growers to procure new

seed every alternate year from Scotland; in recent trials, however, Irish potatoes have sometimes given as good results as Scotch. In the warmest and driest districts a change is desirable every year.

All potatoes intended for seed should be carefully "boxed." Boxing is done by placing the seed potatoes in layers in shallow boxes, and keeping them in a dry shed or other place where they are exposed to light and air but not to frost. They then "green," and ultimately form two or three short strong shoots which produce more vigorous plants than potatoes which have been kept in the dark till they are planted. Large growers are often unable to box the later varieties owing to want of space, but small growers are advised to box all seed potatoes, though it is more important to box the early than the late varieties.

Diseased potatoes should on no account be planted.

MANURING.—The potato is a gross feeder, and a liberal supply of soluble plant food is necessary for the production of a large crop. When it can be obtained, perhaps the best source of such food is farmyard manure, or, failing that, town stable manure. When such is available it should be used at the rate of 15 to 20 tons per acre—say 2 to 2½ cwt. per rod. (A large wheelbarrow holds about 1 cwt.) On heavy land it may be useful to apply the dung when digging the ground in autumn or winter, but on very light soils dung, moistened if necessary, may best be applied shortly before planting the tubers.

Alternatively, 1¼ cwt. of dung per rod may be applied, and at the time of planting ¾ lb. to 1 lb. of sulphate of ammonia, 2 lb. to 2¾ lb. of superphosphate and ½ lb. of sulphate of potash may be added; as the supply of the ordinary potash manures will be very limited, ashes from wood or vegetable matter may be used instead, at the rate of 2 lb. per rod.

If no dung is available good results will usually be obtained by the application at planting time of 1½ lb. to 2 lb. of sulphate of ammonia, and 4 lb. of superphosphate per rod, in addition to twice the quantity of ashes already mentioned.

METHOD OF PLANTING.—The depth and distance apart at which potatoes should be planted vary according to the soil and the climate, but generally speaking potatoes should be planted fairly shallow. Where the soil is light and friable, they may be put in at a depth of from 5 to 6 inches, and in heavy land about 4 inches. Early potatoes should be planted at the shallower depth in order that they may get the full benefit of the sun's warmth.

The standard distance at which early varieties should be planted from each other is 8 to 12 inches apart in the rows, and 20 to 24 inches between the rows. Mid-season and late varieties may be given 12 to 18 inches between the sets, and 24 to 30 inches between the rows.

GENERAL CULTIVATION DURING GROWTH.—It should be the aim of all growers to keep the land in which potatoes are growing frequently stirred during the period of growth, and all weeds should be kept down. The plants should be earthed up the first time when they are about 6 in. high, and a second time about three weeks later.

This drawing up of the soil to the plants promotes the formation of tubers, prevents the soil from getting too wet, and supports the haulm. If the soil has a tendency to get wet the ridges

should be made as steep as possible but the covering of soil should only be sufficiently deep to prevent the potatoes as they form from being exposed to the air and light. Small growers when lifting a few potatoes at a time should lift alternate plants or pairs of plants, or alternate rows, as may be convenient, in preference to working straight through the plot. By doing so the ground is stirred and the plants that are left often bear a larger crop in consequence, while an additional advantage is that cauliflowers, cabbages, broccoli, Brussels sprouts, kale, &c., may at once be planted in the vacant spaces or opposite them in the furrows between the rows. It is desirable to lift all potatoes as soon as ripe in order to avoid disease.

VARIETIES TO PLANT.—The selection of the best variety to plant is a matter of great importance, and growers must to a certain extent be guided by the experience of the district in which they live. Some varieties of potatoes which do well in one district prove disappointing in another, and nothing but actual testing will prove whether any new variety is worth planting locally.

The following is a list of reliable varieties which can be purchased from most dealers. Preference should be given in all cases to those which can be guaranteed as having been grown either in a northern climate, or for not more than one year in the south of England.

EARLIEST VARIETIES:—*Epicure, Early Puritan.*—These are round white-fleshed sorts. *Epicure* is the best cropper. *Duke of York, Midlothian Early, May Queen, Sharp's Express, Ninety-fold.*—All are kidney-shaped. The two first are very similar; they have yellow flesh and are among the earliest to ripen. The others are white-fleshed varieties. *May Queen* is very early, and is popular in the south-west. The two last named are both very good croppers.

SECOND EARLIES:—*Eclipse.*—Often classed as a first early. Good quality, and well suited for the general purposes of a small grower who does not wish to plant more than one kind. *Royal Kidney.*—Useful on heavy soils. Not liable to ordinary potato disease. *British Queen.*—A strong-growing potato of first-rate quality, but very liable to ordinary potato disease. Should not be planted in low-lying, damp situations. *Conquest.*—Suitable for land affected with wart disease, as it is resistant. *Windsor Castle.*—Much grown by allotment holders as an exhibition sort.

LATE VARIETIES:—*Sutton's Abundance.*—Good quality, well suited for garden cultivation, but rather liable to ordinary potato disease in wet seasons. *Evergood.*—A useful variety for heavy land, not subject to disease. *King Edward VII.*—Much grown in the east and south of England and one of the best late sorts. *Up-to-Date.*—A vigorous grower widely cultivated, of which there are many strains (e.g. *Dalhousie, Factor*). A change of seed from the north is specially desirable in this case. *President.*—A good late variety for allotments. *Golden Wonder.*—Requires good soil, liberal manuring, and should be sprouted before planting; does not contract wart disease.

Allotment holders and others who must grow potatoes on inferior clay soils under conditions not well suited for the crop, should select vigorous varieties, such as *Epicure, Royal Kidney, Evergood, King Edward VII* and *Up-to-date.*—*Special Leaflet 18, Board of Agriculture.*

Suburban and Allotment Gardens.

GENERAL REMARKS.—In the last issue of IRISH GARDENING I foreshadowed an extension of allotments and an extension of British regulations concerning allotments to Ireland. Since then the Local Government Board for Ireland have issued a circular urging local authorities to proceed with the development of town allotments and giving them non-compulsory powers to do so. It is to be hoped that this tardy recognition of the value of allotments will be taken full advantage of and that local authorities, backed up by land owners anxious to do their bit at a reasonable rental, will, in the course of the next few weeks, add some thousands to the few allotments which exist at present.

It is interesting to note that Belfast still leads the way in this campaign, and that without waiting for a Local Government Board circular had already decided to let portions of the parks, including football grounds, golf links and cricket pitches, for allotments. With this addition to the already existing 1,500 allotments and quantities of other ground (average rental of ground, £3 per acre), it is hoped to bring the number of allotments in Belfast to well beyond 5,000 before the season is finished.

WORK FOR THE MONTH.

SOIL OPERATIONS.—If an effort is made now to immediately proceed with all digging, trenching and manuring operations, including the surface digging in of lime, at the rate of 1 ozs. to the square yard, then when the time comes to sow or plant—very soon now—the ground will be in readiness. Complete the Sweet Pea trench if this has not already been done, and proceed with the digging over of such flower borders as have been spared from the vegetable plot extensions.

RHUBARB AND SEAKALE.—Those who have a few stools of either rhubarb or seakale should endeavour to force them into early growth. It is the early bunches that are most expensive to buy. If a few butter tubs, small barrels, large flower pots, &c., are available, invert one over each "crown" (or rhubarb or seakale plant). Then place over and around each receptacle a quantity of straw horse manure—the fresher the better; if a trench is taken out all around each plant about six inches from it, making the trench two feet wide and one foot deep, placing some manure in this also, then the forcing, as a result of the heat given out by the fermenting manure, will be still more rapid.

SEED SOWING.—A start can be made with parsnips and parsley as soon as weather and soil conditions are at all favourable. Parsnips, to be grown well, require a long season of growth, a thoroughly cultivated soil—two feet deep if possible—with manure at the bottom; on no account should fresh organic or farmyard manure be placed near the surface for this and most other taprooted crops, otherwise, on account of the moisture which such material holds and the fact that roots grow towards moisture and not away from it, the resulting roots will be badly shaped and will probably prove unprofitable. A dressing of wood ashes on the surface, about six ounces to the square yard, will help the crop considerably—practically all crops which store up in their roots or stems quantities of such food material as sugar, starch, &c., are benefited by an application of

potash in some form or another, such as seaweed, when obtainable, wood ashes or kainit, sulphate of potash, &c., in pre-war days. Such substances also as lime, nitrate of soda, and salt, which by their action help to liberate potash in soils where it already exists, are also valuable for such crops: of the two latter substances only 2 ozs. to the square yard should be applied. Before sowing the seeds, prepare drills about 18 inches apart and about an inch deep, running the rows north and south, then sow the seeds thinly, choosing a calm day for the operation, and covering over the seeds immediately after sowing. When seeds are sown thickly they become drawn and weak, are very subject to disease and insect attacks, and seldom make really healthy plants. Peas and broad beans should also be sown; for these the soil should be well drained and contain a fair proportion of lime. Where the soil is sandy, manure is best applied in trenches, placing quantities of vegetable refuse at about 12 inches deep, a layer of horse or cow manure about 4 inches deep on top of it, then working in at the surface a dressing of basic slag, wood ashes and lime in equal proportions at the rate of 8 ozs. per square yard. Tall crops, such as these, are better spaced at some distance from each other, with such crops as early turnips, parsnips, &c., in beds between the rows. Before sowing the seeds it will be better to soak them first in linseed oil and then roll them in red lead. This will usually tend to keep the birds and mice from eating them. When sowing the seeds they should be sown thinly—for peas three rows of seeds in each trench at 2 inches apart and 1½ inches deep in the soil, might be sown, and for broad beans two rows of seeds at the same depth, but 6 inches apart.

Seeds of Cauliflowers, Brussels Sprouts, Savoy Cabbages and Red Cabbages should be sown on a well-prepared seed bed containing lime in abundance. The plants from this sowing should provide large crops of green vegetables. If a frame or greenhouse is available, in which heat can be generated either by means of a hot bed or by boilers, &c., seeds might be sown in boxes—with sandy, loamy soil—of Onions, Leeks, Celery, Lettuce, Cauliflowers and Brussels Sprouts, to furnish early supplies.

PLANTING.—Continue to plant out Cabbages from the seed beds, also Potato Onions, Shallots and Onion-sets (undeveloped onions), on ground which has been well manured. For the Onion crops the ground should also receive an application of wood ashes or seaweed; the bulbs should only be just covered with the soil and they should on no account be planted deeply.

FRUIT.—Loganberries are a valuable crop in small gardens; choose a moist and well-manured spot for planting them in, and when planting them cut most of the shoots down to within three inches of the ground level. W. H. J.

The Genus *Juniperus* and its Commercial Importance.

THE genus *Juniperus* includes many species of trees and shrubs widely distributed in the northern hemisphere and occurring south of the Equator in the mountains of Eastern Tropical Africa. They are found throughout Europe, in Asia Minor, Asia from the Himalayas northwards almost to the limit of shrub life, North America,

the West Indies, Northern Africa, East Africa, the Canary Islands and the Azores. They are often of slow growth, and it is doubtful whether any species planted under forest conditions in the British Isles would prove a financial success. In many instances the wood is red or yellow in colour and fragrant. It is sometimes used for building purposes and for cabinets, but its most important use is for the casings of lead pencils, no other kind of wood having been found so suitable for this purpose as the better grades of juniper. When too small or knotty for other uses, it forms very serviceable fences. Oil, used for perfumery, &c., is obtained from the wood by distillation and may be also procured from the leaves and fruits of certain species. Medicinal properties of a diuretic character are possessed by the junipers. The following species are of economic importance:—

J. barbadensis Linn. (Barbados Cedar, Southern Red Cedar).—It is found in the West Indies and in the Southern United States, where it often grows in swamps near coastal rivers, and under the best conditions attains a height of 50 ft. with a girth of 6 ft., its average size being 30 ft. The wood is popular for pencil making.

J. bermudiana Linn. (Bermuda Cedar, Bermuda Red Cedar).—It is found in Bermuda, where it grows under a variety of conditions, both in brackish swamps and on limestone hills. Average-sized trees are 40–50 ft. high. The wood is valuable for ship building and for furniture.

J. californica Carr. (White Cedar, Sweet berried Cedar, Californian Juniper).—A bush or small tree found wild in California, Arizona, &c. The wood is used for fence posts.

J. cedrus Webb, and Berth (Canary Islands Juniper, Canary Islands Cedar, Sabina Tree).—It is native of the Canary Islands, where it ascends the mountains to a height of 7,000–9,000 ft., sometimes attaining a large size. Dr. G. V. Perez, of Teneriffe, considers it might be planted with advantage under forest conditions for its timber.

J. chinensis Linn. (Chinese Juniper).—It is quite hardy in the British Isles, and is largely grown as a decorative tree or bush. The wood is durable and useful for many purposes, but is not obtainable in quantity and is of no importance in the timber market.

J. communis Linn. (Common Juniper, Ground Cedar).—Widely distributed through Europe, Northern Asia and North America. In some Continental countries it attains a height of 30–40 ft. The wood is used for fencing, for milk pails and other domestic articles, and for walking-sticks. The oil is used for medicinal and for flavouring purposes. The fruits have been of commercial importance (for use in the distilleries) for a long period.

J. drupacea Labil. (Drupe-fruited Juniper, Syrian Juniper).—Native of Asia Minor and Syria, where it often grows 60 ft. high. Although the timber is reputed to be of good quality, the consumption is apparently quite local.

J. excelsa Bieb. (Grecian Juniper).—Widely distributed from the Balkans through South-east Europe to Asia Minor and Syria. In Asia Minor attains the maximum size: 70–100 ft. in height and 4 ft. in diameter of the trunk. The timber is reputed to be of good quality and has been recommended for railway sleepers.

J. formosana Hayata (Prickly Cypress).—A species spread over a considerable area in China

and also found in the mountains of Formosa. It was introduced in the British Isles about the middle of last century, but is rare in cultivation. The timber only appears to be used locally.

J. macrocarpa Sibth. (Large-berried Juniper).—Found as a bush or a small tree throughout Southern Europe and in some parts of North Africa. The fragrant wood appears to be used with that of *J. oxycedrus* for distillation.

J. macropada Boiss. (Himalayan Pencil Cedar).—Widely distributed from Nepal to Afghanistan, often from 40–50 ft. high with a trunk 6–7 ft. in girth, but sometimes much larger. The wood is fragrant and moderately hard: it is used for wall-plates, beams and fuel. A closely allied tree from the same region is *J. religiosa*.

J. mexicana Schiede (Rock Cedar, Juniper Cedar, Mountain Cedar, Cedar).—This species forms forests on the limestone hills of Mexico and Texas where it sometimes reaches 95 ft. high. The wood is used for general construction, fencing, sills, telegraph poles, railroad ties and fuels.

J. occidentalis Hook (Canadian Juniper, Californian Juniper, Western Red Cedar, Yellow Cedar).—Widely distributed in North West America from Canada to California. The wood is used for fencing as it lasts well in contact with the soil.

J. oxycedrus Linn. (Sharp Cedar, Brown-berried Juniper).—Common throughout the Mediterranean region from sea level up to 5,000–6,000 ft., usually as a shrub but sometimes as a small tree. In Italy, it occupies considerable areas on sand dunes. The principal use of the wood is for distillation ("oil of cade").

J. pachyphloea Torr. (Oak-barked Cedar, Thick-barked Cedar, Mountain Cedar, Chequer-barked Juniper).—Found wild in the dry regions of Texas, New Mexico, and Arizona.

J. phoenicea Linn. (Phoenician Juniper).—An important tree in the Mediterranean region: its timber is used for building purposes and for firewood. It varies in height from little more than a shrub to a tree of 40 feet.

J. procera Hochst (East African Juniper or Cedar).—Found wild on the mountains of East Africa. The wood, of light weight and nearly as soft as red cedar, is a likely substitute for that of *J. virginiana* for pencil-making.

J. recurva Buch-Ham.—A tree, native of Eastern Himalaya. The wood is quite equal to the best pencil cedar, but is only used for burning as incense in the Buddhist temples. *J. squamata* from the Western Himalayas, China and Formosa is a closely allied species with very similar wood.

J. rigida Sieb. et Zucc.—A shrub or small tree native of Japan. The wood has good lasting properties and is put to many local uses.

J. sabina Linn. (Savin).—A shrub or bush distributed through Central and Southern Europe, the Caucasus, North Persia and North America. The wood is of little value except for walking sticks and firewood; from the shoots and leaves is extracted a medicinal oil (savin oil).

J. scopulorum Sarg. (Red Cedar, Rocky Mountain Red Cedar).—A small tree, native of the Rocky Mountains. The wood is useful for fencing, posts, &c.

J. thurifera Linn. (Spanish Juniper, Incense Juniper).—A tree distributed through Spain, Portugal, Algeria and Morocco. The wood does not appear to be used other than locally, although

it is of good appearance and possesses good lasting qualities.

J. virginiana Linn. (Cedar, Pencil Cedar, Red Cedar, Virginian Cedar).—This species is very widely distributed in North America, and is the most satisfactory of the large growing junipers in the British Isles. It varies from a bush to a tree 120 ft. high with a diameter of 3 ft. A very valuable species from a commercial standpoint. Its wood is used more often than that of any other kind for the casings of lead pencils. Knotty wood, unsuitable for pencil-making, is very useful for fences, railway sleepers, &c. The shavings and dust from pencil factories is distilled for the fragrant oil, which is used in perfumery. The shavings after distillation make an excellent substitute for coconut fibre as a plunging material for horticultural purposes, as fungi do not grow upon them.

J. Wallichiana Hook f. (Black Juniper).—A variable species in the Himalaya. The wood appears to be used locally for building purposes.—W. DALLMORE, in the *International Review of the Science and Practice of Agriculture* for June, 1916, taken from the *Kew Bulletin*.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill, Shane's Castle, Antrim.

VEGETABLE GARDEN.

WHAT with heavy rains, sleety showers, frosts and thaws, the work in the kitchen garden is proceeding slowly, but surely, I hope. Take every opportunity of pushing on trenching and digging; leave nothing of that kind undone that can be done now, but keep off the land if it is very wet.

SEED SOWING.—Broad beans claim our earliest attention: towards the end of the month make a sowing on a warm border or sheltered plot—that is if you get the ground dry enough—but beans, like peas, may be sown in turves or pots, as they transplant easily when about 6 inches high, and are available when outside sowings fail.

Peas.—The first outside sowing requires a warm rich border. I always sow on the south border along with the early potatoes—7 or 8 rows of potatoes and a row of peas, and so on along the border—so that if the ground and weather is at all favourable a chance should not be lost of getting in some early Potatoes and Peas (although there is a certain amount of risk with the Potatoes owing to the very late frost we get).

Spinach.—A sowing of Spinach should be made this month, as soon as the soil is workable, provided a sheltered position is chosen; this sowing should afford a supply of leaves early in May; if sown in rows make the drill 15 to 18 inches apart. Many growers, however, prefer to sow spinach between rows of peas or broad beans, and this system is a good one, as the spinach may be gathered and the crop cleared off before the other crop has matured. The plants of autumn-sown spinach should have any decayed leaves removed, and the soil between the rows slightly stirred up, after which a dressing of soot should be applied.

Parsnips.—The ground intended for this crop having been trenched early in the winter, should now be forked over as soon as the soil is dry enough to permit the operation: then allow it to dry enough to be levelled with the rake. The drills should be drawn 18 inches apart, and the seeds sown thinly: if extra fine roots are desired holes may be made with a crowbar and filled with finely-sifted soil, sowing a few seeds where each hole has been made. Soot and wood ashes make an excellent dressing for parsnips. *Celery*.—A small sowing of some early sort should be made about the end of the month for early use. Sow in boxes or pans, place in a house or hot-bed frame in which you can keep the temperature about 60 degrees. Cover the seeds lightly, and place a sheet of glass over the box till the seedlings begin to appear: see that they do not suffer for want of water, but keep them growing steadily till fit to harden off. *Brussels Sprouts* require a long season of growth, so make a sowing in boxes for an early dish. Place the boxes in a temperature of about 59 degrees until the seedlings appear, then remove them to a cool house or cold frame and gradually harden them off for pricking into a cold frame. *Cabbage* may be treated in the same way, so that young plants may be ready to put out as early in the season as possible: the same applies to red Cabbage (if big heads are in demand and if seeds have not been sown in autumn). Look over plots of Cabbage planted in autumn, fill up blanks and keep the *Buco* cultivator or hoe going between the rows. A pinch of Nitrate of Soda to each Cabbage will send them off full steam ahead. *Parsley*.—Make a sowing in boxes, germinate in gentle heat, and when large enough to handle prick out in boxes filled with nice rich soil. *French Beans*.—Sow at intervals in pots 8 inches in diameter, 7 seeds in pot, using a compost of loam, leaf-mould and old mushroom bed: fill the pot to within 3 inches of rim, leaving room for top dressing later. They require a nice brisk heat to force them well and plenty of the syringe to keep off red spider.

JERUSALEM ARTICHOKE.—Lift tubers as soon as possible, select largest for consumption and the medium size for forming a fresh plantation. Plant the tubers in rows 18 inches apart and 3 to 4 feet between the rows: select good land for this crop in some secluded part of the garden or somewhere you want to make a screen of them.

ASPARAGUS BEDS should be cleaned and top-dressed with two inches of good rotten manure and a light sprinkling of salt.

HERB BORDER.—This is a good month to renovate and divide herbs.

SHALLOTS may be planted any time this month 9 inches apart and 12 inches between the rows: firm them well and bury to about half their depth.

FRUIT GARDEN.

Every advantage must be taken to finish off the pruning now, so push on to a finish on every good day.

Finish off the nailing and training of fruit trees on walls, and dig all fruit borders, giving them a liberal coating of rotten manure, wood ashes or burnt rubbish.

Head back fruit trees to be regrafted later on in the season, pick out your scions, label them properly and bury them half way in soil in a shady part of the garden.

LOGANBERRIES.—There should be a row of them in every garden, for it is a valuable fruit for preserves (and even dessert when thoroughly ripe), easily grown and a sure cropper every year; it will grow on a wall or trellis where no other fruit will grow. The old growths should be cut out and the young straight growths tied in. It is not necessary to treat it too liberally with manure, as it is a very rampant grower naturally.

THE SPRAYING of fruit trees may still be proceeded with, but it is better to get it done before the end of the month.

The work of digging between the bush fruits is being continued, as advised in last month's calendar.

A dusting of lime on the Gooseberries this month is a good thing, it helps to keep off birds from the buds.

Lose no time in finishing off all the planting: bush fruits and Raspberries may be left till the last. Try and have a quantity of dry soil at hand when planting, to mix with the soil for the holes: you are then better able to firm the tree or bush, and the soil does not cake and crack afterwards.

FRUIT ROOM.—Apples which are intended to keep as long as possible should be carefully looked over, and any doubtful ones used up, the sound ones covered with sheets of newspapers on the shelves. I consider Annie Elizabeth and Newtown Wonder two of the best keeping apples we have.

During wet weather coverings, such as fruit nets and tiffany, &c., should be thoroughly overhauled: they may be needed in case of late frost for Apricots &c. Nets which are torn in a few places should have the rents mended with thin tarred twine.

FLOWER GARDEN.

BEDDING PLANTS.—This year I am afraid there will be very little required in the way of half-hardy annuals: the most of the flower beds will be utilised for the growing of food stuff (that is, what is contemplated here). Of course, Geraniums, Calceolarias, Pentstemons, Violas, &c., will be planted out to keep up the stock.

Beds of Beetroot, Carrots and Parsley would not look at all ugly in the flower garden.

If bedding is to go on as usual, sow now Lobelia, Antirrhinum, Carnations, Marguerite in boxes or pans, and treat in the same way and manner as recommended for Celery this month. Continue digging and forking herbaceous borders and beds: divisions may still be made of most of our herbaceous plants for fresh plantations.

Dahlias may be laid along the back wall of fruit house or on a gentle hot-bed: cover lightly with loam and leaf soil, and on fine days spray them lightly to induce growth, which, when long enough for cuttings, should be inserted singly in thumb-pots filled with nice sandy compost. Plunge the pots into a hot-bed and shade till rooted. Old stools may also be divided, but if that is the case, it is better to delay and not start them so early. Single Dahlias and Collarett Dahlias are easily raised from seed, and flower well the first year.

THE ALPINE GARDEN should get attention this month: clean round each little plant with a hand fork and give between all a light topdressing of loam mixed with a little soot, wood ashes and lime rubbish.

The pleasure ground work is proceeding in the way of repairing and gravelling walks and avenues: if they require widening or narrowing, that should be done this month to give the turves a chance to settle before the harsh winds of March dry them up. With an edging knife put a nice sharp edge on the grass, slanted a bit, as a straight up and down edge is easily destroyed.

Climbers on walls should be pruned and tied up securely, also clip Ivy and cut it well away from the gutters if it is on a house. In wet weather overhaul all flower stakes, repaint them and tie in bundles in their different sizes. Oil and overhaul mowing machines. Examine Begonia tubers, laying them in a fruit house, but do not cover them till you ascertain whether you have the right side up or not: the growing buds will soon appear, then cover them lightly with a sandy compost.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Parnmore, Fota.

THE KITCHEN GARDEN.

WITH the advent of this month, the lengthening days and favourable weather, much activity will be evidenced in the kitchen garden, and during the month some important crops may be sown in addition to other routine work which, as I have previously mentioned, should be speeded up, to try and keep abreast of the ever-increasing and manifold duties which will need attention. During spells of inclement weather there is much work that may be done, such as the grading and sharpening of pea sticks and rods for runner beans, cleaning and whitewashing of sheds and overhauling and cleaning tools and machines, examining root stores and Potatoes, fruit and Onions, washing pots and glass structures, making and repairing boxes for seeds and cuttings, and trellis work for borders, birch broom, &c.

POTATOES.—The planting of early maturing varieties on south borders and other sheltered sites may be proceeded with this month. To follow those in frames I strongly advocate planting between the fruit trees at the foot of a south wall where a few tubers can be found room for without approaching too near to the roots of the trees. Break up the ground with a fork, incorporating a dressing of well-decayed manure or leaf mould, or any thing which will tend to enrich and lighten the soil if naturally retentive. For planting and sowing, choose a day, and take full advantage of it, when the ground is dry, and even then use, if possible, boards to walk or stand upon. A dressing of soot or lime and a liberal sprinkling of wood ashes over the ground before raking down will prove of immense benefit. If planting with a dibber this should be as blunt as possible, so that the tuber rests on the bottom of the hole. Plant in rows eighteen inches to two feet apart, and allow twelve inches between the tubers, and plant diagonally.

SPRING CABBAGE.—Examine the beds of these plants and make good any gaps or blind plants, from the seed beds, and aerate the surface soil between the plants with the hoe or cultivator. The operation of drawing soil to the base of the plants, as practised so extensively in the south of Ireland during the next month or so, is optional, I think, although it certainly protects the plants

in wind-swept localities. If the ground is prepared and the positions marked for rows of Runner Beans and main crop Peas, a few lines of Cabbage may, with advantage, be planted between them.

PARSNIPS.—The ground that was occupied by the celery crop cannot be beaten for this important vegetable, which enjoys a long season of growth and a deeply worked soil. Thoroughly rake down the bed with a wooden rake and leave the surface soil as smooth as possible, and draw drills fifteen to eighteen inches apart, and sow the seed thinly. Avoid overcrowding, as the plants make a lot of growth and are much more easily cleaned and hoed.

ONIONS.—Every effort should be made to further increase the home supplies of this vegetable. From a commercial point of view, the growing and marketing open up great possibilities, although it must not be forgotten that, to grow and perfect the crop a good deal of labour is entailed. Apart from the culture of growing exhibition bulbs there are two main ways outlined for growing the maincrop of spring sown Onions—viz., sowing in the open ground during the present or next month, and by sowing in boxes of prepared soil and raising under glass, and when hardened off planting out of doors, usually during the month of April. Both ways produce excellent results, but the latter is to be recommended where the cultivation is hindered by the attacks of the Onion Fly, as transplanted ones are rarely affected, and also on shallow worked ground larger bulbs will be obtained by transplanting. For sowing choose dry weather, breaking down the surface of the bed with the fork, tread evenly and firmly, and rake off as level and as finely as possible, and draw shallow drills a foot apart, and sow thinly, in fact I sow so thinly that no thinning is necessary, and there are two strong reasons supporting this. First, there is no disturbance of the plants and unavoidable bruising, which attracts the fly, and secondly the crop through pressing each other out produces harder and better ripened bulbs, which keep infinitely better though not individually quite so large. Cover the drills, tread again firmly, and neatly rake off the surface again with an iron rake. If the second method is adopted, sow rather thickly this month in boxes of sifted soil, and raise in a gentle heat, gradually harden off and thoroughly expose to the weather before planting out.

SHALLOTS.—Plant these any time on well enriched ground, press firmly into the ground in rows a foot apart and eight or nine inches between each bulb. Some people throw up small ridges and press the bulb into the crest, and as the plants grow the soil falls away and leaves the new bulbs exposed. It is a good practice and well worth the little extra trouble.

CELERY.—Make a small sowing for earliest supplies of a good white variety in a well drained pot filled with finely sifted soil, and raise in a gentle heat, and when the seedlings are through elevate as near the light as possible. Celery requires abundance of water throughout its growth, and a check, especially that caused by drought, is fatal to the well-being of the crop.

TOMATOES.—Pot off seedlings as becomes necessary, doing so in the house in which they are growing to avoid a check. Pot lightly in a gritty compost and keep the seedlings well down in the

pots, and grow as sturdily as possible. Make another sowing the end of the month or early in next, which will also provide good strong plants for planting outside.

SPINACH.—The first favourable opportunity a small sowing may be made, on a south border, of the Victoria type. As the plants usually soon run to seed frequent sowings at intervals should be made to keep up a succession.

TURNIPS.—Early crops are often greatly influenced by the weather. Make several small sowings of early varieties, such as the white and red Milan and Early Forcing.

CARROTS.—Sow these on a warm border, raking the surface down to a fine tilth after a dressing of soot and wood ashes. Choose one of the stump rooted variety.

FRENCH BEANS.—Sow successional batches in pots and grow on in a forcing house or pit. Leave room for topdressing, which will help to support the plants if of no other use. Keep the plants in a light position and syringe freely. Plants that have set their blooms may be assisted with diluted manure water twice weekly.

JERUSALEM ARTICHOKEs.—Although these will grow practically anywhere they, nevertheless, well repay good cultivation, and the ground should be well broken up and liberally treated with manure, as the plant is a gross feeder. The tubers keep best in the soil, but planting of the smaller ones for next season's crop may be carried out at any time, and if only a limited supply is needed a row may be planted across the kitchen garden and the growths protected from the wind by driving in a few stakes at intervals and tying on cross pieces of bean rods.

PEAS.—Make successional sowings on a sheltered site of first early varieties, taking every precaution against slugs, mice, &c. For slugs, nothing is more effective, I think, than finely sifted coal ashes.

BROAD BEANS.—For sowing out of doors Beck's Dwarf Green, though small-podded, is very early maturing.

Sow towards the end of the month Brussels Sprouts, Michaelmas Broccoli and Cauliflower in a shallow frame, and prick out when large enough into skeleton frames: also make small sowings from now onwards of Lettuce, and transplant when large enough.

THE FLOWER GARDEN.

Autumn sown Sweet Peas that have been wintered under cold frame treatment may be planted out in their permanent quarters as soon as the site is prepared for them. Avoid overcrowding of the plants by planting each one singly and spreading out the roots after shaking clear of all soil.

Attend to the pruning of Roses and other shrubs growing on walls, removing all dead, weak and other useless wood, laying in sufficient main shoots to cover the allotted space and avoiding overcrowding. Newly planted Roses of the

Rambler type should be pruned almost to the ground level. This to some may seem a great sacrifice, but it causes strong growths to come away the coming season and a good foundation to the plant is laid at once. Apply mulchings of manure to these and other shrubs, which may be lightly forked in or covered with soil if unsightly or disturbed by birds. Apply a good dressing of rotted manure and leaves to permanent beds of Lily of the Valley and other permanent subjects, such as Verbena venosa. Sow seeds in a gentle heat of Antirrhinum, fibrous Begonias, &c., also Sweet Peas, which should be grown as coolly as possible. Clear all old growths away from herbaceous borders: attend to any planting or alterations, afterwards forking over the borders and applying a good dressing of manure. Any plants liable to injury by slugs when starting into growth, such as Delphiniums, should have the crowns protected with cinder ashes.

HARDY FRUIT GARDEN.

At the time of writing (January 17th) we are experiencing another spell of sharp weather, and work in this department is more or less at a standstill. However, it affords an excellent opportunity for the cutting down and grubbing out of any worthless or overcrowded tree. There is much good work that may be done towards the improvement of orchard trees in general during the present month, and to deal with an orchard that has become overcrowded needs a good deal of forethought, and provides a good many problems. Each tree should, if possible, stand perfectly clear of its neighbours, and, after careful consideration, those of minor importance should be marked and taken right out. The remainder should then be pruned, removing all dead wood and branches that are badly placed, opening up the centre of the tree as much as possible. Avoid also and remove branches that cross each other and cause abrasion of the bark, which often gives rise to canker and American blight. The operator must be guided mainly by the character of the tree, and for preference the work should be carried out piecemeal over two or three seasons. Use a sharp saw, and for the smaller wood a pruning saw will be found much the handiest, and is an instrument I venture to think is not always used freely enough. Nothing is gained by overcrowding, and the treatment may seem somewhat drastic, but will result in a few seasons in crops of larger and better quality fruit. The stems and main branches of apples particularly may then be scraped clear of all moss and rough scaly bark, and small scrapers may be made by fastening small pieces of sheet-iron into short handles. All cuts should be dressed over with tar. Winter spraying should be carried out as soon as the weather admits, choosing a calm mild day, and with any of the caustic washes, not later than the end of February, as it is imperative that the buds be thoroughly dormant. Whatever wash is used, mix it carefully according to the makers' directions and apply it evenly over the trees in a fine spray. Gooseberries are now being attacked by bullfinches, and for that reason I prefer to leave the pruning of these bushes to as late a date as possible.

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Contents

	PAGE		PAGE
Manure for Allotments	33	Saxifraga cotyledon var. Icelandica	37
Flower Gardening at Kew	34	Suburban and Allotment Gardens	38
The Carpathian Spring Snowflake (Illus.)	35	Digging (Illustrated)	39
Notes—		The Herb Industry	40
<i>Veratrum Wilsoni</i> (Illustrated)	36	Correspondence	41
<i>Solanum jasminoides</i>	36	The Forest Trees of Canada	42
<i>Ligusticum aromaticum</i> (Illustrated)	36	Some Easily Grown Salad Plants	44
<i>Buddleia asiatica</i>	36	The Month's Work—	
<i>Corylopsis Willmottiae</i>	37	Midland and Northern Counties	45
<i>Cotoneaster frigida</i>	37	Southern and Western Counties	46
The Wild <i>Primula sinensis</i>	37	Goatsrue	48



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EDITOR—J. W. BESANT

Manure for Allotments.

FROM different sources we hear that the provision of manure is proving one of the chief obstacles in the cultivation of allotments. Farmyard manure, which is by far the most important, is barely available in sufficient quantity for the larger agricultural operations, so that the position of the average plot-holder, whether near a town or in the country, is a serious one. It would be easy to publish tables showing the value of farmyard manure compared with artificials, and also the results obtained from a combination of both in various quantities. Experiments are useful and interesting to farmers and gardeners, though not always convincing, but what the inexperienced man wants is not a series of tables, but plain facts to be going on with. Farmyard manure is, generally, what is known as a complete manure, supplying in a greater or less degree, according to its composition, all the essential elements of plant food. It also has what might be called a mechanical action on the soil, rendering a light, dry soil more retentive of moisture and a heavy soil more open and friable, and consequently more congenial to plant growth.

Where a number of plot-holders are situated close together, as is generally the case, it may be possible to combine and obtain sufficient farmyard manure either from a dairyman, not

requiring the manure for tillage or from some of the numerous contractors in towns; in the latter case the manurial value is not always of the highest, the bedding too often consisting of peat moss litter. The best manure is that obtained

from the stable, the byre and the pig sty, where the animals have been bedded with straw.

A great deal of the land recently acquired for allotments has been grass land for many years, and this fact, though presenting initial difficulties in cultivation, will ultimately prove of the greatest value. The sod as it decays will provide a manure of the highest value, and with the addition of a suitable dressing of artificials will produce good crops.

There are other factors, however, which have an enormous effect on production—namely, sunlight, air, and what is familiarly called "elbow grease." While by no means scorning the value of manures, we think that far too much overcrowding is practised in cropping, particularly with potatoes. We are quite alive to the importance of intensive cultivation, intercropping and so on designed to obtain the maximum amount of produce from the soil, but

these practices are only applicable to crops requiring a comparatively short season of growth, or where a rapid growing crop can be inter-planted with a slow growing one, the former to be removed before the latter has reached maturity.

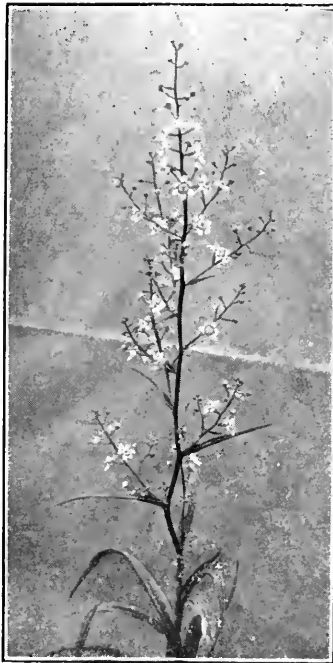


Photo by] [R. M. Pollock.
VERATRUM WILSONI

From reports and inquiries which have reached us it is evident that potatoes will figure largely in most allotments, and the question most generally asked is—"Can we grow potatoes without manure?" The answer is that, generally speaking, the crop will be poor, and it will pay to purchase artificials, assuming farmyard manure cannot be got. Of course, it is impossible to give a definite answer for all soils; some may be rich enough to yield a good crop, and we would urge all who are in doubt to consult a local head gardener or the County Instructor in Horticulture.

Regarding potatoes, there is too much tendency to believe that the more "seed" that is planted the larger will be the crop. No greater fallacy could be entertained; close planting means that each individual gets less sunlight and air, and greater difficulty in regular cultivation. Experiments by practical men have shown that where the soil has been deeply tilled and wide planting has been adopted, and the surface soil subsequently kept well worked, better crops have been obtained than where manure was applied in abundance on shallow tilled soil.

In planting potatoes, then, we are convinced that it will pay to have the lines 2 feet 6 inches apart and the "setts" 15 inches apart, giving abundance of light and air and room for moulding up and hoeing between the rows.

Many people will say, of course, that it is a waste of ground to give so much space to quick maturing, short-topped, early varieties, but, as we are assuming either no manure will be used or artificials only, we are certain the increased space will in a large measure compensate for this. Another important point, too, is to have the rows running north and south, so that they receive the maximum amount of sunlight. Abundant exposure to air and light means the production of a heavy crop from each potato planted, and all or nearly all of the young potatoes will be of good size and fit for the table. Overcrowding by close planting means a large percentage of small potatoes unfit for table use.

The Department of Agriculture for Ireland has lately issued a memorandum dealing with the supply of artificial manures. Much information is given in brief, including recommendations as to the kind and quantity of manure required *per acre* for various crops with and without dung. For potatoes *without dung* it is recommended to apply 1½ cwt. sulphate of ammonia and 6 cwt. superphosphate, or 2 to 1 mixture. The 2 to 1 mixture is simply two parts of superphosphate and one part of Tunisian phosphate.

These manures may be scattered along the drills at planting time, and from the above

quantities it is easy to calculate the quantity required for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ or $\frac{1}{16}$ of an acre. Allotment holders and cottagers would do well to combine and purchase in as large a quantity as possible, particularly where carriage has to be considered.

Flower Gardening at Kew.

PLEASE allow me to clear up a few points in the article on this in your January issue.

WATER LILIES AS TO DEPTH OF WATER.—The suggestion is made that Marliac's Water Lilies might adorn the pond, which, "if we recollect aright, is far too deep for anything of the kind." My Water Lilies sometimes grow in water 10 feet deep. One sowed itself in water 12 feet deep, and came up strongly every year for many years. In the same pond they grow on the margins very well in a foot of water, which shows one of their fine qualities. At Kew they have never been well shown, and the public has never had a chance of seeing how it would prefer a real water garden to the ducks.

TENDER PLANTS IN THE FLOWER GARDEN.—It is an error to state that I propose to "do away with all tender plants in the flower garden." Half-hardy and some tender plants are essential. Heliotrope, Canna, Blue Salvias, Verbena, Fuchsia, and the more beautiful annual flowers, also the charming blue Bindweed, killed in some years. The tender plants are an essential part of every flower garden worthy of the name, but, as a rule, a third part of the flower garden is enough to devote to them, and that varying a little as to locality, as in seashore districts, plants are hardy that soon perish inland. In the true flower garden there should be no hard exclusion of any class of plants that thrive in the open air and bear the supreme test of beauty.

BRICKS AND THE GARDENER.—The Gardener's building is about on a level with the Builder's gardening. Better for each to do his own work well, and in that way only can good work be done. Building, like other arts, has to be learned, and that means a good deal of study. I have had some experience of covering pergolas, and, while they are made in all sorts of ways, the one to last, carry heavy loads of climbers and face the gales, should be built by an architect, both for its effect and endurance. The right planting is clearly the business of the gardener, and a serious job it is to let the structure show the beauty of the many climbers of the northern world. One I had to do with, several hundred feet long and covered with all the handsome

climbing plants, was blown down one wild February day—every pillar. It was built without any due thought as to the pillars being properly braced and other mistakes, which would be impossible in the hands of a good architect. The essential thing as to pergolas is that they should meet a want as dividing lines, shelter, shade, and that they should be of lasting materials and have stout legs.

STONE PATHS are a great aid on heavy land where sippy paths occur in winter, as they do in much of the wealden land in the home counties.

Where we step out of living rooms direct into a flower garden it is pleasant to have, in all weathers, dry paths. Thousands of tons of worn out York stone have been used in this way; at one time their only value was as a bottom to roads. Where work goes on all winter and spring the stone path is far before any other, as the movement of soil, sand or manure makes no impression. The practice is only meant for the choice flower garden, and should not be used where horse work of any kind may be in use. I enjoy beds in turf as well as any, but they cannot be in every garden, and the labour in my own garden in winter and spring is much reduced by the use of stone paths, edgings of the same material doing away wholly with box and its various drawbacks.

A MIXED BORDER WANT.—There was a reference to this to the effect that there is no need of such a border considering the quantities of hardy herbaceous plants in the garden. A really beautiful mixed border is a rare thing to see. Only once have I seen it at St. Anne's in Ireland, once in the late Frank Miles' garden at Bingham, often at Miss Jekyll's garden in Surrey. It is a mistake to suppose it is merely massing a number of coarse perennials, that flower at the same time, in a border. It should represent every class of plants of beauty in the open air, climbers included, and have a good background of open oak trellis or an old wall. It is a far rarer thing to find than a good rock garden, yet it may be made in almost any soil and adorn any sort of garden. I have never seen a good one

in any botanic garden at home or abroad, partly, no doubt, because, it may be, it is not the business of botanic gardens as at present organised, and yet no part of a garden could have a better effect on the visitor.

W. R.

[W. R. would confer a great favour on gardeners generally if he would state which varieties of Water Lilies he finds succeeding in 10–12 feet of water. Do varieties like chromatella, atropurpurea, James Brydon, W. Falconer, Laydekeri rosea, Ellisiana, and many others flourish in such a depth? Our experience is that water of that depth is too cold, but in the south of England it may be different.—Ed.]

N. chromatella spreads from rather shallow into deep water; nearly all the kinds thrive in 3 or 4 feet of water; the plant that sowed itself in deep water 12 feet is very like N. marliacea alba, which with me is too vigorous in various depths of water.—W. R.

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The Carpathian Spring Snowflake.

LEUCOJUM VERNUM CARPATICUM.

THIS is one of the loveliest of spring flowering bulbs, and is so accommodating that it rarely fails to give a fine display of its beautiful snowdrop-like blossoms. The flowers appear slightly in advance of the leaves, and begin to

open when the stems are a couple of inches or so above the ground. The stems rapidly lengthen, however, and are ultimately 6–8 inches high when the flowers are full out; by that time the leaves have also made some progress. A cool, moist soil suits admirably, and it will adorn the herbaceous border as well as the rock garden. There is a fine form known as *L. carpaticum Vagneri* also flowering now, being rather more robust than *carpaticum*, with taller flower stems. It is worth while planting both where they will have some protection from rough winds and a carpet of some creeping plant to prevent the flowers from being soiled by heavy rains.

B.



Photo by]

[R. M. Pollock.

LIGUSTICUM AROMATICUM

Notes.

Veratrum Wilsoni.

HITHERTO the species of *Veratrum*, or False Hellebore, commonly found in our gardens have been natives of Europe or North America. The best known perhaps is *V. nigrum*, a strikingly handsome plant when well grown, producing handsome, broad, strongly-ribbed leaves, surmounted by tall branching spikes of dark chocolate-brown flowers. In *V. Wilsoni*, however, we have a new comer from China, distinct in habit from the older species, and a welcome addition to our herbaceous plants, introduced by Mr. E. H. Wilson for James Veitch & Sons. I first saw this species in Mr. Allgrove's nursery at Middle Green, Langley, and was attracted by its handsome appearance. The leaves are much narrower than those of the older species and tapered to a fine point. The inflorescence, too, as seen in our illustration, is less dense; the flowers are white with a greenish zone at the base of the petals, and in a strong plant they are quite attractive. The plant figured herewith was growing in a nursery bed in the Botanic Gardens, Glasnevin, and could not be shown in its entirety, but was about 4 feet high. When established it will evidently be higher and bear a larger inflorescence, and will be a distinct gain to the hardy plant border.

Solanum jasminoides.

WITH reference to the query in the December number regarding the colour of this delightful climber, a correspondent writes:—"It is nothing new, you will find the question raised in the second volume of *The Garden*; curiously it was by an Irishman or Scot, McDonald, of Phoenix Park. . . . You might very well say there is enough blue in the flower to make it look white, as much in fact as there is in a well starched collar. Indoors it is pure white, outside not quite so decided. You have evidently not consulted the latest work on Climbers by William Watson. In this it is described as having sprays of white flowers."

We have looked into the correspondence on the subject, and find there has always been a certain want of unanimity, some even suggesting that there may be two varieties, while others hold that the colour is influenced by soil and position. In any case all the figures of the flowers in books which we have been able to examine show the

colour as blue or purplish blue, which is certainly not correct.

We have also carefully examined living flowers gathered from a plant growing in full sun on a wall outside, and could never see any trace of blue, except the faintest tinge on the calyx. We have not, however, compared side by side flowers grown indoors with others grown in the open: perhaps then it might be possible to discern some blue in the outside flowers.

Perhaps other correspondents will give their opinions.

Ligusticum aromaticum.

A NEW ZEALAND LOVAGE.

THE genus *Ligusticum* is widely spread, being found in Europe, Asia, America and New Zealand. The best known species is probably *L. scoticum*, sometimes called Scotch Lovage, which is found wild in Britain. As a rule they are rather coarse herbs, but in New Zealand some at least are alpine. The species under notice is described in Cheeseman's *Flora of New Zealand* as being from "4-12 in. high, but in alpine situations much dwarfed, sometimes barely 2 in. high."

Our illustration shows a plant which flowered last summer in the bog garden in the Royal Botanic Gardens, Glasnevin, where it reached about a foot in height at flowering time. The flowers, borne in umbels, are rather a dull white in colour, but the dark green, fern-like foliage is attractive. The leaves are mostly bipinnate, though described as varying in this respect.

The species is widely distributed in New Zealand, being found from East Cape to Foveaux Strait. B.

Buddleia asiatica.

WITH further experience gained in the cultivation of this winter-flowering shrub, the more is it proving of value as a cool greenhouse pot plant or climber. If not already tried as an outdoor shrub it is worth experimenting with against a south or west wall in the warmer parts of Ireland.

Cuttings inserted from March onwards in a close propagating frame provide a ready and rapid method of increase. If the points of the young growths are removed twice or thrice during the summer useful bushy plants in 5-inch pots for the side stages will be available the first winter. Pruned back in spring after flowering, little or much, as required, the shrubs eventually become large specimens. One of their best uses

is to clothe the bare pillars in large conservatories, perhaps 20 or 30 feet high. Individually the white flowers are not large, but they are very freely produced in long slender racemes, which, with the greyish-green lanceolate leaves, give *Buddleia asiatica* an attractive and graceful appearance. Added to this, the blooms are deliciously fragrant.

The first plants introduced are recorded from India about 1874, but for the present stock, which may be hardier, we are indebted to Mr. E. H. Wilson, who sent home seeds from China. A. O.

Corylopsis Willmottiae.

FROM the five or six species of *Corylopsis* introduced from China by Mr. E. H. Wilson. *C. Willmottiae* is readily distinguished in winter by the swollen buds. It is apparently fairly common (Western Szechuan) if we may be guided by the varied seed numbers of this species collected by Mr. Wilson. These include 1316 w., 4224 w., and 4406 w.

C. Willmottiae is a bushy, deciduous shrub. The dainty greenish yellow flowers open in spring in advance of the leaves. It is thus necessary, with the idea of providing some shelter from late spring frosts, to plant this and other species of the interesting *Corylopsis* family on a south-west or west border. The plants thrive in a well-drained light loam in which leaf-mould and peat are freely incorporated. Layering and half-ripe cuttings inserted in summer in a heated propagating frame provide ready means of increase. A. O.

Cotoneaster frigida.

IN some respects this is the most useful and distinct species of the genus. To begin with, it is the most vigorous in growth of the *Cotoneaster* family, forming an attractive specimen lawn shrub 18 or 20 feet high and as much in diameter. Trained to a single stem in the earlier years of its growth, *C. frigida* becomes a shapely tree. In the Victoria Park at Bath there is a specimen tree with a 6 foot clear trunk and at least 1 foot in diameter.

In early summer the corymbs of white flowers are conspicuous, followed in autumn by quantities of rich red berries.

It may not be so in all localities, but it is very conspicuous at Kew that the fruits of this species are not sought after by the birds until food becomes scarce. This year they remained attractive on the bushes until the lengthy spell of frost at the end of January.

C. frigida is a native of the Himalayas,

evidently growing at a considerable elevation, for it is quite hardy in this country. A deciduous species, the plant thrives in most soils, and is noteworthy as a good shrub for town gardens. A. O.

The Wild *Primula sinensis*.

THOUGH first introduced from China in 1820, and subsequently figured in the *Botanical Magazine*, tab. 2564, the wild type is seldom seen in our greenhouses. This is to be regretted, for, though not so showy as the extensively cultivated single and double varieties, it is an interesting and desirable winter-flowering plant. In the greenhouse at Kew one of the side stages is filled with a considerable batch of plants, the progeny of seeds collected by Mr. E. H. Wilson during one of his journeys in China. Though not so prolific as the popular garden sorts in the production of seeds, sufficient can be obtained to propagate the plants by this means, which is more satisfactory than increase by division. Essential cultural conditions are—cool greenhouse treatment, a well-drained soil, and careful watering. For young plants flowering for the first time 5-inch pots are large enough. The light green foliage, which is not so robust as in the garden varieties, and trusses of delicate pale lilac flowers, may perhaps be best described as daintily attractive. A. O.

Saxifraga cotyledon var. *Icelandica*.

I HAVE mislaid my copy of IRISH GARDENING for February, but before doing so I read therein a note commending a Saxifrage named as above. That name, however, I am informed, was given to this fine form of *S. cotyledon* in consequence of a mistake about its country of origin. I first made acquaintance with it in the beautiful garden of St. John's College, Oxford, upon which the Rev. Mr. Bidder lavishes such fruitful care. Mr. Bidder had received it from a friend who, he understood, had collected the plant during a trip to Iceland; but, if I am rightly informed, he learnt subsequently that his friend had not gone to Iceland, but to Norway, where, as every one who has visited that delectable land in summer knows, *S. cotyledon* abounds.

Mr. Bidder was so kind as to give me a piece of his treasure, which has produced several strong plants that have never failed to flower abundantly during five or six years. It is indeed a very fine form of *S. cotyledon*, both in flower and leaf. It does not like lime.

HERBERT MAXWELL.

Monreith.

Suburban and Allotment Gardens.

THIS month is the month of the year for gardening work, and work which is neglected now cannot be afterwards overtaken.

SEED SOWING AND PLANTING.—When sowing seeds, sow thinly in rows; an overcrowded seed bed results in stunted plants which will not give a first class crop; also sow to the right depth. When seeds are sown too deeply they do not obtain sufficient air, consequently they become

The seeds that ought to be sown now are peas, a dwarf variety, such as American Wonder; Little Marvel or Rowan's Daisy will do where stakes are difficult to obtain. A flat trench about two to three inches deep and 12 inches wide should be taken out (the ground having been well prepared and manured beforehand); the seeds should then be dropped carefully at intervals of about three inches; three rows can be placed at this distance in the one trench; the soil should then be carefully covered in. Where birds are troublesome it will pay to soak the seeds in linseed oil or paraffin for about 15 minutes, and then shake red lead over them. Both birds and mice are usually kept at

The following quantity of Vegetable Seeds, &c., will be sufficient for the requirements of most garden plots.

Vegetables	Quantity of Seed	Length of line required	When fit for use
Bean, Broad	$\frac{1}{2}$ pint	30 feet	July to Oct.
Borecole, Kale	Packet	10 .. to be transplanted	Dec. ,, April
Broccoli, Early . . . . .	..	10	Oct. ,, Jan.
.. Late . . . . .	..	10	Jan. ,, May
Brussels Sprouts . . . . .	..	10	Dec. ,, May
Cabbage, Nonpareil	$\frac{3}{4}$ ounce	20	July ,, Oct.
.. Offenham . . . . .	..	20	April ,, July
Carrot	$\frac{1}{2}$..	100	Sept. ,, Mar.
Cauliflower	Packet	10 .. to be transplanted	Aug. ,, Oct.
Leek . . . . .	..	10	Jan. ,, April
Lettuce . . . . .	..	20	April ,, Nov.
Onion, Spring sown	1 ounce	150	Sept. ,, April
.. Autumn	1 ..	20 .. to be transplanted	May ,, July
.. Potato	$\frac{3}{4}$ stone	60	Aug. ,, Jan.
Parsley	Packet	20	Year round
Parsnip	1 ounce	100	Oct. to Mar.
Peas, Early	$\frac{1}{2}$ pint	30	July ,, Aug.
.. Mid-season	$\frac{1}{2}$..	30	Sept. ,, Oct.
Potato, Early	3 stone	250	June ,, July
.. Main Crop	All avail	able ground	July ,, June
Rhubarb	6 stools	18	Feb. ,, June
Savoy	Packet	10 .. to be transplanted	Nov. ,, Mar.
Turnip	1 ounce	200	July ,, Feb.

From the Department's Special Leaflet, *Treatment of Allotments for the Growing of Vegetables.*

suffocated, while in other cases it is impossible for the thin stems to push through quantities of soil. For small seeds, such as onions, parsnips, beet, &c., from half an inch to three-quarters of an inch deep will do very well, but for larger seeds, such as peas and beans, from 1 inch to two inches deep would be better. On very heavy or clayed soils the seeds should be sown more thinly than on light or sandy soils. The rows should always be sufficiently far apart to allow of full development to individual plants—carrots and onions require from 12 to 15 inches, parsnips and turnips from 15 to 18 inches, and cabbages and cauliflowers, &c., from 18 to 21 inches.

bay by this treatment. From the middle of the month onwards sow a few early turnips, such as early Model White or early Milan (rows 15 inches apart, seeds half an inch deep); sow also parsnips, choosing a calm day, as these "seeds" are extremely liable to blow away; make rows 15 to 18 inches apart, seeds sown thinly, or sow three seeds in little lumps at intervals of eight inches along the row; a few radish and lettuce seeds can be sown between the rows for early use. For various crops a seed bed should be prepared, breaking up the soil finely, adding, when obtainable, a little leafy material and lime to the surface soil. Then rake the soil level and sow

seeds, such as Early London cauliflowers, broccoli, Brussels sprouts, savoy cabbages, &c., for transplanting later on. Shallots and potato onions may still be planted; put these on ground which has been extremely well manured and deeply cultivated. The rows should be about 12 inches apart and the bulbs from six to 9 inches apart in the row. Press the bulbs into the ground so that their necks or points just appear above the ground; and later on, when growth is going on vigorously, the soil should be drawn away from the bulbs so that they just sit on the soil; this enables them to grow larger. One bulb of each will divide into four or more bulbs, which should grow as big as those planted. Onion seeds should also be sown on a similarly treated soil, making the rows 12 inches apart. Baby onions—called onion sets—can be planted instead; these should grow into large onions, and are not so liable to be attacked by the onion fly maggot. The larger bulbs, however, have a strong tendency to *run to seed*. Early potatoes, previously put to sprout, should be planted in a position facing the sun (see last month's issue *re* potatoes). Jerusalem artichokes, which form the best substitute for potatoes, should also be planted on ground which was previously well manured. Plant in rows 30 inches apart, tubers or sets 12 to 15 inches apart, at about four inches deep. Plant out a few more cabbage plants; these should have well manured ground, which ought to have a dressing of lime at the surface at the rate of four ounces to the square yard. The plants should be from 18 to 24 inches apart each way.

THE FLOWER BORDER.

—Early in the month make a sowing of Sweet Peas on the site previously prepared, placing the seeds as suggested for green peas. Other hardy annual flowers should also be sown towards the end of the month. The soil need not be too rich, although these plants, like most others, pay for liberal treatment. When the soil has been raked fine and comparatively flat sow the seeds *thinly* in round patches or lines, as desired, then rake the soil on each patch or scatter about a quarter of an inch of fine soil over the patches. Useful kinds to grow are Cornflower, Love-in-a-Mist, Candytuft, Coreopsis, Lupins, Lavatera, Mignonette, Phacelia Campanularia (this makes a delightful edging), Shirley Poppy, Sunflower, Sweet Sultan, Virginian Stock, Collinsia Bicolor, Gypsophylla and Linaria maroccana.

W. H. J.

Digging.

THIS is one of the most important operations connected with gardening, and one which is far too often imperfectly performed. The object of digging is to pulverise and aërate the soil, and so bring it into a condition suitable for the growth of plants. It is not our present purpose to explain the changes wrought in the soil itself by the action of sunlight, air and rain, but rather to emphasise the necessity of digging thoroughly. In the first place, it is necessary to open a trench at least one foot wide and the same deep. If the area is small the soil from the trench may be wheeled to the opposite end for filling in the last trench; if the area is fairly large it will be easier

to divide it into two and simply transfer the soil from the first opening across to the end of the other half, and so save wheeling. If manure is being dug in it should be spread on previous to beginning to dig. An amount equal to the width of soil about to be moved should now be shovelled into the first opening and the soil from the next trench carried forward into the opening and so covering the manure. It is most important not to attempt to lift more soil on the spade than can be easily manipulated, and it is equally important, indeed essential, that the spit of soil lifted should be turned upside down as it is thrown off the spade. A width of six inches will usually be quite sufficient to lift, and the spade should be inserted as perpendicular as possible and pushed down to the full length of the blade. It is also important to keep a straight trench and throw the soil well forward, other-

wise the operator will find his trench closing in on him and the manure only half buried.

When digging in winter it is best to leave the surface rough—that is, the soil need not be further broken down when it is thrown from the spade; in this way a greater surface is left exposed to the elements. When digging in spring, however, or just before putting in the crop it is well to break down the lumps and level the surface as the work proceeds. In the accompanying illustration we have endeavoured to show what the work should be like when the digging has proceeded some distance.

The plot shown in the illustration is not, of course, a new one.



Photo by]

[R. M. Pollock.

DIGGING A PLOT.

GARDENER,

The Herb Industry.*

It is less than a year since this Association was started with only a few members, there are now nearly 400 members. Sub-centres, each with its own president and secretary, have been formed in eleven counties as soon as there were over eight members in each. These counties are:—Co. Antrim, Co. Cork, Co. Dublin, Co. Galway, Co. Kerry, Co. Louth, Co. Meath, Queen's Co., Co. Waterford, Co. Wexford, and Co. Wicklow.

Co. Cork stands at the head with 118 members, and Co. Dublin second with 56.

We have found that this has worked very well, and the membership increases directly a sub-centre is formed.

We have the valuable help of Professor Johnson in identifying the plants sent up by members, and this should solve some problems, for though one may know the names, characteristics and habits of many cultivated and wild plants, these lesser known herbs rather defeat one at times.

The Irish Agricultural Wholesale Society have for a time stored and done their best to sell the dried herbs sent up to them; but, as they only took this up in October, they received chiefly almost unsaleable small quantities of summer harvested herbs, with no opportunity of their being added thus late in the season, and they had, therefore, a very poor chance of selling them.

A good many members were disappointed at not being paid at once, but this was unavoidable, and I think you will see how heavily the Irish Agricultural Wholesale Society were handicapped. Perhaps some of you don't know that herb merchants buy in *lots* and *hundredweights*, and that therefore it takes some time to assemble a marketable quantity from small lots sent up. Now that we hope to have our own drying depot, I expect that this trouble will be overcome.

Very soon after this Association was started, we affiliated with the National Herb-growing Association, and quite lately with the National Herb Federation, which last organisation will, I feel convinced, give us a great deal of real help and information. We have agreed to admit 1s. associates of not more than £25 Poor Law Valuation, to enable women and school children in the country to sell herbs which they may grow or collect.

The local organisation of this is in the hands of the presidents and secretaries of the sub-centres, and should, I think, receive a great deal of attention between now and April.

If properly worked, it should be the means of bringing a large quantity of wild herbs into the drying depôts, and also benefiting poor associates to some extent.

Now, as to the herbs which should be cultivated in Co. Dublin, that—as everywhere—*depends on the soil*.

We are lucky in Ireland in having, I think, a large proportion of limestone and calcareous land, which enables us to produce, besides rae-horses and grain, the more valuable of these medicinal herbs. This soil construction appertains, I believe, to a great extent in Co. Dublin, and there is the added advantage of the proximity of the sea, which is an important factor in the well-being

of that captious treasure—Henbane. It grows wild, I think, on one of the islands off Howth.

We are told by the National Herb Federation that Henbane, Belladonna, Datura, Digitalis and Double Camomile are the herbs which will be most wanted next season, and we are asked to grow them in quantity co-operatively, rather than a diversity of herbs according to individual fancy.

My experience of Belladonna, Camomile and Datura is that the cultivation is perfectly easy, and the labour required is no more than for herbaceous borders and useless bedding out.

Digitalis grows wild in so many places, and where it is found in quantity would be an addition for collection to the herb cultivated.

Henbane, I must own, I have not had the courage to try, but I intend to grapple with its many likes and dislikes and fretful ways this season.

I should like to warn any intending growers of Double Camomile against raising it from seed, as a large proportion of it comes single-flowered, which is not now so valuable. I sowed some seed last year as well as putting down guaranteed double plants, and there was not one double flower on the ones from seed.

The double variety also has an underhand way of reverting to single flowers if you try to grow it on a soil it does not approve of. It is as well to manure the land lightly before planting it.

Belladonna and Datura are easy crops in suitable ground and give very little trouble.

My practical advice to you for your county is to select an herb or two herbs by vote at a meeting, and try and grow those co-operatively in large quantities, so that you will have the bulk which I have already spoken of to harvest and send away.

I have said an herb or two herbs, because I don't really know your individual soils, but *leaflets* which have been compiled on the culture of different herbs are on sale at *Greene's Library*, Clare Street, at 1d. post free, and, with other literature, here you will easily be able, with a little study, to select those which suit your locality best.

I want here to say a word to nurserymen, if there are any present. I know you are all going through a very difficult time; you have your stock, and must therefore retain a good many of your staff, but though wages have to be paid orders do not come in as they did before the war.

Herbaceous and bedding out things are not wanted now—they are pleasure plants—and I suppose that you will, some of you, convert spare land into grain or potato ground, but this is not feasible in all cases.

Can you not lay out some of your ground in medicinal herbs?

Grow one as a crop, or grow a variety to sell the seeds and plants to our growers. At present we have to get our seeds in England and France, but we would much rather put our money into Ireland if we can get guaranteed reliable stuff here.

And, remember, very few of these herbs ask for your best land, while many of them prefer shade, moisture, or waste places.

Now, as to the prospect of herb-growing as an industry in Ireland. Well, the prospect of anything seems a little uncertain just now, and it is not a time to prophecy as to the future, but one may presume that drugs and medicine will always

* From a paper read in Dublin.

be wanted, and that therefore the herbs which produce them must be grown. I think that we ought to do our utmost to grow all that can be produced in a temperate climate.

The money value of import of herbs into the United Kingdom in 1913 was £419.687. Those imports include many herbs which we can grow.

Now, do you see why after the war we should idly hand back our share of that sum into alien hands? I don't.

Herb-growing in Ireland has made a very good beginning, and we have a variety of climates—in some places such that will produce semi-tropical vegetation, and soils which can, I firmly believe, grow almost anything.

I say "can" advisedly, because I mean that it will not happen automatically that herbs or any other crop will grow without any effort or thought.

You have got to find the herb that suits your soil and use your intelligence to make it grow and give you a good profit.

I always feel that people who own, or live, or work on land are showing a very poor spirit if they don't employ every means and try every experiment to wrest from it the uttermost farthing of profit and the greatest percentage of yield possible.

It's your inheritance or your livelihood—use it—try to make it give you more than it has done anyone before.

There's a certain amount of sentiment about "doing one's bit" these times—quite rightly—sentiment is useful in its place, but where you are working to build up a trade or industry, sentiment is out of place, and the more your work is done on businesslike and practical lines, the more sure will be the foundation.

Several people have said: "I don't want any money for my herbs, I just want to help."

That's a very splendid spirit, but I want our members to go a bit farther, though you may think it sounds very mercantile and prosaic.

I want you to make all the money that you can to show what *can* be made.

You need not put it into your own pockets if you prefer not to do so, there are hundreds of charities badly in need of funds.

Apply it as seems to you best, but *make* it, to show that after the war we can keep some of the trade which before we allowed those who are now our enemies to have.

The whole future of herb-growing in Ireland or anywhere else depends on a strong co-operative effort to establish it as an industry.

I know that if one is very interested in any work there is a great tendency to strike out a line of one's own, to follow one's own fancy and do

something different from other people—in short, to individualise—but I think that you will agree with me that in a time like the present, that feeling must be laid aside, and we must think and act *nationally* and *in unison*.

Individuality has now its *only* place and an immeasurably wide scope in self-sacrifice and self-denial.

Therefore, if we want to form for this country an industry which will last on into times of peace, we have got to work for it collectively—as one man—not with the thought of personal interest.

MURIEL E. BLAND.

Correspondence.

TO THE EDITOR OF IRISH GARDENING.

DEAR SIR.—The instructive and interesting articles on allotment gardening and on potato growing are of very special value at the present moment when much ground, which for many years has been under grass (or weeds), is now being broken up and cultivated. At pages 22 and 26 in your issue for February there are such articles. That at page 22, by W. A. M., gives a selection of potatoes for planting, amongst them as a main late crop variety "Skerry." To this selection growers in the middle eastern districts of Ireland will certainly take exception. Skerry



LEUCOCJUM VERNUM CARPATHICUM

(see page 35)

on good average soil in the district defined has, in many instances, proved to be a most disappointing potato, inferior in quality, and a poor cropper. It would be of great interest to your numerous readers, and especially to the inexperienced, if growers would give a list of the three best varieties for their districts, one each—early, mid-season, and late. Might I also suggest, for the benefit of the inexperienced, articles of a simple nature giving elementary details of cultivation, such as depth of planting, distances between the sets, as well as the drills, and how to treat tough old grass which has formed a mat of roots. Further suggestions as to successional cropping of a plot $\frac{1}{2}$ of an acre, the usual size of an allotment, so as to avoid having the ground empty, would be most helpful. It must be remembered that many of those who are now patriotically breaking up their lawns, plots, or back gardens are comparatively ignorant of agriculture or horticulture, and possess no implements. Such grandiose suggestions as plough, cross-plough, harrow, manure liberally are worse than useless—they are discouraging.—Yours truly,

"EAST COAST."

The Forest Trees of Canada.

By R. G. LEWIS.

CONIFEROUS forest growth prevails over the greater part of Canada's potential forest area. If we eliminate from our conception of potential forest that which grows on land fit for agriculture we eliminate most of the hard-wood forests of commercial value. In the rigorous climate of Canada deciduous-leaved trees, as a general rule, are found in commercial sizes and quantities only on the better sites. Where coniferous forests are destroyed by fire or lumbering operations and deciduous-leaved trees, such as the birches and poplars, establish themselves by means of their light wind-borne seeds, the change is only a temporary one. The original coniferous forest will eventually re-establish itself by its more persistent growth.

In Canada there are approximately 150 different species and varieties of trees. Only 32 of these are conifers, but the wood of these forms 95 per cent. of our forest products, and the trees themselves cover an even larger proportion of our potential forest area.

While the actual number of species of deciduous-leaved trees seems large in comparison to their commercial importance, out of a total of some 118 species and varieties, only four or five are worthy of comparison with the conifers. The others form the northernmost fringe of the great interior hardwood forest type of the United States. Many of these species are confined in Canada to a narrow strip of territory along the north shore of Lake Erie, and as far as the discussion of Canada's timber resources are concerned they may be classed with exotic tree growth.

The five native spruce species are all of commercial importance. Spruce lumber formed over one-third of the total output of Canadian saw-mills in 1911. Spruce pulpwood is used in preference to all others, and in the same year formed over two-thirds of the total quantity of pulpwood consumed in Canadian pulp-mills and exported in the raw or unmanufactured state. The wood has a long, tough, colourless fibre and being free from resin is considered to be the best material for pulp manufacture on the market of the world.

Spruce is also used for railway ties or sleepers, telegraph, telephoye and electric light and power line poles, cooerage, mining timbers, fencing and firewood. Of the five native spruce species the white spruce (*Picea canadensis*) is the most abundant and the most important commercially. With black spruce (*Picea mariana*) it ranges from Labrador to Alaska, extending northward almost to the limit of tree growth and southward into the United States. Toward the northern limits of its distribution the tree, of course, does not reach commercial size, being in many cases little more than a prostrate shrub.

The black spruce (*Picea mariana*) is of less value, being a smaller, slow-growing tree, often confined to swampy situations and reaching saw log or pulpwood sizes only under more favourable conditions of growth. The red spruce (*Picea rubra*) is confined in its distribution to the Province of Quebec and the Maritime Provinces. Its wood is considered to be of greater technical value than that of the other spruce species, but it is not usually so abundant on the market as the white

spruce. The western species (*Picea Engelmanni* and *Picea Sitchensis*) are not found east of the Rocky Mountains, and their utilization is confined to the Province of British Columbia, they being essentially Pacific Coast trees. Their wood is of high technical value, and can usually be obtained in larger dimensions than that of the other spruces, as the trees attain great size in this region.

As their distribution is restricted and as they are found growing with trees of greater commercial value, their lumber does not assume great national importance at the present time.

There are nine distinct pine species native to Canada, and of these, six are of great commercial importance. The eastern white pine (*Pinus Strobus*) is the most valuable coniferous wood in Canada. It has superior qualities for the wood worker and enjoys a world-wide reputation. Up to a few years ago it was the most important wood in Canada in point of quantity of lumber sawn and exported in the form of square timber (Quebec pine). Owing to increased scarcity of good material the wood has fallen off in production till its place has been taken at the head of the list by the spruces, of which there is a greater supply of available material. The wood of white pine is soft, easy to work, fairly durable and strong in comparison to its weight. Its most valuable quality in addition to these is its faculty for holding its shape with a minimum of shrinking or swelling once it has been properly seasoned. In this latter respect there are a few woods of commerce that can surpass it. The western white pine (*Pinus monticola*) is similar in most respects to the eastern species. It is a smaller tree, of comparatively rare occurrence and is of minor commercial importance. In distribution it is confined to the province of British Columbia, while the eastern white pine is found from eastern Manitoba to the Atlantic seaboard. The remaining pine species are sometimes classed as "hard pines," their wood being harder and more resinous than that of the "soft" or white pines. The red or Norway pine of eastern Canada and the western yellow or "Bull" pine of the interior of British Columbia (*Pinus resinosa* and *Ponderosa*) are valuable sources of light structural timber, and are also sawn into lumber. The two jack pines (*Pinus Banksiana* of the east and north and *Pinus Murrayana* of the Rocky Mountains and British Columbia) are not considered as valuable timber-producing trees, although they are both used locally for rough construction. Jack pine railway ties are used to an enormous extent on the newly constructed transcontinental railway lines as the wood is handy to the right-of-way and can be obtained in sufficient quantity with a minimum of haulage. In 1911 over forty per cent. of the ties used in Canada were of this wood. Its cheapness and abundance are its most important characteristics in this respect. In the manufacture of "Kraft" pulp by the sulphate process it has been found that jack pine is a satisfactory raw material, and the use of the wood for this purpose has increased in the last few years very greatly. There are three other species of the genus *Pinus* that reach tree size in Canada, but these are only of local importance for firewood. The Douglas fir (*Pseudotsuga mucronata*) often erroneously called "Oregon Pine," of British Columbia and the Pacific Coast, is the only representative of its genus in Canada. It yields more

lumber annually than any other single species in America. The cut in Canada represents over 15 per cent. of the total lumber production. The tree in Canada is not found east of of the Rocky Mountains, the greater part of the lumber being obtained in the Coast Region of British Columbia. This is Canada's largest tree, and from it larger timbers can be obtained than from any other tree in America, with the single exception perhaps of the California Redwood (*Sequoia*). Up to the present time its use has been largely confined to structural purposes, but its attractive grain and figure are winning for its popularity as a wood for more decorative purposes, such as interior finish and cabinet work. The wood comes fourth in importance in Canada as a material for railway ties, and is used extensively for mining timbers. It is noted chiefly for its strength and durability and the dimensions in which it can be obtained.

There are three hemlock species in Canada's forests, two of which are valuable timber trees. The eastern hemlock (*Tsuga canadensis*) is abundant throughout its range in the eastern provinces, but is not found west of the province of Ontario.

The wood is used chiefly for rough, cheap construction, especially house framing. It is fairly strong but has many objectionable features from the woodworker's standpoint, being rough, harsh, splintery, and difficult to work. It is not durable in contact with moisture, but supplies the demand for a cheap, strong material for many purposes. The wood is also used for railway ties, poles, mining timber, pulpwood and firewood. Its bark is a valuable source of tannin. The western hemlock has few of the objectionable technical features of its eastern relative. This tree (*Tsuga heterophylla*) is found in Canada only in the province of British Columbia, and is becoming more valuable each year as the prejudices due to its name are overcome. The two trees in Canada in 1914 yielded over eight per cent. of the total lumber production of the country.

There is only one balsam fir in eastern Canada (*Abies balsamea*). The tree is found from Labrador to Alaska, covering practically the same geographical distribution as the white and black spruces. Its wood is sawn into lumber to take the place of more valuable woods for rough construction, as it has few technical qualities which would recommend it for any other use as lumber. The purpose for which the wood of this tree is best suited is in the manufacture of wood pulp for paper making. The tree, in nature, occurs mixed with spruce, and it is cut and marketed with that wood. Balsam fir has the requisite length and toughness of fibre for pulp making, and in spite of the fact that it gives a slightly lower yield of pulp per cord and contains a higher percentage of resin than spruce its use is increasing. In 1914 one-fourth of the pulpwood cut was of this species.

There are three western balsam fir species whose wood is very similar to that of *Abies balsamea*. The most important of these at present is probably the Alpine fir (*Abies lasiocarpa*). Where these western species are utilized their wood is put to similar uses to those of the eastern species. They are confined in their distribution to the Rocky Mountains and the Pacific Slopes.

There are only two species of the genus *Thuja*, commonly called "Cedar" in Canada. They are both of great commercial importance, each in its own region, as their ranges do not overlap. The

wood of the cedars is the most durable of the conifers of the Dominion. The eastern tree, white cedar (*Thuja occidentalis*) is found from the Atlantic to the south-eastern part of Manitoba. It does not extend as far north as some of the other conifers, and is nowhere very plentiful, being confined to moist situations. The wood has become so scarce in Eastern Canada that the supply is not equal to the demand, and the market for a light, durable wood is being partly filled by imported cypress (*Taxodium distichum*) from the southern United States. Cedar is preferred to all other native woods for shingles and all structural work exposed to moisture. In spite of the fact that the wood is not strong, its great durability in contact with the soil makes it a valuable railway tie material. In 1914, this wood came second on the list for railway ties purchased by Canadian railways. It is used in enormous quantities both locally and for export for fence-posts, and its use for this purpose is largely responsible for the increased scarcity of the lumber, as young trees are used before they have time to reach saw log sizes. The western red cedar (*Thuja plicata*) is one of the giants of the Pacific Coast, being only surpassed in size by Douglas fir. Its wood is sawn into lumber of large dimensions and is made into shingles to a greater extent than any other wood in Canada.

Birch is Canada's most important hardwood and one of the few woods of this class where the exported material exceeds that imported. There are at least seven native species, but only two are worthy of any detailed discussion. The yellow birch (*Betula lutea*) is the source of the most valuable birch lumber used for flooring, furniture, cabinet work and vehicle stock. The tree grows only in Ontario, Quebec and the Maritime Provinces, and does not reach commercial dimensions north of the height-of-land between the St. Lawrence River and Hudson Bay. Its wood is hard, heavy, strong and tough but is not durable in contact with moisture.

The paper birch (*Betula alba var. papyrifera*) has a much wider distribution and is more abundant in its range, being common from the Atlantic to the Rocky Mountains. Its wood is softer, weaker and less durable than the yellow birch, and is not at present of great commercial value. It is usually considered as a "weed tree," as it springs up with marvellous alacrity on burned-over or cut-over areas. It has certain qualities of toughness and compactness which will in time win it a place among our more important woods when these qualities are better understood. The tough, resinous bark of this tree has supplied the aborigines for centuries with the material for covering their famous "birch bark canoes."

Of the three native tamarack or larch species, two are worthy of note. The eastern tamarack (*Larix laricina*) is found in every province in the Dominion in swampy situations. Its wood is hard, strong and durable, being similar to that of Douglas fir and the Southern hard pines. The western larch (*Larix occidentalis*) is more important commercially. It is found only in British Columbia, but grows on better sites and reached greater size than the eastern tree. The wood of these two species together is cut into lumber and also used for railway ties, coming third on the list in 1914, and for mining timbers and fencing.

The maple, whose leaf is the national emblem

of Canada, is our second most important hardwood, and is represented in Canada by nine or more species scattered from the Atlantic to the Pacific. Only one species however can be considered here. The sugar maple or hard maple (*Acer saccharum*) produces the most valuable lumber, and, like birch, is used for furniture, vehicle stock and interior house finishing. The sap of this tree is the source of maple syrup and sugar.

Basswood (*Tilia americana*) is a valuable wood for cabinet work of all kinds, but being restricted in distribution and in great demand the available supply has almost disappeared. It formed less than one per cent. of the lumber produced in Canadian sawmills in 1914.

Elm, represented by three species in Canada, is a valuable vehicle-wood. Beech, ash, oak, butternut, chestnut, hickory, cherry, black walnut, tulip, black gum, red alder, sycamore and sassafras are all valuable woods, and are still sawn into lumber in Canada, but in most cases the supply, which was never large, has dwindled almost to insignificance.

The popular species, of which there are seven native to Canada, are for the most part considered as "weed trees," but, like paper birch and jack pine, they produce great quantities of material which will eventually become valuable at least for some purpose when their qualities are better appreciated and when the scarcity of the more valuable of better understood woods will make their careful utilization imperative.—*International Review of the Science and Practice of Agriculture*, September, 1916.

Some Easily Grown Salad Plants.

By T. E. TOMALIN, Bessborough, Co. Kilkenny.

ALTHOUGH salad plants may not possess so much nutritive value as some other vegetables, they should not be altogether neglected, as they undoubtedly have many health-giving qualities, and will serve to render many a simple meal both attractive and appetising. Moreover, most of these plants may be quite successfully grown between the rows of, or as an edging to, the more important crops in the allotment or small garden. The kinds mentioned below are all of easy cultivation, and are economical of garden space.

LETTUCE.—This is perhaps the most important salad plant, so we give it pride of place. Lettuce seed may be sown out of doors from early March to September, and to ensure a constant supply it is best to sow a small pinch of seed at intervals of a fortnight. By doing this there will always be heads fit to cut during the summer and autumn, while the last sowings will provide plants to stand the winter, and will mature during the following April and May. Sow in shallow drills one inch deep. Protect the small seedlings from birds and slugs by frequent dustings with soot immediately they appear above ground. When large enough to handle thin out to six inches apart in the case of cabbage lettuce, and nine inches to one foot for the cos varieties. Plant the thinnings between rows of peas or Brussels sprouts, or on the ridges between celery trenches, and water well when necessary. Each sowing

will thus provide two separate batches for cutting, as the plants left in the seed drills will mature slightly in advance of those transplanted. To ensure an early crop seed should be sown in small boxes, filled with light soil. These will quickly germinate in a sunny window. When the seedlings appear they should be hardened gradually, by placing out of doors in the day time, and when fit to transplant they can be transported to the allotment, and there planted out singly. A cabbage variety, such as Golden Ball, is most suitable for this method. A splendid cabbage lettuce for summer sowing out of doors is Iceberg. There are several good cos varieties, while the variety Little Gem unites the good qualities of both sections, and is, moreover, one of the hardiest lettuces to stand the winter.

RADISH.—Radish seed should be sown at intervals of ten days to keep up a constant supply throughout the summer. A start may be made early in March, choosing a sunny position for the earliest sowings, and having a little dry litter at hand to protect them from frost, if necessary. As the weather becomes warmer a cool shady position will be most suitable, reverting to the warmer situation again in autumn. Radishes to be good should be grown quickly, therefore the soil must be rich and fine, and copious waterings given during dry weather. If the seedlings come up too thickly, it is important to thin them out, so that each plant stands clear of its neighbour.

MUSTARD AND CRESS.—These may be grown in the open from March to October. They prefer a shady situation during the summer, such as that between two rows of peas or beans. It is best to sow a small quantity weekly, as it quickly passes the young and tender stage at which it is eatable. It can also be easily raised in small boxes of fine soil in the house, indeed this is the most satisfactory method of ensuring a regular supply.

CHIVES.—The young growths of chives will add a piquancy to a salad, when the stronger flavour of the onion would perhaps not be acceptable. Half a dozen roots should be planted in an odd corner, and if these are kept cut over regularly during the growing season, they will provide a constant supply of fresh young leaves. The plants increase rapidly, and should be taken up and divided every three years.

BET.—Beetroot is always appreciated, either in a mixed salad or when simply served alone with a little vinegar; moreover, the growing plant is so ornamental that it may well be employed at a time like this to beautify the front garden, in place of the more orthodox bedding plants. Seed of the long rooted kinds should be sown early in May in drills one foot apart, afterwards thinning out the young plants to nine inches apart in the rows. They should be lifted carefully in autumn, taking care not to damage the roots, otherwise they will "bleed" and lose their rich colour. The roots should be stored in sand for the winter and protected from frost. Seeds of Globe Beet sown in April will provide roots fit for use in July. This variety, however, does not provide such attractive foliage as the long rooted kinds.

ENDIVE.—Endive takes the place of lettuce as the main ingredient of winter salads. The curled varieties are the most attractive, but for hardness and general usefulness the broad leaved Batavian is the most suitable kind. Seed may be sown in

June, and the young plants afforded similar treatment to that advised for lettuces, except that more room must be given them—about 15 inches between the plants will be a suitable distance. When fully grown, a few at a time should be blanched by tying up the outside leaves over the heart, and drawing up soil to them. A covering of dry leaves will assist this process, and will also serve as a protection from frost. Seed should be sown again in July to provide a later supply. Another method of blanching endive is by lifting a few plants carefully with a good ball of soil, and packing them carefully into a box about a foot deep, afterwards placing them in a dark shed or cellar. Endive may be successfully grown on ground just cleared of early potatoes, or as I invariably do here, between the rows of a newly planted strawberry bed.

There are, of course, many other plants grown for salading, but those described above will be found to meet the requirements of most people, and can be relied on to provide an agreeable and various supply.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill, Shaue's Castle, Antrim.

KITCHEN GARDEN.

THE frost has been so severe the whole of the month of February that work outside in the gardens has been nearly at a standstill, so that this month will be an extra busy one trying to make up for lost time. I would ask the reader to look up last month's notes and make good any arrears.

POTATOES which have been planted in pits and pots in January will now require earthing-up or topdressing; give the soil occasional soakings of water.

This month we will surely get in a good supply of early potatoes on a well sheltered border. May Queen is one of the best for extra early; follow with Sir John Llewellyn or Early Puritan, Colleen and British Queen.

The sets should be planted in rows 2 feet apart allowing 1 foot between each tuber in the row, covering them with 4 inches of the finest soil. If tubers are well sprouted take care not to injure the young shoots in the process of planting. Sprouted tubers will be a fortnight ahead of tubers not sprouted, and do not require so early planting, which is a great help especially in wet districts and heavy soils.

Look over tubers set up in boxes and remove all unnecessary shoots.

ONIONS.—Autumn-sown plants should be transplanted into deeply dug, well enriched, soil; a row between the rows of young strawberries not expected to fruit this year is a good place to plant if ground is a consideration, and it ought to be this year. Plants raised in heat should now be ready for pricking into boxes of fine soil consisting of rich loam and decayed cow manure, with a good

sprinkling of an old mushroom bed. After being sifted and mixed the compost should be pressed into boxes; care must be taken with the plants at this stage, as they are easily injured. After transplanting, the house or pit should be kept closed for a few days until the plants get a fresh hold, and water must be given sparingly at first, but the plants should be syringed daily.

The mair sowing of onions outside should be made this month if we can get the ground dry; but it is a mistake to try and prepare the ground unless we can get it to crumble, as an onion bed requires to be well firmed, and to try to firm when at all wet only cakes the bed, and the poor seedling has a struggle to get through the crust, and what is worse, no air gets through; in fact the crop would only be a failure. So get the ground dry, give it a good dusting of lime, soot and wood-ashes, fork the whole bed lightly over, then allow it time to dry again, then tramp it well, or run a light roller over it, then rake and re-rake until you get a good fine surface; draw the drills shallow, 13 inches apart, sow thinly and cover lightly, tramp again and draw the back of the rake lightly over the whole bed, dress up the sides of the bed and rake alleys.

PEAS.—Young plants raised under glass air freely for some time in order to harden them thoroughly before planting out; shelter from the wind must be provided as soon as the plants are put out, or the crop may be spoiled. A number of small branches placed up each side of the row will help. A sowing also should be made outside on an early border. Take out a trench for all peas 18 inches deep and put in a layer of manure and a layer of soil alternately till filled. The first sowing of peas outside I always cover with old dry potting soil.

BROAD BEANS.—A good full sowing of these should be made. Sow in double rows, allowing a space of 3 to 4 feet between each set of rows.

The earlier sowing of French Beans in pots will now be growing apace, they will require a nice topdressing of loamy soil and the plants supported by placing small twigs round the edge of pots; continue to make further sowing in pots at regular intervals.

LEEKs.—Sow a full crop in good rich soil in rows 1 foot apart.

BRASSICAS.—Full sowings of Broccoli, Brussels Sprouts and Cabbages may be made. Smaller sowings of Cauliflowers, Kales and Savoys should be made at the same time. After the seeds are sown either in beds, broadcast or in drills, it is a good plan to give the beds a dusting of lime and soot, it helps to keep off slugs, &c., and benefits the seedlings. Cover the beds with nets supported by a frame work as soon as the sowing is completed to protect the young seedlings from the mischievous birds—they are specially fond of young turnips. A sowing of Early Milan should be made on an early border; also a sowing of Cos and Cabbage Lettuce and a pinch of Radish every ten days.

Cut and prepare pea rods, also cut loam sods and build in a square stack in frame ground; turn over fresh manure, mixing it well with leaves; turn compo heap, mixing it well with lime.

Transplant Cauliflowers that have been wintered in frames.

Thin Carrots in frame, and if frames are available put in another sowing.

Pot off Tomatoes in the house they are growing

in, and have the soil warmed up, as young plants at the pricking-off stage are easily checked and die off if the roots go into cold soil, or are taken into a cold potting shed to be potted.

FRUIT GARDEN.

The past cold, frosty weather will retard the growth of flower buds, so that we may expect late blossoms. Peaches and Apricots are always the first, and require protection from spring frost—tiffany or a double thickness of fish netting hung down from the coping with supports to keep it off the tree. It is best to roll it off every day, as even the netting hinders the passing to and fro of bees if they get a fine day to come out.

Finish off all pruning of Apple standards and forking between and round apples; give the surface of the ground round the base of the trees a dusting of basic slag or any reliable fertiliser.

GRAFTING.—Preparation may now be made for grafting if stocks are already cut back. Clay must be procured and well handled. A good method is to add a little cow manure, working the two well together.

SPRAYING.—If not completed I would advise anyone to use a weaker solution, as the buds will be pushing now.

FLOWER GARDEN.

BEDDING PLANTS.—Pelargoniums or Bedding Geraniums which are still in cutting boxes must now be potted off singly and placed in a warmer house; a shelf or stage in ainery which has just been started will suit them for a few weeks. Pot also Fuchsias and Heliotrope autumn cuttings. Spring cuttings root readily now on a moderately warm hotbed; insert the cuttings firmly round the sides of small pots in light sandy soil; water them in and keep them shaded from the bright sunshine till roots are formed.

BORDER CARNATIONS.—As soon as the soil can be got into a suitable condition, the plants that have been wintered in a cold frame may be planted out. Some attention must be paid to the ground before planting out the plants. Wood-ashes, soot and old potting soil are all suitable materials for mixing with the soil for Carnations. Some of the perpetual-flowering Carnations do well when planted outside on a sunny, warm border; old pot plants planted out give quantities of fine flowers all through the summer and autumn.

PINKS that have been raised from pips will require to be lifted from their nursery beds and planted into their permanent quarters; they make a fine edging in a kitchen garden, or clumps in the foreground of a mixed border.

LOBELIA CARDINALIS.—This may now be broken up into small pieces, each piece potted singly in a 3-inch pot and placed back into a cold frame. They require to be kept on the dry side until they begin to grow freely.

SWEET PEAS.—Autumn-sown plants may be planted out—if for big bloom plant singly—cover each with a 6-inch pot at night, as the nights are sure to be cold in March. Seeds sown in January will be up, they will require plenty of air, lifting the light off altogether on fine days.

Support the plants with little twigs round the pots. Another sowing should be made this month in pots, and started in a cold frame. Protect them from mice, for they could destroy the whole lot in one night.

Flower Beds and Borders planted with Wall-flowers, Polyanthus, and other spring flowers should be examined, and any plants loosened with the frost should be firmed, the beds scuffled and made tidy before the plants come into bloom; trim the verges with the edging knife, making this quarter as attractive as possible.

Lawns should be swept and the roller kept going as much as possible; continue forking or digging borders.

Cut down Tritomas and burn clumps of Pampas Grass; they grow much better after burning, and it is very hard to clean them otherwise.

Continue pruning and tying climbers, give the Rambler Roses a good thinning out, cutting out all dead and old wood, laying in the young growth 4 inches apart.

Towards the end of the month the bush Roses may be pruned, commencing with the Hybrid Perpetuals, cut back all weak twiggy shoots and cut back strong growth according to their strength.

Some strong growing Roses (if they are in beds by themselves—as Roses look best one bed one colour) do well layered—that is, laying the strongest growths along the ground, pegging them down with good stout pegs; they make a fine show, and you get quantities of blooms, and if disbudded quite equal to any show blooms.

Fork the beds or borders over after pruning, giving them a good dusting of artificial manure—Potash, Super, or Guano.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Ballymore, Fota

THE KITCHEN GARDEN

A LONG spell of wintry weather of a pronounced character has entirely suspended much work in the garden generally, and in consequence vegetation for the time of the year is backward; but let us hope that such conditions are only a blessing in disguise, for undoubtedly they will have a very beneficial influence upon the ground, disintegrating that which was broken up, and also causing the destruction of many obnoxious insect pests, which of a mild winter go more or less unheeded by the birds, so that there might be a great amount of truth in the expression I have heard more than once—that the old country was never so prosperous since the frost and snow left it.

POTATOES.—Great as has been the interest displayed in the cult of this important vegetable at all times in this country, efforts will be made in all directions this year to further increase the crop, and rightly so wherever favourable conditions exist. Many people will be making their first step in this direction, and it is to those that I would suggest that they obtain some practical advice before embarking, for good seed is scarce and costly, and it would be only a

grievous waste to plant such on ground and situations where the chances of success are very remote. The site for the maincrop should be an open one, free from the evil influences of overhanging trees and their robbing roots, and the ground should be thoroughly well worked and liberally enriched with farmyard manure or the best substitute—the best being, no doubt, seaweed where procurable.

Throughout the present and early next month planting may be done. If the tubers are not sprouted at the time of planting it may safely be carried out a little earlier. The governing factor will be the weather. Planting may be done with a dibber, or the sets laid in drills, or planted as the digging of the garden proceeds: 2 feet 6 inches to 3 feet will not be too much between the rows and 15 inches between each tuber, though I am aware very few farmers give them that distance between the rows, but in gardens it admits of winter greens being planted immediately after earthing up. In good ground a row should be planted wherever available, and even in peace time as an edging to walks they are very handsome when in flower.

PEAS.—Varieties renowned for their productiveness should be sown for succession of the second early Marrowfat types. The practice of preparing and sowing Peas in single lines in various parts of the garden in preference to having the whole of the rows on one plot is undoubtedly a good one for several reasons. It has generally been recommended that Peas require plenty of manure worked into the soil, but from an experience last year with a row of the variety Gradus and also one of Broad Beans, on the same plot, that followed a patch of Cabbage and received only a dressing of lime that was dug in preparatory for Potatoes, I am convinced that excellent results may be obtained without fresh supplies of manure. If trenches are taken out and manure added as generally made for Celery, the ground should first be dug, and the same remarks apply to all vegetable crops similarly treated, as I am sure that when cut out of solid ground and refilled when the loosened soil condenses, the conditions at the roots are unfavourable to the well-being of the plant's growth. The seed should not be sown too thickly, as nothing is gained by overcrowding, but allowance must be made at the time for any possible losses through various causes, and 2 inches between each seed will allow for that.

SPINACH BEET.—This is a most remunerative crop, which will give supplies for a twelvemonth and in the dead of the winter. Seed may be sown any time when the ground is workable, and a pinch at every 6 inches, in drills a foot apart, can be thinned afterwards. Encourage last season's sowing with a dusting of soot and loosening the surface soil with the Dutch hoe.

SEAKALE.—The planting of the sets or thongs may be carried out as soon as the ground is ready by making holes with a dibber sufficiently deep enough so that the crown is an inch or two below the surface in rows 18 inches apart and 9 inches between each.

TURNIPS.—Successional sowings should be made, and if a little superphosphate can be drilled in with the seed it will considerably help the crop. The thinning of the earliest sowings should be done piecemeal, for birds have a habit of pulling them out sometimes.

WINTER GREENS.—About the end of the month a sowing of the various Brassicas for supplying the late autumn and winter months may be made. The seed may be sown in drills or broadcast, it matters little, though I prefer the latter, as if not sown too thickly the plants can develop better. Select a piece of ground that has been cropped with some totally different family, well dig and mark out into beds a yard wide, leaving alleys a foot in width which may be thrown out on to the beds, or, simpler still, trodden to a lower surface. When sowing, separate the species as widely as possible, cover lightly with fine soil, and if the weather is dry, water with a fine rose-can, and either protect with netting from the birds or dress the seed before sowing with Horticool.

LEEKS.—Sow in drills or broadcast thinly for the winter and spring supplies.

WINTER ONIONS.—These may be planted out whenever their permanent quarter is ready. The ground if at all lumpy should be forked over first, and a dressing of lime or soot and wood-ash will be beneficial before treading and raking down to a fine tilth. Make deep holes with the dibber so that the roots go straight down, fill in with loose fine soil from the surface, and avoid planting too deeply, in rows a foot apart and 6 inches from plant to plant.

BROAD BEANS.—Make successional sowings of the Longpod type, usually in double rows, allowing a foot between each and placing the seeds alternately at 6 inches apart. If more than one row is sown allow at the very least a yard between them. I have seen seed dibbled in between Spring Cabbage with satisfactory results, and this year hope to do so with a plot on a narrow border facing west, and plant Shallots half-way between the rows of Cabbage plants.

PARSLEY.—If seed was not sown inside or on a mild hotbed for transplanting when hardened off for earliest supplies, sow a few drills on a south border for early pickings.

SALSIFY.—Sow in drills 15 inches apart, and treat similarly as for Parsnips for soil conditions.

CABBAGE.—Make a sowing at once of the larger growing varieties, such as Enfield Market, for summer supplies.

THE HARDY FRUIT GARDEN.

Complete the pruning as early in this month as possible, and make every effort to leave the garden as tidy as possible by burning all rubbish and prunings and forking up the surface soil under and around the trees. This applies to all, I think, excepting Raspberries, and these will be better if undisturbed. Some gardeners mulch these annually with cinder ashes to provide a light tilth for hoeing, and with good results. A sprinkling of Basic Slag under the mulch will help them, or a topdressing of manure, but heavy coatings of rich farmyard manure tends to weaken rather than improve their growing and fruiting qualities, at least that is my experience. With other fruits the loosening of the ground not only improves the appearance, but can be much more easily hoed and weeds kept under, and provides a natural mulch by having a loose, fine surface in spells of dry weather, and if stimulants are needed and given, may be much more easily watered in.

Young trees of pyramidal habit, however carefully pruned to outer buds, are apt to grow almost fastigate. This can often be corrected whilst the wood is young by employing forked struts and tying them into position on the main stems. But these must be examined occasionally as the wood swells rapidly. Black Currant bushes that have become unduly large and weak may be rejuvenated by cutting them back hard to the base, when strong young shoots will come away. Avoid overcrowding, and especially in the centre of the trees, by removing the old growths—the only pruning necessary for these. Cuttings of White and Red Currants and Gooseberries that have been saved for forming young bushes should have the lower buds removed before planting, but those on Black Currants may be left. Cut down newly planted Raspberries to the ground-level or nearly so. Figs should have the oldest wood removed in thinning out the growth. These often make too much growth at the expense of fruit through the roots having an unlimited run.

THE FLOWER GARDEN.

LAWNS, and especially those adjacent to walks and drives, should be thoroughly well swept and rolled before the mowing season comes upon us. Where moss is prevalent the sward may be considerably improved by first of all cutting as low as possible with a scythe, almost into the ground as it were, and then thoroughly well raking with a sharp iron-toothed rake, or on large stretches by harrowing, and if a dusting of soot or sulphate of ammonia be given afterwards in showery weather an improved appearance will soon be apparent. Any turf requiring relaying should be completed as soon as possible and uneven surfaces on lawns relayed if time permits. Attend to the edging of grass-edged garden walks. Replant perennial Asters or Michaelmas Daisies in well prepared ground, and give plenty of room for staking out the growth. Plant Pentstemons, and if not already done pinch out the point after they get over the shift. This delays flowering, but ensures a greater display later.

The Rose Garden proper will need attention this month with regard to pruning. First cut out all dead and useless wood and cut hard back any weak growths, and cut back the remaining growths to five or six eyes, but leaving the foremost bud to improve the symmetry of the bush. For exhibition blooms harder pruning must be resorted to. Clear away all prunings and fork over the beds after dressing with manure. If carpeting plants, such as Violas, are used, these should not be allowed to grow up into the growth of the Roses. *Nepeta Mussinii* makes a good plant for growing at the base of Standards and half-standards, but grows too wild for beds of dwarfs. The single and double *Gypsophila* also is fine for the same purpose. For beds of Roses *Mignonette* is hard to beat.

Notes on some New Primulas.

IN a recent article in January, on the above the names *Primula conspersa* and *P. Loezii* (page 9) should be transposed.

Goatsrue.

THE Noxious Weeds Act, which has been in force for more than sixteen years in New Zealand, makes the destruction of certain plants obligatory. Some of these are regarded as noxious throughout New Zealand, others only in certain districts, according to a declaration by the local authorities.

The goatsrue (*Galega officinalis*) has also just been included in this latter category.

This species of Leguminosae, cultivated in gardens in several parts of New Zealand, has only become wild on the banks and in the old alluvial soil of the rivers Manawatu and Pohangina. It spreads rapidly along roads paved with the gravel of these rivers. As usually, *Galega* is not eaten in sufficient quantities by animals to prevent it flowering, it spreads rapidly wherever it takes hold, unless the soil is covered with a thick coating of grass. In New Zealand, the *Galega* often attains 3½ feet, and more in height. It generally flowers towards the second week in December, and remains in flower for about two months. If mown a little before flowering, it flowers in March; if the plants are cut at intervals, they may even flower three times in one season. The ordinary method, therefore, which consists in preventing the flowering of weeds by a single mowing per year, is almost valueless for this weed, which must be turned in.

The *Galega* is regarded as a weed because—(1) it is very little liked by cattle; (2) it tends to choke more desirable plants; (3) it is considered poisonous.

Towards the end of autumn and in winter animals feed to some small extent on the branches of the plant when they begin to dry. The same is the case at the beginning of spring, before the branches harden.

On the other hand, all animals refuse the plant during summer, when it is in full vigour. This seems to be due to the bitterness of its leaves. Moreover, at some seasons its leaves are markedly poisonous to sheep, and perhaps also to young cattle. Experiments in France have shown that 10 lbs. of these leaves are sufficient to kill a sheep.

Goatsrue, however, has some useful properties. It has even been advised as a forage crop, and is in fact cultivated for that purpose in some parts of Switzerland. If mown when still tender and allowed to wither slightly, it is agreeable to cattle and may be fed to them without danger.

The writer thinks that Goatsrue would do excellent service as green manure, especially for very light sandy soils, for which it would perhaps be better even than lupin. It only remains to ascertain whether turning in would suffice to destroy it. Goatsrue is plentifully provided with root tubers.

To control this weed, it must be mown at least three times a year, or turned in and a mixture of grass consisting principally of *Dactylis glomerata* and *Lolium italicum* sown on top. It would also be as well, for some time, to roll the grass-land thoroughly. In those parts where the plant specially abounds, clearing of the grass-land and conversion into arable land is advisable.—A. H. COCKAYNE in the *Journal of Agriculture*, Feb. 21, 1916.

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Irish Gardening

Contents

	PAGE		PAGE
Front Gardens	49	Vegetable Food	54
Herbaceous Borders (Illustrated)	51	Ammonium Sulphide Wash for American Gooseberry Mildew	54
Soil Cultivation	51	Correspondence	55
Food Production	52	Reviews	56
Notes—		Grafting Fruit Trees (Illustrated)	58
<i>Achillea ageratifolia</i>	52	Suburban and Allotment Gardens	59
<i>Primula denticulata</i> as a Cut Flower (Illustrated)	52	The Month's Work—	
<i>Campanula Portenschlagiana</i> (Illus.)	53	Midland and Northern Counties	61
<i>Saxifraga burseriana Magna</i>	53	Southern and Western Counties	62
Seed Sowing	53	The Sidalceas	64
Onion Sets	53		



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IRISH GARDENING

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EDITOR—J. W. BESANT.

Front Gardens.

How they may Look Well and add to the Food Supply.



ORDINARILY at least some attempt is made to beautify the front plot which is part of the amenities of most suburban houses. Some aspire to nothing more than a grass plot, but many more ambitious and often highly successful efforts are to be seen as one journeys through the suburbs of our large cities. It occurs to the writer that with an allotment situated probably at some considerable distance from his house, and more than likely largely devoted to potatoes, the tenant may add variety to his vegetable supply by using the front garden for other kinds requiring closer supervision.

There will be this advantage, that the ground has already been tilled, particularly if in the past it has been used for growing flowers. As a rule there is a border 2 or 3 feet wide under the windows, and probably a bed in the grass or borders flanking it. Quite a number of vegetables can be grown in such beds and borders with no other preparation than deep digging and levelling. It is a mistake to think that all vegetables require rich manure; to some it is positively detrimental. It is equally erroneous to think that crops of vegetables in healthy growth are necessarily prosaic-looking or ugly. Well grown, many of them are quite ornamental, and by choosing such kinds as have ornamental leaves, and which require to be left in the ground all summer, it should be quite possible to have the front garden comparatively gay, while also adding its quota to the food supply. Supposing we begin with the border under the windows. No better place could be found for growing Runner Beans, which will yield quite a large supply of succulent pods for use during late summer and autumn. If the soil be deeply dug now and left till the end of the month it

will be in good condition for seed sowing. Firm the soil by lightly treading it, and sow the seeds 9 inches apart and about 3 inches deep. As the seedlings grow they may be trained up strings attached by nails to the wall, allowing a length of 6 or 8 feet for each plant. All summer plenty of flowers will be produced, and there are many far less beautiful flowers highly praised. The pods may be used for cooking as soon as they are 6 inches or so long, and should be kept picked so that none is allowed to become old and develop seeds within. Thus the plants will go on producing flowers and pods till frost comes. In dry weather water copiously.

The next vegetable which occurs to us as suitable for the front garden is Beet. Freshly manured soil is not wanted, in fact it is highly detrimental to the long-rooted varieties. Most of the varieties have deep bronzy-red leaves, so beautiful that certain varieties are often used in flower gardening. There are also green-leaved varieties, and if novel effect is desired it might be an advantage to mix them. The seeds should not be sown before May. Meantime, dig the bed or border the full depth of the spade and have it ready for sowing next month. If the soil is rather shallow sow the Globe or Turnip-rooted variety, as it grows more on the surface. The seeds may be sown in lines or broadcast, and should be covered about an inch deep. When the seedlings are large enough to handle easily, thin out to a foot between each plant. To add to the effect an outer edging of parsley may be sown now, then by the time the beet has made some growth the parsley should be growing nicely. Beet has many uses in the house, being used in salads or dressed with vinegar, and eaten with cold meat. It may also be cooked whole and used as a vegetable without the addition of vinegar. It is highly nutritious, being rich in sugar. Parsley is not only useful

for garnishing, but is excellent as a flavouring to soups and stews. During the present crisis we have to make the best of everything.

Carrots, like Beet, prefer a soil which has been cultivated but which has not had manure recently. Sandy soil is preferable, but deep digging and thoroughly breaking up the lumps will do much to make soil fit. The carrot fly is frequently troublesome, causing serious blanks in the bed, but as a rule it is the early crops that suffer most. By deferring sowing the seeds

border of Carrots may have an edging of some favourite annual flower, such as *Nemophila*—a small packet of seed would suffice. A permanent edging might be formed by sowing a small packet of thyme seed, so that a "seasoning" herb would always be at hand.

Dwarf Curly Greens are by no means to be despised for decoration, and certainly no better winter vegetable could be desired, and being hardy and vigorous they will succeed nearly anywhere. Any front garden which has been



Photo by]

MIXED FLOWER BORDERS AT ST. ANNE'S

From a Painting by Miss Rose Barton.

[Mason, Dame St., Dublin.

till the middle of May this pest may be largely escaped.

Few people will deny the ornamental qualities of carrot leaves, in fact they have often been used as "green foliage" in arranging cut flowers. A bed of Carrots therefore may with all propriety adorn the front garden. Make the surface of the bed as fine as possible and sow the seeds in drills a foot apart and an inch deep. As soon as large enough thin the seedlings, but do it gradually, taking a few at a time till they are ultimately about 9 inches apart. Sow a variety of what is called the intermediate section. Again, if effect is desired, the bed or

fairly well cultivated in the past should grow this useful vegetable, and plants can be purchased very cheaply as a rule from local market gardeners, many of whom are already advertising Cabbage plants, &c. It will be time enough to plant in June, giving 2 feet between the plants. A few plants dotted through the other beds would all help to add to the winter supply.

We frequently hear of at least one difficulty which confronts the owner of a small garden, and that is the difficulty of purchasing seeds in small quantities. In the past several reliable firms have made a feature of supplying seeds in

penny packets, and they did very fine business. There are still cheap packets to be obtained from three halfpence upwards, and we would draw attention to the very complete and useful collections of vegetable seeds from 2s. 6d. upwards which are offered by advertisers in IRISH GARDENING. These generally will meet the requirements of any of our readers who wish to add to their food supply.

never seen a good one in any botanic garden at home or abroad.

Through the courtesy of Lady Ardilaun we are able to illustrate one of the beautiful borders at St. Anne's which, under the care of Mr. Andrew Campbell, are every year of surpassing beauty.

For comparison we publish an illustration of the herbaceous borders in the Botanic Gardens,



HERBACEOUS BORDERS.
Royal Botanic Gardens, Glasnevin.

Herbaceous Borders.

DURING the past autumn and winter it is probable that flower borders have received less attention than usual. The requirements of the kitchen are of paramount importance now, and for that reason much of our space is devoted to an attempt to help the less experienced to produce more food. However, a correspondent lately wrote that "a good mixed border is a far rarer thing than a good rock garden," and remarked: "Only once have I seen it at St. Anne's in Ireland, once in the late Frank Miles' garden at Bingham and often in Miss Jekyll's garden in Surrey." Later he says: "I have

Glasnevin. Sir Frederick Moore takes the keenest interest in displaying all the most beautiful hardy plants as well as those of botanical interest.

Visitors from all over Great Britain and Ireland frequently express their admiration for the hardy flower borders at Glasnevin.

Soil Cultivation.

HOING.

DIGGING and trenching are recognised methods of rendering soil productive, but the value of hoeing, or otherwise maintaining the surface of

the soil in a loose friable condition, is much less appreciated. Too often hoeing is delayed until weeds make their unwelcome appearance, and then very often the sole object in mind is the destruction of the weeds. Without doubt weeds are unprofitable and steal from the soil food which ought to be available for the cultivated crop. There is, however, much more in hoeing or otherwise loosening the surface soil than merely killing weeds. Everyone knows that most soils as they dry show cracks or openings all over the surface, and into those cracks the air penetrates at once in such volume that it dries out the soil to a considerable depth.

Further, when the soil is carrying a crop of plants of any kind their roots spread more or less through the soil, and consequently all roots which lie in the way of a crack become broken as the soil contracts. The ends of the roots, being thus exposed, are also liable to dry up, and the plants suffer seriously, and may get a fatal check. By keeping the surface soil constantly loose and friable to the depth of an inch or so the formation of cracks is prevented, and thus not only are weeds eliminated, but the soil is actually kept moist and at the same time sweetened by air, which, instead of pouring in through large spaces, is admitted uniformly over the ground through millions of tiny spaces between the particles of soil. Hoeing therefore conserves the moisture in the soil, and is far more beneficial in times of drought than artificial watering.

From now onwards many young crops will be coming through the soil, and all who are perhaps for the first time growing food are earnestly counselled to diligently hoe and loosen the soil between the rows. Never mind though no weeds are to be seen or though the soil looks loose enough, hoe it again whenever the soil is not too wet and as long as you can get to work between the plants. If you were short of manure in spring, you will find hoeing repeatedly as good as another ton of manure.

Food Production.

THE present is an opportune time to do something to stimulate effort in food production for the coming season, no matter how small each individual effort might be: every little helps. The February issue of IRISH GARDENING contains timely articles giving advice and helpful hints on this subject. Many of your readers will be in a position to help further by giving away to some less fortunate neighbour all surplus plants, such as celery, leeks, broccoli, Brussels sprouts, lettuce, savoy, &c. Many too

will have surplus vegetable seeds, and these can now be used to advantage instead of being laid by and ultimately consigned to the fire or dust-bin.

The labourers' cottage plots are fairly numerous now in most counties, but, compared with the English workingman's plot, show a low standard of cultivation. There is in this country a great lack of choice and varied vegetables. Here there is a field for improvement. Many would judge the labourer unworthy, yet he is deserving of every help, and it is surprising what a little sympathetic help may accomplish. A varied and extended supply of vegetables in the cottage plots at the present is a desideratum.

Belfast.

G. D.

Notes.

Achillea ageratifolia.

THIS is the plant which is sometimes listed in catalogues as *Anthemis Aizoon*. It is an extremely pretty plant with narrow, finely cut silvery leaves and bearing large terminal heads of white, daisy-like flowers. When in flower the total height is about 6 or 8 inches, and the effect of the silvery grey leaves and white flower heads is very charming. It is a S. European plant, and is figured in Sibthorp's "Flora Græca." A sunny, well-drained situation is very necessary in this country, otherwise our damp winters and cold springs are inclined to do it considerable damage. The flowers appear in July and make a lovely display. Propagation is effected by division of the roots in spring and by cuttings made from the side growths as they are produced in summer.

B.

Primula denticulata as a Cut Flower.

THIS, one of the earliest hardy Primroses to flower, is extremely useful for indoor decoration. Usually at its best during the latter half of March and in early April, it is this year, in common with other plants, rather later. Now, in the middle of March, the heads of flowers are just beginning to push up from among the rosettes of young leaves, but with the strengthening sun and fast lengthening days they will make rapid progress, and by the end of the month should be making a bright display.

Essentials in successful cultivation are rich soil, constant moisture and annual division after flowering. In the bog garden they flourish very

well if not subject to flooding in winter; in this event they are apt to rot in the centre. Given a retentive soil, however, which remains moist without being water-logged, they start away strongly every spring. The flowers should be cut before they are fully opened, and, arranged as shown in the illustration, they will continue in good condition for several weeks.

After flowering the plants should be lifted and divided into one or two rosettes, adding some well decayed manure to the soil when replanting. B.

Campanula Portenschlagiana.

THIS is one of the finest and most easily grown of all the dwarf Bell flowers. As our illustration shows, it makes a magnificent mass when allowed sufficient space to wander at will. On the rockery it can be relied on to establish itself freely, and will annually make a lovely display in June, and continues bearing flowers over a long season. It is not fastidious as to soil or position, flourishing in any decently cultivated medium without any elaborate preparation of grit, sand, &c., and it is equally happy whether planted in a flat pocket or wedged in between stones forming a wall face; and it flourishes in sun or shade, but does not suffer drought gladly. In fact it is so vigorous that care must be taken to plant where choice and less vigorous gems will not be lost in the fight for existence. The flowers are a pleasing shade of blue purple, borne so profusely as to almost smother the glossy dark green leaves.

Propagation is easily carried out by simply digging up a clump in spring and dividing the rhizomes into small pieces, replanting them in a nursery bed or potting up for future use.

B.

Saxifraga burseriana Magna.

THIS magnificent variety, though not so early flowering as the variety major, is superior in size of flower, and at Glasnevin seems to be much more satisfactory than the much-vaunted *S. hurs. Gloria*, which invariably produces a large proportion of deformed flowers.

The flowers of var. *magna* are quite as large as those of var. *Gloria*, pure white in colour, the petals broad and solid-looking.

A few plants are now flowering in the Alpine House, part of a stock originally presented to the Gardens by Mr. Murray Hornibrook, a great lover and successful grower of Saxifrages.

GLASNEVIN.

Seed Sowing.

DURING April, when most of the digging of plots has been finished and early potatoes planted, seeds of other vegetables will be sown in considerable quantity.

From what one hears of the immense demand for seed it would appear necessary to again warn people against sowing too thickly. This matter has already been alluded to in IRISH GARDENING, but the idea seems firmly rooted in the minds of the inexperienced that the more seed sown the better the crop. This idea is entirely wrong and cannot be too strongly condemned.

Onions, carrots, turnips and such small seeds should be sown as thinly as possible so as to have as little thinning out to do as possible. Onion seed is sometimes sown thickly for the purpose of using a large portion of the crop as "scallions," but, generally speaking, a very thin sowing will yield all the "scallions" an average family requires.

Peas will be close enough at three inches apart, making a double row; broad beans six inches; runner beans nine inches in a single row, and dwarf beans six inches.

Maincrop potatoes should not be less than thirty inches between the rows and fifteen inches between the sets. All the best and most experienced growers recommend plenty of light and air for potatoes, both early and late, and those who are planting now on new ground will find wide planting will give the best results.

GARDENER.

Onion Sets.

NEXT to potatoes and cabbages there are few more popular vegetables than onions. In a well cultivated garden there is not a great deal of difficulty in securing a good crop, given ordinary care in the preparation of the soil and in subsequent cultivation. In newly broken grass land, however, it is probable that onions from seeds might prove somewhat uncertain, and various pests of insect and fungus origin are apt to do grave injury to the crop, particularly if it is in anyway weak at first.

So useful a vegetable, however, is well worth attempting, and to those who are cultivating ground this year perhaps for the first time, and who have but a few spare hours to devote to it, we recommend planting onion sets in preference to sowing seeds. The advantage in using sets lies in the fact that one has a small onion to begin with, and they may be planted at once at the distance apart at which they are to remain, and consequently no further attention as regards thinning is required. Furthermore, being stronger from the beginning, they are less prone to attack from maggot and mildew, and therefore there is less likelihood of disappointment. Allotment holders will find these sets most useful, as they can be inserted in any odd corner, providing the soil has been well and deeply dug. Some manure would be an advantage, of course, but can be done without, as medium sized solid bulbs keep much better than large soft ones. The sets should be planted nine inches apart, merely press-

ing them into the soil till the top of the bulb is about level with the surface of the soil.

To further explain the meaning of "Onion Sets" we reproduce herewith an article which appeared in IRISH GARDENING of May last year:—

"A method of improving the size of onions by transplanting them was recommended by Worlidge so early as the beginning of the seventeenth century in his 'Systema Horticulturae,' and this practice has lately been revived with great success by some eminent horticulturists.

"The theory on which it is founded is extremely ingenious. Every plant which lives longer than one year generates the sap or vegetable blood, which will elaborate the leaves and roots of the succeeding spring.

"In bulbous roots this reserved sap is deposited in the bulb, which in a great measure composes it. Now, the store which is thus formed varies considerably in the same species of plant, according to the particular circumstances under which it is raised. Thus the onion in the south of Europe accumulates a much greater quantity in a single season under a greater degree and longer duration of heat than is afforded by our colder climates, and, therefore, it acquires in a given time a much larger size.

"McKnight was induced by those observations to suppose that two short and variable summers here might perhaps be equal in effect to one long and bright season in Portugal, and, accordingly, he attempted a method of culture which has proved his inference to be correct.

"In pursuance of this plan, seeds of the Portugal onion were sown in late spring very thickly on a poor soil and in a shady situation. Under these circumstances the bulb in the autumn had attained scarcely beyond the size of a large pea. The bulbs were then taken from the ground and preserved dry during the winter, and in the ensuing spring they were again planted at equal distances.

"From this treatment the bulblets (or sets) produced bulbs very superior to those raised immediately from seed, some exceeding 5 inches in diameter, and being more matured, remained sound throughout the winter with greater certainty than those raised from seed in a single season. . . ."—*Rhind's Vegetable Kingdom*.

"Sets" suitable for planting are now being offered by many seedsmen, and intending growers should obtain a supply and plant without delay.

GARDENER.

Vegetable Food.

SALADS.

SALADS in this country do not hold the same position in the housekeeping that they do abroad, where the mid-day meal would certainly not be considered complete unless some salad was served up. But it is quite possible that, with the duration of the war and the growing shortage of some food stuffs, that it will become a necessity to make use of all vegetables, cooked or in the raw state.

By the word salad far more is implied than merely chopped lettuce and a dressing. It includes many cold cooked vegetables, such as green peas, young broad beans, cauliflower,

French beans, potatoes, beetroot, salsify, as well as lettuce, mustard and cress, onion, chives, cucumber, tomato, radish, celery, watercress and parsley. Eggs, hard boiled, make an excellent addition, either in the dressing or chopped through the mixture.

Any broad beans used in salads should if possible be in a young state, as the outer coats get hard as they age. If they cannot be obtained young, the outer coats can be removed and the beans cut up.

Cauliflowers—it is best only to use the "flower" portion, and to break it into small pieces rather than chop it.

An excellent salad can be made with lettuce, mustard and cress or watercress, or all three mixed, and added to this any potatoes chopped small, cauliflower, peas and beans, chopped radishes, tomato, cucumber, and the usual seasonings of salt, pepper, parsley and onion. Chives being far stronger than onion should be served with the salad, but not mixed through it, and they look quite nice laid on the dish in small bunches. Other "trimmings" can also be added with sliced tomato, hard boiled egg, cucumber and parsley; potatoes, cauliflower and peas and beans are often over from a meal, and in this way may be utilised.

A winter salad can be made up of cold chopped potatoes, beet, celery, parsley, hard boiled egg, and cold cooked salsify, all chopped fine.

As for dressings, many people prefer to mix their own at table, and usually those who prefer to do so also prefer vinegar, oil with salt and pepper. Others prefer oil alone mixed with the salad.

Condensed milk makes a good foundation for a salad dressing. It contains sufficient sweetening not to require any addition of sugar. With it can be mixed a little mustard, pepper, salt, and if available the yolk of an egg. Where cream is procurable it is, of course, far nicer than the condensed milk in the dressing.

R. M. P.

Ammonium Sulphide Wash for American Gooseberry Mildew.

THE following note has been communicated to the Board by Dr. J. Vargas Eyre and Mr. E. S. Saboun, of the Research Department, South-Eastern Agricultural College, Wye, Kent:—An extensive series of experiments which was carried out during 1916, partly in the glasshouse and partly in the open, has again demonstrated the value of ammonium sulphide as a fungicide against "powdery-mildews" (erysiphaceae) in general and particularly the American Gooseberry Mildew. The details of these experiments show how completely the results of last year's spraying trials corroborate the results published by us in this Journal for February, 1916.

NECESSITY FOR USING SOAP.—It is desired, however, to emphasise once again the importance of using soap in this spray fluid. In order to ensure a satisfactory wetting of the mildew—without which it can be only partially effective—it is absolutely necessary to use the wash containing 0.5 per cent. of soft-soap even when soft

water is used in its preparation—*i.e.*, 5 lbs. of soft-soap per 100 gallons of wash.

NEW STOCK SOLUTION.—It is thought advisable, for practical reasons, to place on record now a new method of making this fungicide which makes it possible to prepare a more highly concentrated "stock solution" than the one previously described. After numerous preparations had been made, in which varying amounts of sulphur were dissolved and the fungicidal value of these several preparations had been ascertained by delicate biological tests, evidence was obtained that a stock solution of ammonium sulphide, prepared as described below, is as efficacious when diluted to 1 part in 100 parts as is the stock solution described last year when diluted to 1 part in 20 parts. Besides being more easily handled by reason of its more concentrated form, there is every reason to believe that when made according to the new formula, the ammonium sulphide wash will now be procurable on the market at a cheaper rate.

PREPARATION OF THE NEW STOCK SOLUTION.—The preparation of the new concentrated stock solution may be conveniently effected by saturating one-third of a gallon (1.53 litres) of aqueous ammonia of sp. gr. 0.895 at 16° C.—*i.e.*, 30 per cent.—with sulphuretted hydrogen gas until the sp. gr. of the liquid becomes equal to 1.075 and its volume 1.55 litres. It is then mixed with two-thirds of a gallon (3.06 litres) of 30 per cent. ammonia

solution, and to this mixture 2 lbs. 7 ozs. (1,101 grms.) of flowers of sulphur are added and dissolved by stirring. A moderately slow current of sulphuretted hydrogen gas is again passed through the clear solution until its sp. gr. becomes 1.085 at 16° C. Owing to the increase in the volume of the liquid which takes place during the preparation, more than 1 gal.—namely, slightly more than 5 litres of the concentrated stock solution—is finally obtained.

It will be obvious from the above description that the stock solution of ammonium sulphide is not one which can be prepared by the grower himself. Further, since this stock solution cannot in practice be tested by the grower, it should be purchased only from firms of repute who will vouch that it has been prepared according to the method described above.

DILUTION.—To prepare the diluted wash from the above stock solution, in the case where the water used is "soft," 5 lbs. of soft soap of a reliable brand should be dissolved in 99 gallons of water, and into this quantity of soap solution

1 gallon of the stock solution of ammonium sulphide should be mixed by stirring. In this manner 100 gallons of wash are prepared ready for use. In cases where the water used is "hard" a proportional increase must be made in the amount of soap used unless other means are adopted for softening the water.

With regard to the method of applying this wash and other details, also the relative values of ammonium sulphide and lime-sulphur, reference should be made to this Journal for February, 1916.—*The Journal of the Board of Agriculture.*

Correspondence.

TO THE EDITOR OF IRISH GARDENING.

SIR,—The winter which is now passing away appears to have been the most destructive to vegetation in Ireland which we have experienced since that of 1878–79. Judging from reports received from many parts of Ireland, the nature and extent of the damage done has been erratic and variable, which can to some extent be accounted for by the differences in the amounts of rainfall, and of frost, that is by the extent of the variation from the annual averages of the district. In the County Dublin the variation has been extreme. 1916 was the wettest year recorded for this district, the rainfall amounting to 40.88 inches. January, April and



Photo by]

PRIMULA DENTICULATA
Arranged in a bowl.

[S. Rose

July being the only comparatively dry months out of the twelve. It was also a very sunless year, so that vegetation was ill-prepared for the almost arctic conditions which prevailed for so long. As compared with the winter of 1878–79 some curious and interesting facts are noted. In that winter *Arbutus Unedo* and other species, *Myrtles*, *Aristotelia*, *Laurels*, *Portugal Laurels*, *Sweet Bay*, and *Laurestinus*, were very severely injured. This year they are comparatively uninjured. *Himalayan Rhododendrons*, such as *R. Thompsoni*, *R. grande*, *R. Falconeri*, *R. fulgeas*, also suffered severely; this year they have escaped. *Veronicas*, on the other hand, seem to have suffered more this winter. There are many interesting features. *Griselinia* has proved to be quite hardy. In *Pittosporums*, *P. Ralphi* and *P. tenuifolium* have not suffered much, but *P. Mayi* is completely defoliated. A plant which we had come to regard as comparatively hardy, *Myrtus Luna* (*Eugenia apiculata*), is injured, while *Tricuspidaria lanceolata* (*Crinodendron Hookerianum*) is fairly safe. *Grevillea rosmarinifolia* and *G. sulphurea* have

established their title as hardy plants, a fact forecasted several years ago by that excellent judge of the capabilities of plants, T. Smith, of Newry. Further we find that several species of Eucalyptus, such as *E. umigera*, *E. vernicosus*, *E. coccifera*, *E. pulverulenta*, and perhaps *E. McArthurii* and *E. cinerea*, can claim to be hardy and to be suitable plants for many districts in Ireland. Others, such as *E. punctatus*, *E. resinifera*, *E. Smithii*, are killed. *Ceanothus Veitchii* and *C. thyrsiflorus* have been badly injured. *C. rigidus* is quite safe, and about to flower. Many forms of *Phormium tenax*, New Zealand Flax, are seriously cut back, just as they were in 1878-79, while *Yuccas* and *Cordylines*, so badly injured in that year, have escaped this year. Conifers seem to have suffered very little. A few of the Mexican pines look unhappy, and *Cupressus torulosa*, *C. Benthami*, *C. Goveniana* look brown and rather dilapidated. *Pentstemon*s a miserable sight!

These are merely a few cases which suggest observation and enquiry. The full extent of the damage will not be apparent until the buds open in April, and I venture to appeal to your readers to make a list of the injured plants in their district during the period April 25th to May 5th, so that the lists may be made under approximately similar conditions, and to send these lists to the editor or to me. Such lists should indicate the extent of the damage, such as "slightly injured," "badly injured," "killed."

With such information a very instructive and useful report can be prepared, which will act as a guide for future plantings. We will learn which plants we can depend on for permanent effect, and which plants are to be avoided.—Yours truly,

F. W. MOORE.

Royal Botanic Gardens, Glasnevin.

TO THE EDITOR OF IRISH GARDENING.

SIR,—I visited Aldenham last Saturday with a view to ascertaining what was the extent of damage which we had sustained by the very severe weather last month, when the lowest temperature recorded was 29 degrees of frost. Unlike the cold spell in January, 1895, the last really hard winter before that of 1916-17, when our thermometer registered 30 degrees below zero, there was no snow to protect plants when things were at their worst. Nevertheless I am happy to report—though it is too early to pronounce definitely—that we have suffered much less on this occasion, whereas in 1895 we had every shrub of New Zealand origin (including such hardy subjects as *Veronica Traversi* and *Olearia Haasti*) and every standard Rose tree on the place killed stone dead. Now, outside genera like *Pittosporum* and *Eucalyptus*, which one would expect to be tender on a cold clay subsoil north of London, very few trees or shrubs seem to have been killed outright, though a great many have been badly scorched and have had their young wood killed. It would appear that whether a plant escaped scot free, or was badly disfigured, depended more on its location and aspect than on the particular type of plant, for I noticed that even a tender shrub such as *Rhamnus alaternus variegatus* when completely sheltered from the east was uninjured, while common Portugal laurels facing that point of the compass were in a lamentable state. The east wind which was so prevalent, and so greatly aggravated the disagree-

ableness of the cold snap, though not fatal to plant life, was very much so to foliage and appearance. One genus which seems to have come out worse than would have been expected is that of *Berberis*: *B. Darwinii* and its offspring, *B. stenophylla*, and the shrub known in gardens as *B. Wallichiana* (the true plant of this name is not in general cultivation) were much disfigured, and I observed a large plant of the new *B. levis*, which was certainly dead above ground level if not below. On the other hand *B. Fortunei*, an old introduction from China, which no one counts as hardy, escaped very lightly indeed. To me one of the most cheering features of my inspection was the highly successful way in which the plants introduced from China in recent years by Mr. Wilson have come through the ordeal, the only serious one that they have yet experienced in Europe. Not only have they shown themselves vastly more hardy than Forrest's introductions, but they have come out better than old stagers like *Berberis Darwinii* and other well-known plants. It is true that *Berberis levis* W. (above-mentioned) has proved rather a failure, and so also several of the *Viburnums*, such as *V. foetidum*, but I detected no other cripples, and can certify that *Berberis Sargentiana*, *Ribes laurifolium*, *Stranvassia undulata* and *Viburnum rhytidophyllum*, to mention a few out of many, have escaped quite unscathed. Seeing that by gift, sale, and exchange, I have probably done as much as anyone to spread the cultivation of Wilson's finds in these islands, to be able to give them this certificate of character is to me a source of much satisfaction.—Yours truly,

VICARY GIBBS.

7th March, 1917.

Reviews.

The Worker's Garden.*

THIS is one of the many books designed to help beginners, which have been published since the necessity for producing more food has given rise to the great increase of allotments. The writers, Mr. Gerald Butcher and Mr. Cyril Harding, have plenty of experience, and know just what the inexperienced require. The former is Superintendent and Instructor to The Vacant Land Cultivation Society, and the latter Secretary to the London Gardens Guild and British and Irish Gardeners' Association. The book which they have produced jointly deals briefly and to the point with soils, manures, insect and fungus pests, crops, rotation of crops; and includes fruits, flowers and vegetables. The advice on the whole is sound, as one would expect from two trained men, and if we have any fault to find it is in the number of crops dealt with. In our experience the simpler things which bulk largest are what most beginners want information about, together with such salads as can be grown in little space.

At page 25, dealing with kidney beans, it is surely a clerical error to recommend sowing the seeds four-fifths of an inch apart; better sow 3 inches apart and thin out to 6 inches.

* The Vacant Land Cultivation Society, 11 Buckingham St., Strand, London, W.C. Price 6d. net.

Vegetable Growing in War Time.*

By HERBERT COWLEY.

THE author has produced a very useful and readable little book, written in simple language, and giving as clearly as possible directions for cultivating and cropping a small garden or allotment. Unlike some writers Mr. Cowley has given most attention to the more important vegetables which yield the greatest bulk of food, and has

of the guild have joined the army, and some, alas! have made the great sacrifice. While the usual Kew items will be read eagerly, chief interest will centre in the numerous letters from old Kewites abroad and others in the fighting line. The sufferings of an interned Kewite will meet with ready sympathy. Particularly interesting is an account of a meeting of old Kew men in America and the formation of "The Association of Kew Men in America," which seems to have met with greater approval from the parent



Photo by

CAMPANULA PORTENSCHLAGIANA
In the Rock Garden, Ashbourne House, Glomthaune, Cork.

[Ernest Beckett]

avoided going into too great detail regarding what might be called luxury crops. This is exactly what we have advocated for some time. Simple, easily followed diagrams help to make the text clear to the novice, and we have every confidence in recommending this little volume to our readers.

society than did a similar attempt in Ireland some years ago.

The obituary notices are, alas! more numerous than usual. Four portraits are shown of young men who left Kew to join the forces and have given their lives for their country.

The text fittingly closes with several verses, of which we give the last two.

Journal of the Kew Guild.

THE 24th annual number of this interesting journal will be welcomed by hundreds of old Kew men at home and abroad. Since the publication of the last number a good many other members

IN MEMORIAM HOMINUM KEWENSIS.

And when, again, in happier times
The bluebell woods of Kew
In echoing chimes, peal far and wide,
Old friendship to renew—

And memory weaving threads of thought,
Her poignant message sends,
Let us, foregathered, in silence give
The toast of "Absent Friends."

H. H. Y.

* Price 6d. net, from *Country Life*, 20 Tavistock St., Covent Garden, London, W.C.

In My Half-acre Garden.

By EDWARD LOVETT.

THIS is a most interesting pamphlet, describing how the author has for twenty-eight years cultivated his garden and produced abundance of fruit and vegetables. His method of manuring is ingenious, and costs practically nothing.

It is not stated whether the pamphlet is for sale, but anyone interested might write to the author, at Outram Road, Croydon, who will doubtless afford all information.

Grafting Fruit Trees.

By PETER BROCK, Fairview, Enniskillen.

GRAFTING is an operation which consists in uniting a portion of a plant to another which will support it and furnish it with nutriment necessary for its growth. Where large quantities of nursery stock are produced, budding is the system generally adopted for rapid propagation, but where buds fail the stocks on which the failures occur may be grafted in spring. Apples and pears, which, for local reasons, do not succeed, may be re-grafted with varieties that are known to suit the soil and situation. If taken in time—*i.e.*, before the constitution of the tree has become a complete wreck—re-grafting with a variety that makes healthy growth and crops freely has generally a regenerating effect on the weakling. For example Cox's Orange and Early Victoria may be grafted with Bramley or Grenadier; both sorts thrive and crop freely in most places.

The best time to graft is when the sap begins to rise. Pears and plums come first. The latter are better budded, and are usually in the best condition in March. April is generally the month in which we find apples in the best condition, according as the season may be late or early. Make sure, however, not to operate till the sap begins to rise, which is easily ascertained by the swelling of the buds and the bark rising easily from the wood. Cut-back trees having been sometime previously cut down to within a few inches of the point intended to graft at, should be again cut at the desired point and the ends made smooth with a sharp knife.

There are various methods of grafting, some requiring more skill than others, but the simplest, and at the same time the most successful, are "splice," "whip and tongue," and "crown." The former are generally adopted for small stocks, and for large stocks, such as cut-back trees, the "crown" is the most successful, and is an expeditious way of converting undesirable sorts of apples and pears into a source of profit. In every kind of grafting it is essential that the two parts should be in close communication not by means of the epidermis or pith, but through the generating layers of inner bark, in the tissue of which the cambium forms. A perfect union is not effected except on this condition. The speedy cohesion of the parts depends on the skill of the operator in avoiding unnecessary wounds and making clean, straight cuts, and preserving them from the action of the atmosphere; in careful tying, and excluding the air from the parts to

be united. Always use a clean sharp knife, and on no account touch prepared cuts with the fingers.

THE SCION.—This is the portion which is grafted. Well ripened shoots of last year's growth, taken from healthy trees, are the most suitable. Very strong, or soft shoots, or un-ripened tops, should be avoided. Shoots required for scions should be removed from the trees during the dormant season, carefully labelled, and placed about half their length in damp soil in a cool, shady place till required. It is important that the scion should be in a dormant but plump condition at the time the sap begins to rise in the stock; scions showing signs of shrivelling should be rejected.

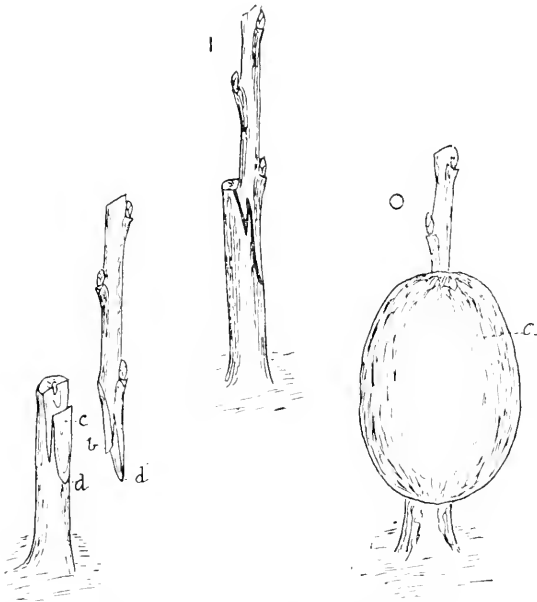
SPLICE GRAFTING.—This method is suitable where the stock and scion are of equal diameter. The stock and scion are cut with a long sloping or splice cut, perfectly smooth and even. The two parts are then fitted together as exactly as possible and bound with raffia or tape. The operation is completed by the application of grafting wax.

WHIP AND TONGUE GRAFTING.—This is the most popular method for stocks up to a half inch diameter. The scion is cut with a long sloping or splice cut, in this a notch is cut to rest on the end of the stock, and a tongue is then cut about two-thirds of its length. The stock is cut in the same way so as to have a tongue corresponding to that of the scion, which should fit into it accurately. The tongue of the scion is then inserted behind the tongue of the stock and the parts pressed into each other. Should the scion have a smaller diameter than the stock, it should be placed to one side of the cut, so that the bark of both stock and scion may meet on one side at least. In tying begin at the top and continue the bandage past the point of the scion.

CROWN GRAFTING.—This is the most popular method for large stocks or cut-back trees that require several grafts to cover the end of large limbs. Prepare the scion by first making a long sloping cut, then make a notch or shoulder to rest on the end of the stock as shown in illustration. This notch or shoulder is indispensable, as without it—although the scion would unite—it would not grow over and cover the end of the stock. In using slender scions, slit the bark through, making a perpendicular cut approximate to the depth the scion is to be inserted, then with a neatly trimmed wedge, not larger than the scion, open the bark near to the depth the scion will reach, and push it down till the shoulder of the scion rests on the end of the stock. With strong scions and pliable bark on the stock make a chisel-edge on the back of the scion, loosen the upper of the bark with the knife and push the scion down to the shoulder, which should be 2 to 2½ inches from the point of the scion. If grafting wax is at hand, with it close the opening in the bark and round the scion on the end of the stock. For tying grafts on large limbs the brown cocoa fibre cord is suitable, as it does not contract or expand with changes of the weather, yields to the swelling of the scions, and may be left on till autumn. After the grafts start growing freely they should be secured against breakage by wind with stakes tied to the stock. Most of the spray growth which pushes from the stock may be

allowed to grow the first summer for the purpose of fully maintaining root action in the stock till autumn, when it may be all cleared off, and the grafts being well established will utilise all the sap the following season.

Grafting wax is now becoming very popular



WHIP AND TONGUE GRAFTING.

Letters *b, c, d*, show method of inserting scion on stock. *a*—Method of putting on clay.

with amateurs, as it can be procured from seedsmen in tins at 6d. and 1s each, postage extra. It is now very rare to meet with anyone using the old-fashioned clay mixture, with which I have seen some very nice grafting done.

Suburban and Allotment Gardens.

GENERAL REMARKS.—As in many instances cultivation commenced very late, it is probable that much of the work recommended for last month has still to be done; this should be proceeded with first of all. There are few seeds amongst allotment holders' crops which cannot be sown in April with a fair amount of success, while potatoes planted during this month often bear better crops than those planted earlier. Would-be allotment holders need not be deterred from starting on new allotments even now, while those having useless grass patches in suburban gardens may still be in time with many crops; after all it is the vegetables in season from January to April which are of most value, because most expensive to buy. Amongst such might be mentioned:—Broccoli, late Brussels sprouts, Savoy cabbages, curly greens, leeks, July-sown turnips, and such stored vegetables as garden swede turnips, parsnips, beet, carrots, Jerusalem artichokes and onions.

SEED SOWING.—Make a sowing of cauliflower,

Savoy cabbage, broccoli, early greens and leeks on a well-prepared seed bed (made as suggested last month). These crops will require transplanting later from May onwards. They should provide a valuable lot of winter vegetables. Carrots should be sown early in the month. This crop should, where possible, be sown on ground which was well-matured last season. On new ground some manure will be necessary; this should be placed at least 8 inches deep in the soil, otherwise branched or forked roots will be the result, due to the growth of the rootlets in this moisture-holding material. The rows should be 12 inches apart, and the seeds should be sown thinly in drills (V-shaped tracks) at a depth of one inch, and then covered with soil which should be pressed gently upon the seeds. On shallow soils the drills might be raised above the ground level by drawing the soil so as to form parallel ridges about 12–15 inches apart. While on extra heavy soils it will pay to make special holes 2 feet deep and about 12 inches apart each way with a crowbar, then filling each hole with a prepared mixture finely sifted, using such materials as turfy soil, sand, wood ashes, and just a sprinkling of an artificial manure, such as Clay's fertiliser, using about a half pound to a cwt. of the mixture. (This crop is often attacked by maggots. This matter will be dealt with in the next issue.) A second sowing of peas should be made, using a variety such as Pilot or Gradus; then towards the end of the month make a first sowing of beet-root, using a globe-rooted kind, also of French and runner beans, but in the northern districts it will pay to wait until May for these crops. Parsley, scallions (small onions used green) and celery should be sown for pot-herbs. The former requires a well-drained soil, while the two latter will be benefited by the free use of well-rotted manure in the soil. Salad crops will be useful during the summer. To provide such, regular sowings of lettuce, radish, cress and mustard should be made. The soil should be well-matured for these crops at about 6 inches from the surface.

PLANTING.—Plant out at about 24 inches apart in the rows, and at least 18 inches between the plants, a further batch of cauliflower and cabbage plants, also a few red or pickling cabbage, Savoy cabbage, Brussels sprouts, &c. These crops revel in a richly-matured soil which has been well limed (keeping the manure about 6 inches deep. Plant out the main crop of potatoes as soon as possible.

THINNING.—As the various seedlings come above ground they should be thinned out to at least an inch apart at first (except in the case of mustard and cress, which are shorn off in the baby stages), and then eventually thinned so as to give each plant its required amount of space, which varies with the different crops. For carrots and early turnips the final distance will be about 6 inches, while the radishes may be left at 3 inches, being further thinned out as required for use.

HOEING.—The Dutch or push hoe should be constantly used as soon as the seedlings of various kinds came above ground. The soil should be loosened about an inch deep; hoeing prevents the rapid evaporation of water from the soil, allows the air to enter freely (air is necessary for the proper development of the roots of plants),

checks the development of weeds, and, consequently, benefits enormously the growth of the plants sown.

FLOWERS.—If the various herbaceous perennial flowering plants, such as Phlox and Michaelmas Daisies, have not been divided, this can still be done. In re-planting the outside parts of each clump give the best results as a general rule. A further sowing of hardy annuals can be made,

while in the sunny spots some of the more tender kinds, such as *Nemesia*, *Acroclium*, &c., might be sown. Plant out Sweet Pea seedlings on the ground previously prepared; these should be supported with beech or other tree twigs, and also protected from cold winds after planting. Roses, if not already pruned, should be pruned without delay.

W. H. J.

<i>North</i>	PLAN OF PLOT Size, 90 feet × 30 feet	Space for each row	Quantity of Seeds required	<i>South</i>
	Edging of Parsley	6 inches	$\frac{1}{2}$ oz.	
Potatoes	2 Rows Potatoes, " Midlothian Early "	2 feet	$\frac{3}{4}$ stone	* Savoy Cabbages
	2 Rows Potatoes, " May Queen "	2 feet	$\frac{3}{4}$ stone	* Late Cauliflower
	1 Rows Potatoes, " British Queen "	2 feet 2 feet 2 feet	1 $\frac{1}{2}$ stone	* Curley Greens and Transplanted Leeks, also an early variety of Turnips, sown in July, for Winter use
	6 Rows Potatoes, " Factor," " Glenview Seedling " or " Arran Chief "	2 feet 2 feet 2 feet 2 feet 2 feet	2 $\frac{1}{4}$ stone	Cabbages for Spring use
	† 1 Row Dwarf Peas, " Little Marvel "	3 feet	$\frac{1}{2}$ pint	Broccoli
	1 Rows of Early Cabbages (Pamphrey)	2 feet	100 plants	Potherb Celery, Leeks, &c.
Cabbage Family	" Flower of Spring," " Ellam's Early," &c.	2 feet	50 plants	Winter Lettuce
	2 Rows of Cauliflowers, " Early London "	2 feet 2 feet		
	1 Rows of Brussels Sprouts, " Solidity "	2 feet 2 feet	100 plants	
	3 Rows of Drumhead Savoys	2 feet	70 plants	
	6 Red Cabbage Plants with these	2 feet 2 feet	6 plants	
	† 1 Row of Tall Peas, " Alderman "	3 feet	$\frac{1}{2}$ pint	Broccoli
Root and Miscellaneous Crops	2 Rows of Carrots, " St. Valery "	1 foot	$\frac{1}{2}$ oz.	
	2 Rows of Carrots, " Intermediate "	1 foot	$\frac{1}{2}$ oz.	
	† French Beans, " Canadian Wonder "	3 feet	$\frac{1}{2}$ pint	Broccoli
	Turnip, " Early Snowball "	1ft. 6in.	$\frac{1}{4}$ oz.	
	Turnip, Garden Swede	1ft. 6in.	$\frac{1}{4}$ oz.	
	2 Rows Onions, " Ailsa Craig "	1ft. 6in.	$\frac{1}{2}$ oz.	
	2 Rows Parsnips, " Student "	1ft. 6in.	$\frac{1}{2}$ oz.	
	2 Rows Beet	1ft. 6in.	1 oz.	
	(Celery Ridge) Radish	1ft. 6in.	$\frac{1}{4}$ oz.	
	Trench of Celery (double row)	1ft. 6in.	60 plants	
(Celery Ridge) Lettuce	1ft. 6in.	$\frac{1}{4}$ oz.		
Seed Bed for Cabbages, Leeks, Celery, Scallions, &c.	3 feet	$\frac{1}{4}$ oz. each of different varieties		
	Flower Border	3 feet		

N.B.—Quantities of seeds and numbers of plants required are slightly in excess of actual need to allow for bad plants, &c.

* $\frac{1}{4}$ oz. each of Broccoli seeds, &c., will give more than ample supplies of these winter vegetables

† Actual space occupied by the Pea or Bean trench is about 12 inches, the other 2 feet is necessary for a walking and picking space.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill,
Shane's Castle, Antrim.

KITCHEN GARDEN.

MARCH is always a cold, treacherous month, and this season the frost has been extra severe. In the North generally there will be a great scarcity of greens and early Cabbage plants. The most of the autumn-sown plants are killed by the frost, except in gardens where there is good shelter from the N.E. winds.

GENERAL WORK.—The past few days the work has been proceeding very satisfactorily as regards manuring, digging and general tidying up, but the soil has never been in a very satisfactory condition for seed sowing. Having everything ready (I am writing on the 17th) we will take the first opportunity of getting in the Parsnips, Onions and Brassicas as advised in last month's calendar. Weeds will begin to appear, so that the scuffle will have to be kept going at every favourable opportunity: as well as preventing the growth of weeds it keeps the crop moving and the soil in a healthy condition, and also prevents evaporation. Stimulate crops of Cabbages with a pinch of nitrate of soda. Clear away the stumps of cut Broccoli and exhausted Brussels Sprouts, &c., and prepare ground for later sowings of Peas and Beans. If ground is selected for the Celery crop prepare trenches, and the space between the trenches can be utilised for pricking out Lettuces or sowings of Radish or summer Spinach.

SEEDS.—Make a good sowing of Snowball turnip, also, at regular intervals, make sowings of Cos and Cabbage Lettuce, *Successional sowing of Peas and Broad Beans.*—My method with Peas is, as soon as the previous sowing is one inch over the ground sow again (that is, of course, sowing the proper varieties in turn), and so on till the end of May. Make another sowing of Cabbage and Broccoli also Drumhead Savoys and Curly Kale: these ought to be got in about the latter end of the month. *Carrots, Salsify and Scorzonera.*—The main crop of these vegetables must be sown as soon as possible: an open situation is preferable and deep soil, which should not be newly manured. Fork a good dusting of wood ashes and soot into the surface, tread over, and rake the whole level, then draw the drills one foot apart, and sow thinly. Where ground has been found unsatisfactory for Carrots I have seen fair crops grown on raised drills sown thinly and not thinned out, for it is after the thinning process that the Carrot fly attacks the crop: a dusting of vapourite between the rows and scuffled in is a good preventative. Salsify and Scorzonera are grown in the same way as the Carrots, and are most useful vegetables, and a nice change for the table.

GLOBE ARTICHOKEs—Plant suckers on well prepared and well manured land; allow three feet

between the rows and three feet from plant to plant, planting alternately: these, if well attended to, give a supply in autumn: old stools should be well thinned: this crop likes a shaded moist situation.

FRENCH BEANS in pots showing flowers or pods should get a liberal supply of weak liquid manure, and also keep the syringe going to keep down red spider. A small sowing about the end of the month, according to the weather, should be made on a sunny border (*Ne Plus Ultra* or *Osbourne's Early Forcing*), and at the same time a sowing might be made in small pots or boxes in a frame to plant out in case of failure in the outdoor sowing.

SPINACH.—Make at least two sowings of summer Spinach during this month, as it very soon runs to seed if the weather is at all dry. Spinach Beet is very valuable where Spinach is in big demand, as it is always in use through the autumn, winter and spring. Sow this month and it can be thinned and transplanted in quantity, according to the demand, in lines 15 inches apart and 12 inches from plant to plant.

POTATOES.—Plant the maincrop as early in the month as ground and weather permit. Allow more space between the drills for late Potatoes (nothing is gained by narrow drills): 28 to 30 inches is about right. In old garden soils, where Potatoes have been regularly grown, give a good dressing of warm lime, scattering it up the drills on top of the manure just before dropping the tubers: this will be found not only to benefit the crops, but also to improve the quality of the Potatoes. If the ground has been previously dug and manured, open a trench alongside of the line, 1 inch deep, with the spade and scatter it back over the plot, then dust the lime in the track, set the tuber, change the line to the next row and take out the second track and cover the first with it, and so on till the plot is finished—that is, putting Potatoes in on the level and it is a much better way than using a dibble, for although it is more trouble it will pay in the end. The favourite varieties in the North are *Up-to-Date* and *Windsor Castle*.

ASPARAGUS.—New plantations should be made towards the end of the month, when growth is well started. Choose a nice, moist day, take out a good sized hole for each plant and spread the roots out horizontally, leaving the crown of the plant about one inch under the surface of the soil. Asparagus beds ought to be thoroughly made, as they are meant to last for a good number of years. Trench 2 to 3 feet deep, mixing the soil well with rotten manure: seaweed is an ideal manure for Asparagus. Give old beds a good dressing of salt at this time.

HERBS.—As these are to be grown in large quantities in some places, sowings of most kinds should be made this month. Sow Parsley, giving the bed a good layer of soot: rake it in, tread the ground firm, and sow in rows 1 foot apart.

VEGETABLE MARROWS should be sown in pots plunged into bottom heat and gradually hardened off to be ready for planting in permanent quarters in May. The sooner you can get out the Marrows

the more fruit you will get before the plant is cut down with frost.

ONIONS sown in boxes can be planted out when large enough to handle—say six inches high—in well prepared ground. Plant with trowel or take out a notch with the spade and let the rootlets straight down. A good dusting of lime and soot should be forked into ground before planting.

CAULIFLOWERS wintered in cold frames may be planted out into permanent quarters in good, rich, well filled soil; draw tracks 18 inches apart, withdraw hoe, and plant in the tracks, which give shelter from the wind, and the soil can be scuffled level when they begin to grow. Give a good dusting of lime occasionally to prevent the ravages of slugs, who dearly love a young cauliflower.

SEAKALE.—Plant in lines 18 inches apart and one foot from plant to plant. Cover the sets with a handful of coal ashes. Each set will send up several heads, which reduce to one, of course choosing the best.

HOTBEDS.—Many will require these for the culture of Cucumbers and Melons. Stable manure and fresh leaves should be got together for that purpose. To make hotbeds properly is an art in itself; they are nearly always put in too quick; they ought to be mixed thoroughly and put in a heap to ferment and turned again before they are ready to be put into the frame or bed. A well made bed should retain its heat for at least three months.

FRUIT GARDEN.

The grafting of fruit trees may now be proceeded with. Start with Pears and Plums, as the sap rises much earlier in these than in Apples. The Apples may be done any time during the month. The study of this particular branch of horticulture is very fascinating, and the many advantages proved to result from the sensible use of grafting are numerous. Sometimes old trees that bear useless bad fruit can be made into useful trees in a short time if 20 or 50 scions are grafted thereon. I think, of the three forms of grafting old trees (that is, when the stock is much thicker than the scion), cleft, rind and notch, the later is the simplest and usually the most effective. The form of grafting used where the stock and scion are equal dimensions is whip or tongue graft, e.g. Grafting clay, to cover the union of graft and stock to exclude air, is made of clay and manure mixed well together, or grafting wax is sold for the same purpose.

GENERAL WORK.—If weather remains favourable keep the Scuffle or Boco Cultivator going, even though there are no weeds showing amongst the fruit borders; it will repay you by the general appearance of the place and also benefit the crop, as ground round fruit trees is inclined to crack in dry weather if not kept constantly stirred. Water fruit trees on south walls if weather continues dry. Clean and scuffle Strawberry plots, if not already done, and put a layer of straw manure up between and around plants, so that the nutritious value will be washed in, leaving it nice and clean for the fruit to ripen on.

FLOWER GARDEN.

Spring bedding will soon be at its best, so that the garden will begin to be a great source of pleasure. Any staking required for Hyacinths should be attended too and the beds kept as tidy as possible.

LAWNS should have been thoroughly swept and rolled, so that the mowing machines will have a clean run. It is a mistake to delay too long in mowing, as the grass begins to grow quickly towards the later end of the month. Any bare patches or the sowing down of new lawns should be done. One pound of good lawn grass seed, from a reliable firm, per 20 square yards is the quantity for a new lawn. If birds are numerous, a dusting of soot and lime will keep them off.

SHRUBS.—Planting of Conifers and the usual selection of Evergreens should be finished off at once; but Hollies transplant better towards the later end of April, choosing nice moist weather. Large specimens may be shifted without much risk, provided care is taken to preserve a large ball of soil about the roots and a good watering is given and the plant properly staked.

PANSIES AND VIOLAS.—Few flowers are more general favourites, and rightly so, for they are easily grown, and are sure to give great satisfaction wherever they are planted—either as a ground work amongst Roses or through a bed of Zonals, or they do themselves credit in a bed or border alone. It is better to have them planted in their permanent quarters before the soil and sun gets too hot for them, but when established they can stand any amount of that.

SWEET VIOLETS.—When finished blooming, either the end of the month or beginning of May, the runners may be raised and the strongest planted, either in raised beds or in rows in well filled and manured soil. Water regularly to keep them from flagging. Runners that appear during the summer should be pinched off.

Half-hardy annuals that were sown in heat will be ready for pricking out. Out-door Chrysanthemums, Pentstemons and Calceolarias, if summer quarters are not ready for them, ought to be pinched and transplanted into a frame or sheltered border, where they can get slight protection if needed. Continue digging herbaceous borders if not completed. There is nice growth showing on Delphiniums and Pyrethrums. A careful watch should be kept for snails and slugs.

The Rock Garden is becoming interesting now. Care should be taken to keep down weeds, and the soil should be stirred between the plants. Finish off Hybrid Tea Roses and give beds a feeding and general tidying up.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Barrymore, Fota.

THE KITCHEN GARDEN.

THE first half of the month of March has, unfortunately, been all against any attempts to bring up arrears in the Kitchen Garden as regards the working of the land—at least in this locality. Heavy rains, alternated with frosts, and on the

morning of the 9th the remains of a snowstorm, have all tended to keep the soil in a sodden condition, and, with the exception of the planting of a few early Potatoes, little has been done. Still in our variable climate a change is soon effected, and at the first opportunity loosen the surface to facilitate drying and to provide a good seed bed.

EARLY POTATOES.—Those growing in frames must not be coddled too much or weak growth will result, therefore air freely on all possible occasions: increased ventilation may be afforded by blocking the lights up sideways. On mild days the lights may be removed entirely, but this must be a matter of judgment. When the stalks require supporting instead of moulding up, as practised out of doors, soil of a fairly light nature, or even leaf-mould, should be placed around the plants, and if the soil in the frames is at all dry water well before adding the new compost. Especially round the edges of the frames the soil is apt to get very dry, and a thorough soaking should be given when the day is mild, and a sprinkling of an approved fertilizer washed in. Protection must be afforded from frosts, and especially when the growth is nearing the glass, as then the slightest touch on the glass will cause damage and disfiguration. Those growing out of doors should be hood through as soon as their whereabouts are discerned. This not only promotes a good growth, but also keeps down weeds and brings the soil into fine order for moulding up later on. Earthing should not be hurried, as it only tends to force the growth, but if a frost is suspected a little soil may be drawn up to the plants to shade them from the slanting sun's rays, which cause the damage, such shade is afforded by an occasional row of staked peas, or in the case of a small area the growth, if frosted, may be syringed with the coldest water obtainable, or the frost lightly brushed off the leaves.

RUNNER BEANS.—Why the dwarf French Beans should be more greatly appreciated in this neighbourhood I am at a loss to understand, because for cropping and flavour, in my opinion, the former is easily first. During the present month seed may be sown in boxes or four inch pots and raised quite coolly for planting out next month. This is preferable to sowing out of doors, as having good strong plants for putting out ensures an earlier crop and reduces losses to a minimum, and is in reality very little more trouble. In the meantime, if not already done, prepare the site for planting by taking out a trench at least a foot wide and the same in depth, and well break up the bottom, then add a liberal quantity of well-decayed farmyard manure and return most of the soil on top, leaving a slight depression, which will enable copious supplies of water to be more easily soaked up, if necessary, later on.

DWARF BEANS.—For the earliest batch out of doors, select a sheltered spot, and on well worked and enriched ground draw wide drills, at least two feet apart, and sow a double line six inches apart, or the seeds may be dibbled into the ground two inches deep. From the middle to the end of the month, according to locality, will be soon enough.

CARROTS—This is probably one of the most treacherous crops to grow as far as the main-

crop is concerned, and to see the plants wilt from the ravages of the carrot fly when they look most promising is most disheartening, and in localities where this is the case reliance has to be made on successional sowings of the stump-rooted varieties which, singularly, are usually immune. I was once told, and with I believe a great amount of truth, that the later the sowing of the maincrop can be deferred the better and the greater the chances of success. I think the early part of May as good as any.

CELERY.—Sow seed for the maincrop and late supplies, and encourage a free growth at all stages.

ONIONS.—The spring sown plants under glass usually require planting this month. Break down the surface and consolidate as advised last month for the autumn sown ones. Plant in lines fifteen inches apart and from three to six inches between each. The greater the distance the larger will be the resulting bulb. Before planting, thoroughly harden off, and leave the boxes of plants on the ground they are to occupy for a few nights to ensure them being so.

ASPARAGUS.—Towards the end of the month the beds will commence to give their annual return, and a dressing of salt will prove beneficial, as will also a light sprinkling of nitrate of soda but the latter should be applied only when the weather is warm, as it lowers the temperature of the soil. Seed may be sown this month, and the method of sowing in pots is a good one, as practised at Aldenham. Sow two or three seeds in three inch pots and raise in a cold frame, and thin out to one plant. During their season of growth encourage the young plants by careful attention to watering, &c. At the close of growth and on the approach of winter plunge in coal ashes, and the following April good plants are available for planting in beds.

VEGETABLE MARROWS.—If the young plants can have the protection of a portable frame or hand light, sow a few seeds at once and raise in a warm house. Frames now containing early Potatoes may be planted with Marrow as soon as the young Potatoes are dug, and when all danger of frost is past the frame may be removed entirely.

PEAS.—When staking, allow a little extra length in the supports, as, for instance, a variety scheduled to grow three feet and a half will probably grow nearly five feet. If the sticks are sufficiently long thrust them well into the ground on the slant, as this will economise, and before staking, especially if the plants are fairly long, draw a little soil on either side to them. For appearance sake the tops of the rows may be cut off with a pair of shears and the twiggy pieces stuck in the bottom for early support. Sow second early and maincrop varieties for succession.

LETTUCE.—Sow little and often for successional plantings, and plant out seedlings raised in heat, and since thoroughly hardened off. Hoe freely between the plants that have stood the winter and, if necessary, hasten growth with a little nitrate of soda. Protect seedling plants from slugs by dusting with soot or lime.

TURNIPS.—Make further sowings of Turnip and attend to the thinning of earliest sown: on

good ground these need not be thinned too severely.

BEEFROOT.—For earliest use sow the Egyptian or Globe Beet in drills a foot apart.

TOMATOES.—Pot on seedlings as becomes necessary and plant out for fruiting in beds or boxes filled partly with good fibrous loam to which has been added a dusting of bone meal and a four-inch potful of basic slag to each barrow load of soil, but no quick-acting manure should be applied until the first truss of fruit commences to swell. Plants that have become leggy may, when planting, be laid down and the lower portion of the stem covered, so as to bring the first truss nearer to the ground. The earliest blossoms sometimes set very irregularly, and generally need tapping or lightly syringing about middle day. Give air to the structure whenever possible, and if in pots water carefully. Any vacant wall spaces in peach houses or vineries cannot be utilised with a much more profitable crop. Keep the side growths removed before they become too large, but not just at planting or potting to further check them.

CAULIFLOWERS.—Towards the end of the month plant out those wintered in frames or sown early under glass and subsequently pricked out and hardened off. Less room will be needed for these—fifteen inches between the plants and two feet between the rows. If pigeons are troublesome protect with netting. The ground for these should be done well with manure, and choose a sheltered site. Prick out into cold frames late sowings, as the rough leaf is being formed.

HARDY FRUIT GARDEN.

Pears and Plums will be flowering this month, and those, especially on east or south-eastern aspects, may be protected by means of light tiffany blinds or a couple of thicknesses of netting, such as is used for protection against birds. If blinds are used means should be adopted so that they can be removed to allow bees to visit the trees during the day. Peaches and Nectarines must be closely watched as the growths develop, and if aphid attacks them syringe on a mild day immediately after dinner with quassia. Disbudding will have to be carried out gradually, first removing badly placed shoots and a few others where thickest. I always like to leave two good shoots as near the base of last season's growth as possible, one on the upper side and one on the lower, and when making the first tie, when about six inches or so of growth is made, if the upper growth is safely secured, I remove the lower, or in the event of a mishap to the first retain the lower. On a last season's growth exceeding a foot in length I usually leave an intermediate growth as well as the terminal, but over-crowding should be strictly avoided. Disbudding near the base of the tree must be carefully done, otherwise bare space will result. The top of a tree can always be filled, but not the bottom. See that the trees do not suffer from dryness at the root, and syringe daily, if possible, using one's own judgment, according to the weather and time of day, and only, of course, when the young fruits are well set and about to remove the flowers. Do not thin too early, excepting twin fruits and others badly placed. Prune newly planted Apples and other fruits, to induce a free growth

necessary to lay the foundation to a good tree, and mulch the surface soil.

FLOWER GARDEN.

Hardy Annuals will be sown out of doors this month. If for filling gaps in the herbaceous borders first break up the surface and make a fine tilth, and sow thinly and cover with a little finely prepared soil, and mark with a stick. In such positions allow the young plants to grow in irregular shapes, so that one family verges into the other.

Dahlias that have wintered in the ground will need examination, as most likely they have suffered to some extent from the frost. Old clumps may be divided and replanted after well working and liberally treating the ground to manure.

Cuttings of border Chrysanthemums that have been propagated should be hardened well off before planting either in a break by themselves or cutting or in the borders. Bare patches on lawns may be sown this month, and if the seed is first dressed with Hortico no loss may be feared from seed eating birds, such as chaffinches. Shrubs that flower on the previous season's growth, as example, Forsythias—should receive any pruning that is desirable immediately on passing out of flower.

The Sidalceas.

COMMONLY called Greek Mallows, the Sidalceas include among their number some of the showiest summer and autumn flowering herbaceous plants.

Belonging to the same family as the Hollyhock, the flowers are somewhat similar to the single form of that popular flower, but much smaller, and the plants never attain the height of the Hollyhock. It is essential that the soil for Sidalceas should be rich and moist. In dry ground they fail to flourish, and rarely last more than a season. Given, however, the proper conditions they will continue to flourish for years, though it is a good plan to sow a few seeds occasionally, as young plants produce the finest spikes of flower.

As border plants the Sidalceas are admirable, forming very effective colour groups in good soil, but it is in the bog garden or near the waters edge that they reach the highest stage of perfection. There they will reach a height of from 4 to 5 feet, producing long, handsome spikes. Flowering with the Astilbes and Spreas and long after them, they contribute in no small way to the beauty of the bog garden and water-side.

Sidalcea candida, probably the best known species, is a plant of great beauty, producing handsome spikes of pure white flowers. *S. Listeri*, a plant of garden origin, has prettily fringed rosy pink flowers, and makes a most effective group.

S. malvaeflora, a species with rosy purple flowers, is itself distinct and beautiful, and has produced numerous varieties of even greater beauty: chief among these are *atropurpurea*, with darker flowers; *Mariana*, with rosy crimson flowers; *Oregona*, rose pink, and *Rosy Gem*, now a very popular variety, with rosy pink flowers in strong handsome spikes.

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Contents

	PAGE		PAGE
Spraying Potatoes	65	Sclerotinia Diseases	74
Dwarf Achilleas (Illustrated)	66	Suburban and Allotment Gardens	75
A Few Succession Crops for Allotments	67	Scarlet Runners	76
Brussels Sprouts	68	Garden Pests	76
Tomatoes out of Doors	69	The Month's Work—	
Notes (Illustrated)	70	Midland and Northern Counties	77
Correspondence	72	Southern and Western Counties	78
Reviews	73	Calendar of Cultural Operations	80
Plants and the Winter (Illustrated)	73		



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IRISH GARDENING

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EDITOR—J. W. BESANT.

Spraying Potatoes.

BY this time the bulk of Potatoes, early and late, will be planted, and some amount of speculation will be rife as to the subsequent crop. Much, of course, will depend on how the preparatory work was

done, but a great deal more can be done to ensure a satisfactory return for the labour and money expended in preparing the ground and purchasing seed. A

walk round several large allotment areas to the north of Dublin, on Easter Monday, disclosed a busy scene. Hundreds of men and youths, and some ladies, were busy digging or marking out "ridges" and planting Potatoes despite the almost arctic weather conditions. By far the largest

area under cultivation is devoted to Potatoes, and it occurred to the writer that if the ensuing season should prove a bad one for disease, or as it is more commonly called "blight," there will be widespread and poignant disappointment, and probably in some cases discouragement from further effort.

Now, practical and scientific men have been working for years in trying to produce disease-resisting varieties and also in devising means for combating the fell ravages of "blight." Of disease-resisting varieties we need say little, seeing

the choice this season has been limited and people had to take what they could get.

It is a well established fact, however, that spraying is undoubtedly of the greatest value in reducing disease to a minimum. otherwise large market growers, who have to depend for a living on the crops they produce, would waste neither time nor money on it. There are, of course, those who aver that spraying is not

worth the trouble, but the number of farmers and gardeners holding this view is diminishing annually. A great deal of money has been expended by the State and other bodies in experimenting with a view to determining the value or otherwise of spraying, and the results generally are markedly in favour of this item in cultivation.



ACHILLEA AGERATIFOLIA.

In these pages we have tried to urge the folly of close planting, but fear from our own observations that many are still imbued with the idea of getting in as much "seed" as possible in the smallest area. Six inches between the "sets" would not be less than we have seen some planted, and what this means when a tangled mass of shoots grow into each other can only be imagined by experienced cultivators. In such cases disease will run riot unless efficient means be taken to prevent it. Under the circumstances there is only one hope, and that is, spraying.

We do not suppose that many individual allotment holders will care to purchase the materials and act alone; in fact, the cost of the necessary ingredients is now so high that it would hardly be worth while. At the present time, however, there are many colonies of plot holders, varying in number from 20 to 200 or more, and in their case combination and co-operation will solve the difficulty.

Let each colony at once elect a small committee to find out the quantity of material required to spray all the Potatoes in the plots, and having done so immediately get an estimate from a seedsman or horticultural chemist for the supply. This will show at once the cost per head, according to the area each has to spray. Allowance must also be made for the hire of spraying apparatus, and possibly for men to do the work and supervise the proper mixing of the ingredients.

These are details which can be arranged between now and the end of June or early July, when the first spraying is usually done. The important point is that if plot holders seriously think of spraying they must set about securing the materials now.

The standard spray fluid for Potatoes is Bordeaux Mixture, composed of Sulphate of Copper and lime mixed in water.

The ordinary formula is Sulphate of Copper (98%) 12 lbs., Quicklime 6 lbs. to 100 gals. of water. From 120 to 130 gals. may be applied per acre.

A further point in cultivation, which is helpful in combating disease, is to see that the Potatoes are thoroughly "earthed up" or "landed," as the thicker layer of soil about them the less chance there is of spores, dropping from the leaves, reaching the tubers.

Dwarf Achilleas.

AMONG the many plants which we grow on our rock gardens none are prettier or more interesting than the Dwarf Achilleas or Milfoils, as they are sometimes called. The genus as a whole includes many species very dissimilar in height and habit, varying from the low-growing gems of the hills to the giant *A. Filipendulina* of the Caucasus region, and which in our herbaceous borders rises to a height of 5 or 6 feet. The dwarf species are most numerous, some having green leaves and others foliage of silvery whiteness. It is somewhat to be feared that there is considerable confusion in the naming of many of the dwarf species in cultivation, and in the absence of reliable specimens for comparison

accurate identification is a matter of some difficulty.

Cultivation on the whole is not difficult, except that some of the silvery-leaved species are impatient of winter dampness, and should have positions selected accordingly. They flourish very well as wall plants, where the shoots can hang down away from the soaking soil while the roots can penetrate deeply into the soil behind. When grown on flat pockets plenty of sharp grit should be scattered under the branches as a protection from the damp surface.

Propagation presents no difficulty, as cuttings of most strike easily, while several species produce good seeds occasionally, but not abundantly, every year. In wet seasons the flower heads seem to rot before seeds can mature.

Among the many known in gardens the following can be recommended as worth growing:—

A. ageratifolia, described in the last issue of IRISH GARDENING and illustrated in the present number.

A. atrata, a green-leaved species, bearing white flower heads in late summer.

A. Clavennæ, a very pretty plant with silvery-white leaves produced from short firm stems and bearing white flower heads in early summer.

A. compacta, an eastern species, with much divided silvery leaves and white flowers.

A. Herba-rotæ, native of Central Europe, having green, toothed leaves, and bearing white flower heads in early summer.

A. Huteri, found in Switzerland, and another of the silvery-leaved species with white flower heads.

A. + Jaborneggii, said to be a hybrid between *A. Clavennæ* and *A. moschata*; foliage interesting, but in the writer's experience a shy flowerer.

A. moschata, from Italy, and bearing green, deeply toothed leaves and heads of white flowers.

A. nana, with pinnate, green leaves and white flower heads.

A. rupestris, in the writer's opinion the best of all the green-leaved species, producing abundance of white flowers in early summer.

A. serbica, one of the best of the silvery species, with tufts of narrow leaves and fine white flower heads.

A. tomentosa, one of the best known, producing a dense mat of finely-cut green leaves, surmounted in summer by many fine rich yellow flower heads.

A. umbellata, a Grecian species, with beautiful silvery, lobed leaves and umbels of white flower heads.

A Few Succession Crops for Allotments

No doubt, most intending vegetable growers have secured their allotments, and have already spent many strenuous hours with spade and fork getting the ground into good condition for sowing and planting, also every one will by now have decided what crops they will put into the ground to produce the earlier supplies, so that any remarks on ground preparation or early vegetables would now be too late, but a few hints on some succession crops suitable for allotments, which will extend the vegetable season for as long a period as possible, may be of interest, and it is by succession crops and endeavouring to take two crops off as much of the ground as possible that the full returns of the initial labour and cost may be obtained.

The aim of all, no doubt, this year will be to obtain a few Potatoes as early as possible, and a few lines of some early variety will have been planted. These will be ready to lift by the middle or end of June at latest. As they will not have to be kept for any length of time, it is advisable to lift the whole crop when ready and store in a cellar or shed to be used as required. Then, the ground which they have occupied should be forked over and levelled and planted, during the first or second week of July, with Rosette Coleworts, a splendid little cabbage for allotment holders: it is small and compact and as hard as a bullet: it can be planted as close as 15 inches each way: planted at the time mentioned it turns in for use at a good time, when autumn cabbages are getting over and before Winter Savoys turn in.

Turnips are a thrifty vegetable, and to any who prefer them to the Coleworts, garden Swedes (of which there are several good strains) are a very good succession crop on early Potato ground, and July is early enough to sow them for winter use, and it is during winter we feel the want of a few vegetables. The ground must be forked and raked to a fine tilth for Turnips. Sow in lines 15 inches apart and 13 inches deep; when the seedlings are large enough to handle thin out to 8 or 9 inches apart.

Ground on which early garden turnips have been grown should, when the crop is finished, be dug over, burying, if obtainable, at the bottom of the spit some good rotten manure, then the ground can be planted with Leeks. Draw deep drills 12 inches apart and plant the Leeks in the drills with a dibble at 6 inches apart, drop the plants into the holes made with the dibble, and just sprinkle in enough soil to

cover the roots. As the Leeks grow and fill the holes earth up the plants as needed, in the same way as earthing Potatoes. These may not provide exhibition Leeks, but they will be very serviceable and welcome during winter and early spring.

Where a line of early Peas has been grown, a trench can be thrown out when the Peas are pulled up and Celery planted: make the trench 15 inches wide, or 24 inches if there is room enough and 12 inches deep; place a good layer of rich manure in the bottom, and then fill in 4 or 5 inches of the soil on top of the manure, making the whole moderately firm. The trench when completed should be about 4 or 5 inches deep. A great mistake is often made in planting Celery in too deep trenches—a single line to be planted in 15 inch trench or a double line in 24 inch trench.

If a few early Cabbages happen to be cleared off by, say, the third week in August give the ground a good dressing of soot and lightly fork it over: level the bed and make it moderately firm, rake to a fine tilth, and sow Onions in drills 15 inches apart: those, in a mild winter, provide some pickings for flavouring, and in the spring, if left in the same ground, soon grow away and produce an early supply of Onions, and they have the advantage of rarely suffering from attacks by the onion fly.

When the spring sown Onions have been harvested, say by the end of September or mid-October, the ground can be used for autumn planted Cabbages. Rake the ground clean of weeds and rubbish and plant the Cabbages with a trowel without digging the ground, as the firm ground induces a sturdy growth and prevents the Cabbages growing too big and soft before the winter, when, if severe weather prevails, the soft plants are liable to injury. When the plants have established themselves before winter sets in draw a little soil up to them to prevent them being blown about and twisted at the necks during stormy weather. Cabbages from this autumn planting will be ready for cutting by the following April or May. They can be planted 18 inches between the rows, 12 inches between the plants, then every other plant can be cut very early in the year (though small, they will be tender), and thus leave room for the others to more fully develop. Seeds can be sown for this planting at the end of July in ground where a few Lettuces have gone over.

It is not too late to plant Savoys and Kale after Mainerop Potatoes have been lifted, they will turn in and prove very acceptable during late winter and early spring.

Khol Rabi is a vegetable which by the

majority is not sufficiently appreciated for table use, it is not exacting in its requirements, and in a dry summer or on light dry soils does not run to seed so readily as do garden Turnips. The edible portion is the swollen stem and is cooked in exactly the same manner as Turnips. It is believed to be a hybrid between some form of Cabbage and the Turnip, and certainly the flavour is somewhere midway between the two. It can be sown in drills and thinned out like Turnips, or it can be sown in seed beds and transplanted like Cabbages, the latter is the better method. Sow in the latter end of March and plant out when large enough 12 inches apart each way for summer use. Seed may be sown again in July and planted when large enough for autumn and winter use. The young tender leaves of Khol Rabi can also be cooked and served in the same manner as Spinach. Some people cook both the stem and leaves and use them as two distinct

vegetables, so that in these times of enforced economy here is an opportunity of growing an economical vegetable.

W. D. B.

Brussels Sprouts

THIS is one of the hardiest and most prolific of winter vegetables, yielding over a long period large quantities of "greens."

The past winter has been one of the worst for many years as far as green vegetables are concerned, and with the exception of Savoys and Sprouts, little else has been seen in the shops.

March and April, the chief seed sowing months, were so cold and wet that it was well

nigh impossible to get a decent seed bed or a decent day to sow. Experienced growers know that Sprouts require a long season to develop properly, and, consequently, endeavour to have the outside sowing in by the last week in March. Many growers, however, to get a longer season, sow in frames towards the end of February or early in March, subsequently pricking out the seedlings into a suitable nursery bed.

No doubt many resorted to the latter course this year owing to the wet, cold condition of the soil outside. Market growers who make a practice of raising plants for sale have doubtless made

provision this year for a largely increased demand from Allotment Holders who have not the necessary experience or facilities for raising their own plants.

Sprouts flourish in soil of good quality, but too much rich manure is a mistake, inducing as it does rank soft growth, ill-suited to stand the frost and

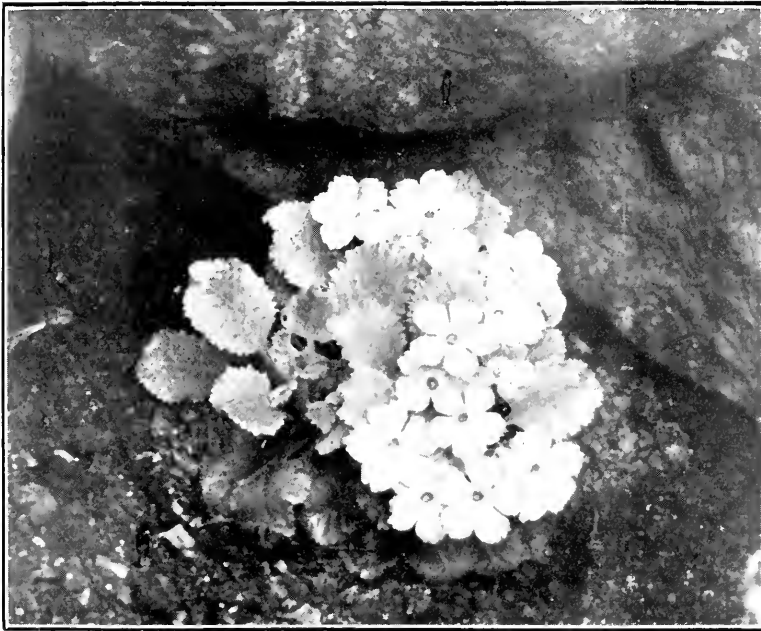


Photo by]

PRIMULA WINTERI AT GLASNEVIN.

[R. M. Pollock

snow of winter, and, also, the "Sprouts" which are to form the crop grow loose and flabby as opposed to the round firm produce of the moderately manured ground. Allotment Holders will be well advised to invest in a few dozen plants of "Sprouts" this month, and if, as has been constantly advised in IRISH GARDENING, early Potatoes have been planted at least 2 feet or more between the rows and 1 foot between the "sets," then it is possible to intercrop by planting Sprouts between the rows, still leaving space for moulding the Potatoes. This plan, which may be availed of when the Allotment is very small, is not always an unqualified success, and is, of course, not possible when the Potatoes are grown on ridges or "lazy

beds." It is much better to reserve sufficient space to accommodate, say, three dozen plants at 2½ feet apart, and having dug it deeply plant as soon as possible in May. Previous to planting, the ground should be well trod over and the plants made very firm when planted. It is easy to say give a good soaking of water if the weather be dry at planting time, but most Allotment fields are not supplied with water, so the next best thing is to ply the hoe assiduously between the plants and keep the surface loose and friable. Given attention in this respect there should result a supply of "greens" from November till March.

HORTUS.

Tomatoes out of Doors

TOMATOES out of doors are as a rule a somewhat uncertain crop, and certainly this season so far as the middle of April, has not been conducive to thoughts of experimenting with anything precarious. However, in an averagely good summer and autumn, fair results are possible, and with the likelihood of restricted imports and the pressing need for increased production it may be worth while making the attempt. In all private gardens Tomatoes indoors are a staple crop, and as seedlings are easily raised there is usually no difficulty in growing on a sufficient number to allow for out-door planting.

The end of May or early June will be soon enough for planting, and if possible the plants should be placed against a sunny wall. There is often sufficient space between fruit trees on walls to allow of a number of Tomato plants being grown at 2 feet apart. The soil should

not be made too rich with farmyard manure, otherwise too much growth takes place and the fruits set poorly. The soil should be thoroughly broken up and pulverised some weeks previous to planting, and subsequently made firm when putting out the plants. The latter must be thoroughly hardened off before putting out at the end of May, and are better if showing the first flower truss. Cultivation is practically the same as for house-grown

plants, maintaining a single stem by rubbing out all side-growths as they appear. As the plants grow and produce more flowers, and when the lower flowers are set and the fruits swelling, liquid manure may be applied with advantage, always in dry weather, soaking the soil with clear water first. If ordinary liquid be not available, Nitrate of Soda or any quick-acting artificial manure may be used at the rate of about a table spoonful sprinkled round each plant and watered in about once a fortnight. The grower must be guided by the condition of his plants as to the amount of feeding



Photo by]

[R. M. Pollock

SAXIFRAGA APICULATA ALBA
In the Royal Botanic Gardens, Glasnevin.

required; more will be wanted on light soils than on heavy. Towards the end of the growing season; when the nights are becoming colder feeding may cease, as it is unlikely to do much good. Fruits which do not seem likely to fully mature out of doors may be cut (although green) and hung up indoors, where many of them will gradually turn red and become quite fit for use.

Some growers, especially in Scotland, grow on the plants in pots all the season, standing them out in sunny places during the summer, and in this way get very good crops. It is neces-

sary, of course, in this case to have large pots as in the case of indoor plants, and the labour in watering is increased, but generally the results justify the extra labour. Of field cultivation it is unnecessary to say much. In very warm mild districts good results are often got, but for the greater part of the country it is not suitable.

The object of this note is not so much to advocate extensive outdoor cultivation of Tomatoes as to urge the necessity of utilising every spare sunny corner in producing something useful, and if a few extra Tomatoes can be produced they will this year undoubtedly do good to someone, whether given away or sent to market.

GARDENER.

Notes.

Purple Sprouting Broccoli

THIS late spring vegetable is invaluable for cutting at the present time, when there is a scarcity of seasonable vegetables. It is easily grown, quite hardy and gives an abundance of sprouts from March till May inclusive. The sprouts should be cut when the flower heads appear. These, when cooked, are tender, of excellent quality, and only need a trial to be appreciated. Seed should be sown early in May, and the young plants transplanted when fit to their permanent quarters. It does equally well in a diversity of soils and situations. I notice in a well-known seedsman's list $\frac{1}{4}$ oz. packets of seed offered at 3d. each.

G. D.

The Mimosa

ACACIA DEALBATA.

I RECENTLY had the pleasure of seeing at Ashgrove, the residence of Ludlow Beamish, Esq., a fine young tree of the above in full flower, and, seeing the subject as I did for the first time in flower, at least out of doors, made it the more impressive. A more beautiful sight than this presented it is scarcely possible to imagine, and after such weather as we have experienced this winter seems to me the more remarkable, as I was always given to understand that this tree is especially liable to injury to the blooms or buds by frost.

Here at Fota we have quite a large piece, but I have never seen it bloom, with the exception of an odd truss, and the only conclusion that I can draw is that the tree at Ashgrove, growing

beside the carriage drive and on a sharp pitch, stands in better drained and warmer soil than ours, or is due to other soil conditions. The tree that has prompted me to make these few notes is approximately ten to twelve feet high, and has, to my knowledge, been in practically full bloom for the past month and possibly longer.

E. B.

Edgeworthia Papyrifera

ANOTHER shrub new to me and this time growing in the noted collections at Ashbourne was most interesting when in bloom in March, with its trusses of primrose yellow tubular flowers borne on the otherwise naked growths. The plants which I am told were suckers from an old original that was lost, made an imposing bed at a time when flowering shrubs are scarce and more than ever appreciated.

Herbaceous and Alpine Plants

AFTER a long spell of wintry weather many of our lovely spring flowers are again making a welcome appearance. Some of them are almost summer flowers this year, since they are only now, in the latter half of April, beginning to move. The early Saxifragas of the Kabsehia section flowered extremely well in March and April, those at any rate which had not suffered from damp in autumn and winter, and now Primulas and Anemones are coming on in turn. The Pasque Flower Anemone Pulsatilla was out in places by Easter, but in shady positions is only opening now. It is a good plan with favourite flowers to plant in various aspects, and so prolong the season of flowering. The white variety of Anemone Pulsatilla is quite worth a place, though not, I think, so fine a plant as the type. It seems to do better in sun than shade and likes a fairly rich soil. There is also said to be a red variety which I have not seen. Aubretias and the red mossy Saxifragas are just beginning to show colour, and the shoots and young leaves of the deciduous Campanulas are at last becoming evident. It is too soon yet, however, to guess at what such beauties as *C. excisa* and *C. Raimeri* may do—their time comes later. It is also too soon to talk of the effect of winter in the rock garden—another month will show more clearly what damage has been done, but already some surprises have occurred. *Veronica cinerea*, so often hard to keep, has apparently survived, and also the Persian *Rubia Aucheri*, which one might have thought would be tender, yet commoner things have vanished.

Never, I think, were the early-flowering hardy heaths so welcome with their bright colours and happy look, though in open beds some forms of mediterranea, as well as arborea, lusitania and Veitchii, have suffered deplorably. On the rockery, however, on a northern slope, *Carnea*, *medit. alba* and a lively-coloured form sent out by Mr. T. Smith and called *Brightness* are really beautiful, but the deepest coloured and most striking form is *medit. coccinea*, a really fine hardy plant.

Gentians are promising very well this year, and already *G. verna angulosa* has been opening daily for some time and is very beautiful in the morning sun. Slender buds are showing on *G. verna alba* and stout ones on *acaulis* and *excisa*; *G. Freyniana* is well up with a dense mass of thick strong shoots, as also is *septemfida*. *G. ornata* has survived admirably the rigours of winter, and one hopes it may likewise escape the destructive and all-devouring slug.

Daffodils

RARELY have these delightful spring flowers been so tardy in making their appearance. If milder weather should supervene soon we shall have early summer flowers with us almost before those of spring have faded. One of the earliest and best of the yellow trumpet varieties is *Sir Horace Plunkett* sent out some years ago by the Lissadel firm, to whom we owe a number of other good things among Daffodils. The variety alluded to has all the attributes of a good doer, being early and of fine constitution. The large bold flowers are carried well above the leaves, which are broad, of good substance, with the glaucous green hue of perfect health. When more plentiful, this should prove a fine subject for naturalising in grass, the only way in which Daffodils really look well.

B.

Daphne Mezereum flore albo and *Erica carnea*

THESE two effective plants suggest themselves as very suitable for planting in combination for spring effect. Despite the cold, wretched weather of the last few weeks both have been flowering freely. The *Erica* grows quite freely in loam even though some lime be present, and the *Daphne* rejoices in cool damp soil and seeds freely, the resultant seedlings invariably coming pure white, which seems to suggest that it has as much right to specific rank as the purple form. Position or aspect does not seem to affect the well-being of either, as they are equally good in full sun or in a shady northern exposure.

Such associations have been frequently advocated in this Journal and can be carried out in a variety of ways and with many different plants. Forsythias, for instance, are now opening their flowers, and if *F. intermedia* or some of its new varieties be under planted with *Chionodoxa* or *Seillas* a pretty effect is produced. It is only necessary to walk round a well-stocked garden in springtime noting the various plants as they come into flower to discover many happy ways of associating plants of different habit and thereby creating many pretty pictures as well as economising space.

DAPHNE.

Primula Winteri

If there were any doubts as to the hardiness of this species the winter we have just passed through must have dispelled them. The plant herewith illustrated has been out for two winters, with only the protection of a slightly overhanging rock and a zinc collar for protection from slugs. When the flowers commenced to open a sheet of glass was laid over them as a protection from frost at night or during heavy rain or snow. The flowers began to open in January and continued until early April—surely a testimony to its value in the rock garden. The aspect is a northern one, and the soil a mixture of loam and peat, with good drainage. As a pot plant *P. Winteri* is equally satisfactory, and rejoices in a good rich mixture of loam, leaf soil and sand. Seeds are produced if pollination is attended to, but they germinate erratically, and no disappointment need be felt if no seedlings appear for many months after sowing.

B., DUBLIN.

Saxifraga apiculata alba

THIS is one of the most satisfactory of the early flowering varieties, in ordinary seasons flowering freely early in March. This year, in common with many other plants, it was much later, but bloomed profusely, almost hiding the leaves in a wealth of pure white flowers. If anything it is more free flowering than the type itself, still one of our most cherished early-flowering alpine.

Propagation is quite simple; cuttings root readily, and a good stock is easily acquired by simply dividing established plants into small pieces and potting up in gritty soil. It appears indifferent to position, flowering well in sun or shade. So desirable a plant might be used in various aspects so as to have a succession of bloom.

B.

Correspondence.

TO THE EDITOR OF IRISH GARDENING.

DEAR SIR.—The question "Does herb-growing pay?" arises so often that I think it may interest some of your readers—chiefly nursery gardeners—to hear my experience of one aspect of it.

I started my herb-growing in March 1916, in one perch of land in half of which were planted Gooseberry and Currant bushes and two or three rows of young forest trees. My expenditure on stock was as follows:—Six old Belladonna plants, 9s.; about $\frac{1}{4}$ oz. Belladonna seed, 1s. 2d.; 4 lbs. Garlic (*Allium sativum*) corms, 6s.; 1 packet Camomile seed, 1s. 3d.; 1 packet Datura Stramonium seed, 1s.; 50 old Double Camomile plants, 14s. Total, £1 12s. 5d.

The Garlic corms were planted between the Gooseberry bushes, and some of the Camomile plants between the rows of young trees, so there was real economy of space! The ground was just ordinary garden soil, and none of these herbs were manured or treated in any special way. They all grew exceedingly well, and the Datura was over 5 feet high.

The crop of Datura leaves was unfortunately wasted, because, when they should have been harvested, I was away from home and could make no arrangements about drying them.

The rest of the herbs, Belladonna seedlings, Belladonna seed, Camomile runners, Datura seed and Garlic corms are all sold and have brought me in all £44 6s. 6d. (forty-four pounds six shillings and sixpence).

If you work this out to a larger scale, you will see that if an acre of these herbs had been grown and sold at that rate, they would have fetched about £6,924 for the acre.

I do not suppose that anyone will believe this but I am really an averagely truthful individual, and have a detailed account of all my sales.

It sounds, I know, a most tempting form of gardening, but I do not recommend anyone who may try it to hope for anything like that profit this season.

I shall not do it again. I know it cannot be repeated. I was just lucky in hitting on herbs which would be in great demand, as my stock,

and I feel convinced, judging by the amount of Camomile runners I have sold, that it will, I think, be impossible for the cultural sale to be large again, and that the main trade must be in flowers to druggists.

My Camomile seed threw single flowers—every one—and I gave away all the plants. This is a proof of the inadvisability of growing Camomile from anything but runners from guaranteed double plants.

The prices of these Medicinal Herbs, both in 1916 and 1917, have been quite abnormal, because of the scarcity and the increasing demand. Some of the seeds and plants are now almost unobtainable, and the would-be growers who

don't trouble to order seeds or plants till the time when they are ready to sow them, will have to do without and grow a different crop.

I should like here to ask Botanists and Members of the Irish Herb Association to gather and re-sow seeds of some of the more valuable wild herbs, such as Henbane, Belladonna, Agrimony, &c.

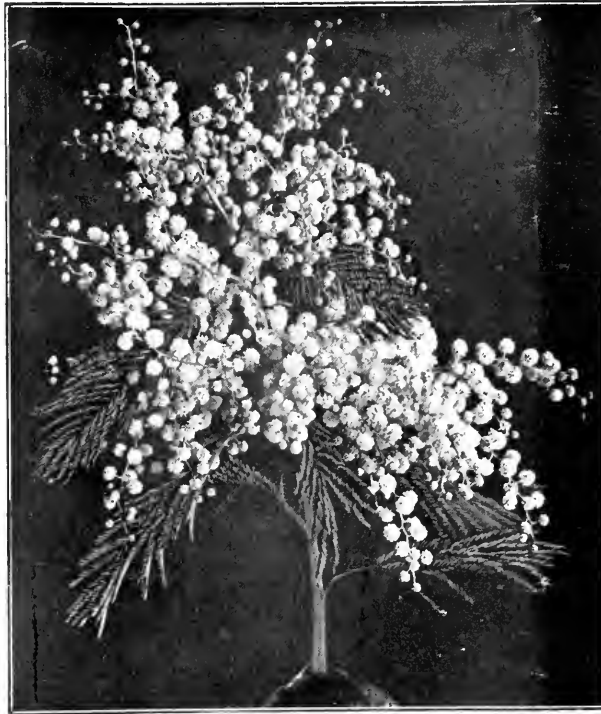
The plants, which must be gathered as a "whole herb"—that is, cut off above the root—just as they are coming into flower, will become scarce, as they have no chance of ripening the seed and performing their natural function. An ounce or two of seed of each carefully gathered and dried, and re-

sown every season in different localities, will prevent their becoming extinct.

Yours truly,

MURIEL E. BLAND,
Hon. Cultural Secretary.

Leinster Herb Association.



"MIMOSA" ACACIA DEALBATA.

A Correction.

IN an interesting letter from the Hon. Vicary Gibbs, published in our last issue, an unfortunate error occurs. In mentioning the hardest frost of January, 1895, the author gave 3° below zero as the lowest reading, which unfortunately appeared as 30° below zero.

Review.

Rockeries: How to Make and Plant Them.

CASSELL'S have just published, for the small sum of 1s. 3d., a book of some 150 pages and many illustrations, entitled "Rockeries: How to Make and Plant them," by H. H. Thomas and S. Amott. This is essentially a book for the beginner and is full of useful information. The chapters on rockwork, building and planting, wall water and bog gardens are particularly good: the methods are clearly and simply explained, and the accompanying diagrams are instructive and helpful. The all too short chapter upon propagation is perhaps the best in the book.

The chapter on "Moraines" is, however, not so good. In

it the writers appear to have missed the whole point of the so-called "moraines." Their use—as the authors correctly state at the commencement of the chapter—is "to make easy the cultivation of certain alpine plants that are otherwise very difficult." Such "difficult" plants are, as a rule, those which are liable to damp off in the winter unless their roots are kept away from clog-

ging earth and the sturdy habit of growth induced by the starvation diet they get in the true "moraine." For such plants the "moraines" described by the authors—in one case loam and leaf-mould only 5 inches below the stones, and in another case a 12-inch layer of rich loam and manure—would usually prove fatal. True moraine plants will be found to require at least 18 inches of pure stone chips, or chips with the least possible sprinkling of soil or leaf-mould, to grow in. A few inches of stone chips or gravel (sand is equally good) laid over a bed of rich soil is not a "moraine" at all in the now usually accepted meaning of the word. In such a bed practically all alpine plants will grow and flourish except those very plants for which "moraines" are really necessary and intended, and the few true moraine plants which appear in the authors' list at the end of this chapter would soon be swamped if one attempted to grow them side by side with the majority of those mentioned in the

list. *Campanulas alpestris* and *cenisia* cannot be grown with strong growing *Achillea* and *Phloxes*. About 80 per cent. of the plants on the "moraine plants" list are by no means "difficult," but would grow equally well in ordinary light soil: a few of those mentioned are true moraine plants, and a few would do better out of the moraine than in it. The true moraine plants are, as a rule, expensive to buy and difficult to keep and propagate, and the beginner would be well advised to leave them alone until he has gained some experience, and confine his attention to the easier plants mentioned in Chapter XII., he will here find the "easier" fully dealt with, and if he follows the cultural directions given with them he can hardly go wrong.

The only other adverse criticism I would pass upon this otherwise valuable and instructive book

is upon some of the "select" lists with which it concludes, the inclusion of some in and exclusion of other plants from the list of "Choice Rock Plants" is somewhat difficult to understand, and the selection of "low growing shrubs" is not a particularly happy one. For instance, *Pines* are represented by *P. Cembra* and *P. edulis* to the exclusion of the progeny forms of *P. sylvestris*



ANEMONE PULSATILLA ALBA.

and *P. Strobus* and the *Picea excelsa* pygmies, such as *pygmaea*, *Remonti* and *Clanbrasiliana*, are not mentioned at all. There is a good index and many illustrations. MURRAY HORNIBROOK.

Plants and the Winter.

WITH reference to the letter from Sir F. W. Moore in our last issue, we have already received accounts of plants killed and injured, which, when published, will be most interesting and useful. As the month of May will undoubtedly reveal more truly the extent of the damage done in some districts the lists will not be published until later, probably July, to give observers ample opportunity of noting the behaviour of their plants in the warmer weather.

In this connection we illustrate a *Pittosporum*, growing in the Royal Botanic Gardens, Glasnevin, which, normally a fine evergreen, is now completely defoliated.

Sclerotinia Diseases.

THE diseases dealt with in this article cover those caused by the fungus *Sclerotinia sclerotiorum*, Bref., a parasite well known both in Europe and America, and capable of attacking a large range of cultivated plants, both annual and herbaceous. The method of infection and behaviour of the fungus have been most carefully studied in the case of a disease of the potato which is widely distributed in England and Scotland, and causes serious damage in Ireland. As the life-history of the parasite and the treatment to be adopted are the same when other crops are concerned, the potato disease only is described in detail.

S. sclerotiorum is allied to *S. trifoliorum*, one of the fungi associated with clover sickness and described in Leaflet No. 271, and also to *S. bulborum*, a fungus which attacks various bulbous plants in gardens.

THE STALK (SCLEROTINIA) DISEASE OF POTATOES (SCLEROTINIA SCLEROTIORUM, Bref.).—The stalk disease of potato is most destructive in the northern and damper parts of the country. In the west of Ireland the loss occasioned by it is so great that, with the exception of the ordinary potato blight (*Phytophthora infestans*), it is stated to be the most serious disease with which growers have to contend. The fungus attacks the stem, either near the ground or at some distance above it. Subsequently it penetrates the inner tissues and destroys them so that the stem falls over at the affected spot and dies. Though in this disease the tubers are not attacked the yield is reduced owing to the death of the shoot, and in districts where *Sclerotinia* is widespread the crop may suffer very severely.

Description and Life-History.—In the earliest phases of attack, usually about the beginning of July, the disease shows itself in the form of white patches of fungus threads or mycelium, on the outside of the stem. In contrast to most stem diseases this is accompanied by but little yellowing of the foliage, with the result that infected plants are easily overlooked. If dull, damp weather prevails the mycelium develops rapidly and Legins to form oval or spherical cushions, white in colour, and from which minute drops of water exude. These cushions represent the youngest stages of the resting bodies known as sclerotia. The sclerotia consist of a compact mass of mycelium, which later becomes firm and finally hard and black, though internally it remains white. They are spherical or oval in shape, and usually about the size of a pea, but frequently much elongated. When ripe they fall off and remain dormant in the soil until the following spring. It is from the possession of these sclerotia that the fungus derives its generic name *Sclerotinia*, though it should be remembered that sclerotia are also produced by many other fungi.

In addition to forming external mycelium and sclerotia the fungus gradually penetrates the inner tissues of the stem. The cells are invaded and the pith-cavity is filled up with fluffy white mycelium in which sclerotia, similar to those produced externally, develop. The latter remain inside the stems, but ultimately reach the soil if the stems are allowed to decay on the land. The result of this internal development of mycelium is the blocking up of the water-conducting channels.

At the point of attack the tissues are killed and the stem bends over, and sooner or later dies.

The fate of the sclerotia in the soil has been carefully studied by several observers. They remain dormant until early summer, when they germinate and give rise to small disc or cup-shaped bodies which produce the spores. The cups are borne on slender stalks, and appear just above the surface of the soil. They are pale brownish-yellow in colour, and from one quarter to one-half an inch in diameter. These disc-shaped cups are termed apothecia, and they form a characteristic feature of the very large group of fungi known as Discomycetes. When ripe the apothecia discharge their spores into the air, usually in large numbers at a time. If the apothecia are carefully watched, smoke-like puffs of spores may easily be seen. The intermittent discharge of spores from a single cup may continue for two or three weeks.

The infection of the potato plants by the fungus was previously thought to take place by means of vegetative mycelium present in the soil, but recent investigations carried out in Ireland have shown that this is not the case, but that infection is brought about exclusively by air-borne spores derived from the apothecia. The spores are blown across the fields and alight on the foliage. On germination they are capable of infecting the older and fading leaves, and from the leaf the fungus passes into the stem. In some cases direct infection of healthy tissues apparently also takes place, especially in such spots as leaf axils where moisture is preserved.

S. sclerotiorum possesses no conidial form of reproduction. The *Botrytis* found on potato haulms, and formerly thought to be a stage in the life cycle, is now known to be an entirely distinct fungus. In winter, *sclerotinia* is perpetuated by the hard, black sclerotia in the soil, and in early summer it is propagated by means of the spores liberated from the cup-shaped apothecia.

TREATMENT.—(1) The most important measure to adopt is systematically to collect and burn all diseased portions of the plant in order to prevent the sclerotia from reaching the soil. If this is carried out thoroughly the number of spore-bearing cups produced in spring will be largely reduced.

(2) Treatment of the soil with lime in order to kill the sclerotia has not proved of any value, and experiments on spraying plants and soil with fungicides, with a view to killing the spores and sporecups, have not yielded satisfactory results.

(3) For greenhouse or garden work sterilisation of the soil by steam may be recommended.

(4) Unless the soil has been sterilised, plants liable to be attacked by *sclerotinia* should not be grown for at least three years in infected soil. The fresh site selected should be well removed from the old one.

(5) In the case of potatoes, in the west of Ireland, late planting has proved successful, the explanation of the greater immunity of late crops being that fewer old leaves (which provide the fungus with an easy means of entry) are available at the time of the main spore-discharge.

(6) When root crops are concerned, the greatest care should be exercised as to storage, and all diseased or damaged roots should be rejected.—*Journal of the Board of Agriculture*, February, 1917

Suburban and Allotment Gardens.

ARREARS OF WORK.—Weather conditions have been so unfavourable to gardening during the past months, that much of the work which is usually done in March and April is still left undone, and in other cases, where the work of seed sowing has been done too early for this season, many, if not all, of the plants have been killed or stunted in their development. Where this is the case, get all arrears of work wiped out and sow again those crops which indicate failure.

POTATO PLANTING.—Allotment holders who obtained their plots late, and others who are behind with their work, will probably find that main crop Potatoes planted during May—especially if well sprouted—will give as good, if not better results than those planted earlier.

It will not be too late even to start a new allotment and to put Potatoes into it during the present month. (It is to be hoped that the thousands of acres of uncultivated land near the towns of Ireland will become broken up immediately, by the available and willing labour of would-be allotment holders, in order to produce more food.)

A little soil should be drawn up to and over the potato tops as they begin to push through the ground.

SEED SOWING.—Beetroot and Turnips of different kinds, such as Model White, Golden Ball or Orange Jelly, and Garden Swedes should be sown early in the month. For the smaller kinds of Turnips, such as Model White, the seeds should be sown in drills or little tracks at one inch deep, with the drills or rows from 15 to 18 inches apart, while Garden Swedes should have at least 18 inches between the rows, and preferably 24 inches. If a little superphosphate (about half an ounce per yard long) is sown in the rows with the Turnips their roots grow more quickly, and as a

consequence the tops grow quickly, when they are less liable to be killed off by "fly" attacks (Turnip Flea Beetle). Dwarf French and Scarlet Runner Beans should be sown. Seeds of the former should not be planted closer than 6 inches apart in an alternating double row, while the latter should be sown at 6 inches apart in a single row. The seeds should be covered with about 2 inches of soil, and just as the seedlings begin to push through the surface they should be lightly covered with more soil, so as to protect them a little from May frosts, which

often do damage to such tender plants. Lettuce, radish and cress seeds should be sown: plants from these will be welcomed in the hot days still to come: as the plants do not occupy the ground for any lengthy period, they can be sown in lines midway between newly planted Cauliflowers, &c., or between rows of Onions, &c., or alongside Peas and Beans.

THINNING OUT.—As a general rule seeds are sown far too thickly, where dozens of plants are wanted thousands appear, each struggling for mastery. To obtain good results a vigorous thinning out of the young plants should be done—the sooner the better for those which are to be left. At first about 3 inches should be allowed between the individual plants, and later on

sufficient space should be allowed for each plant to develop. The distance varying for different crops. In some cases, such as Lettuces and Cauliflowers, &c., the surplus seedlings can be planted out into a spare corner of ground, for final planting later, if needs be. It frequently happens at the thinning out period or just after, that Onion and Carrot plants droop, owing to attack by maggots of the Carrot and Onion Flies. To prevent this happening, keep the soil *well over* the roots of the plants at the time of thinning, dust the plants and soil with a dusting of soot, and spray them with a smelly mixture, made up with such materials as paraffin, soft soap or carbolic soap, &c., using about 2 ozs. of soap to a gallon



Photo by

R. M. Pollock

PITTSOPORUM SP. IN THE BOTANIC GARDENS, DUBLIN.

Completely Defoliated by Frost.

of water. The spraying of such plants should take place weekly, more especially during rainy weather. It occasionally happens that a crop of radishes sown as inter-crops between rows of Onions and Carrots (by giving a distinct radish flavour to the locality) wards off the flies and prevents the egg-laying on the plants—eggs which would hatch out into maggots or “canker” as the pest is called in Belfast.

PLANTING.—Vacant ground should be filled as far as is desired by planting out Cauliflower, Savoy and other Cabbages, Brussels Sprouts, &c. For these crops the ground should be exceptionally well manured, and should be well dressed with lime to keep the soil sweet and to check the development of diseased tubercles on their roots—known as club root, finger and toe, &c., and found mainly on sour soils. Except in the case of small Cabbages, such as Ellam’s Early, the rows should be at least 24 inches apart and the individual plants from 18 to 24 inches.

Annals in the flower border will also require the same vigorous thinning, the reason why flowering annuals are so often regarded as weedy plants is because they are rarely given sufficient room for full or even partial development.

Scarlet Runners.

ALL vacant wall spaces and fences and railings that can be protected from cattle or sheep, should be used for growing this useful vegetable. The seeds can be sown at once, they will germinate quickly, and grow at a surprising rate. In the *Gardener’s Chronicle* for April 21st a variety called White Dutch is recommended, and can be used either as a “Haricot” or “Butter Bean.” The writer had eaten them himself, beans that had been grown and dried in England, and he states that they were even better flavoured than those imported from Italy. The young pods can be used as French beans or “Haricot” Beans, and the others left on the plants until fully grown and then saved for winter use. From a decorative point of view, they are just as bright and interesting as many climbing annuals, and they need very little support, merely what will prevent them falling to the ground. The bright scarlet flowers are far from being unattractive.

P.

Garden Pests.

THE CABBAGE MOTH (*Mamestra brassicæ*).

THE caterpillars of the Cabbage Moth (*Mamestra brassicæ*) are a great pest in gardens all over Great Britain and Ireland, and did much harm in 1903 in parts of the south of England. They are chiefly a cabbage pest, but they also attack a great variety of other plants, such as turnips, radishes, broccoli, cauliflower, strawberries, lettuce, currants, dahlias, mallows, marigolds, roses, geraniums, dock, goosefoot, tobacco plants. They are fond of maize, feeding amongst the male flowers, and by attacking the female spikes destroy the brush crowning them. In fact nearly all plants are devoured by this pest. The

caterpillars are very greedy and spoil as well as eat the plants.

DESCRIPTION AND LIFE-HISTORY.—The Cabbage Moth appears on the wing during the whole summer. The fore wings are dark grey, varied with black, with many blackish streaks and marks; the hind wings are brown, pale at the base with a whitish fringe; thorax the same colour as the fore wings; the abdomen brown with more or less distinct tufts down the back, the tip being distinctly tufted; the legs are brown and very hairy at the base. The wing expanse reaches about one inch and three-quarters, and the length of the body nearly or quite three-fourths of an inch. The moths fly at dusk and at night, remaining at rest upon tree trunks, pailings, &c., during the day. They may also be found nesting against the sides of clods and stones in fields.

The eggs are laid on the leaves of plants, especially cabbages, and hatch in six or seven days. The caterpillars, like the moths, are very varied in colour, apparently depending upon the plants which form their food. When young they are always green, but as they grow the colour changes; some remain green, others become greyish-green, and some almost black on the back and yellowish above the feet; below they are greenish-grey. There is sometimes a prominent dusky line along the back. The head is ochreous and horny and the first segment is blackish; the legs and prolegs are all green and the spiracles pure white. When full grown they reach an inch and a quarter in length; the grown caterpillars roll themselves up into a ring if touched.

The method of feeding varies according to the plant attacked. When the larvae are on a cabbage they eat their way into the heart of the plant, no matter how solid, and defile it with moist green excreta (“frass”) which gives the cabbage a most disgusting appearance. Plants may be completely riddled by them. When attacking turnips, &c., they devour the leaves down to the midribs.

When mature the caterpillar either enters the ground to pupate, or may change on the surface, or under a stone or tile. The pupa is shining chestnut brown with occasional darker areas; it may be placed in a cell of earth, or it may be naked in the soil. Most of the caterpillars are pupated by the late autumn, but some only do so in the next spring. They may even be found in cabbages during the winter.

METHODS OF PREVENTION AND REMEDIES.

1. All chrysalids should be destroyed when the ground is dug in winter. If large areas of cabbage have been attacked it would be well to turn poultry on the land; in garden cultivation, digging in the winter would turn up the chrysalids, and these could be collected or birds turned in.

2. Handpicking, before the caterpillars have left the outer leaves and eaten their way into the heart, should be practised.

3. Cabbages may be dusted with gas lime that has been exposed to the air for three months or so; the lime runs down into the cabbages and makes them obnoxious to the larvae without harming the plants, though it necessarily renders them less suitable for feeding or culinary purposes.—*Leaflet 109, Board of Agriculture and Fisheries.*

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill,
Shane's Castle, Antrim.

KITCHEN GARDEN.

SINCE writing my last calendar the weather has been *serious*. A snowstorm on the 11th of April is something uncommon, proceeded by 11 to 16 degrees of frost, then followed by rain. Perhaps the cloud has its silver lining after all, and the month of May will excel in bright, warm sunshine.

The work in general out of doors has been at a standstill, so that every effort will have to be made to make good for the late and extraordinary bad winter and spring. Study last month's calendar for work in arrear.

SEED SOWING.—Both French and Runner Beans may be sown this month. If seeds have been sown inside, the plants may be planted out towards the end of the month. For Runner Beans either before sowing or planting it is better to take out a trench 2 feet wide and 2 feet deep, and treat liberally with rotten manure, fill up the trench with manure and soil to within 4 inches of the surface, sow seeds 5 inches apart, and if all appear, thin out every other one; cover the seeds with 2 inches of soil, afterwards, when plants are about 6 inches high, and when the operation of staking is finished, fill in the soil level. *Beet-root.*—Towards the latter end of the month make the main sowing of Beet. If this crop is sown too early the roots will grow too coarse (nice medium-sized roots are the best for the table). It is not necessary to manure heavily or at all if the ground has been cropped in rotation and manured well in previous years; sow in drills 15 inches apart, dropping a few seeds about every 6 inches. Continue sowing Peas for July, August and September crops; make another sowing of Broad Beans in a shady part of the garden; a small sowing of Broccoli, Borecole, and Savoy Cabbage, as often the later sown plants will stand the winter better than the earlier sown batch, and at regular intervals sow Spinach, Lettuce, Radish and Turnips.

Most of the early raised vegetables, such as Brussels Sprouts, Cauliflowers, Cabbage, Onions and Leeks, should be well hardened off and planted out, if the weather is suitable; cold, harsh, dry winds is very bad on such plants for the first few days. For Brussels Sprouts make the bed moderately firm, as it induces stocky growth, and they will sprout sooner; plant 2 feet apart each way.

CELERY.—Prepare frame by putting a good layer of rotten cow manure in bottom, and cover with 3 inches of nice fine soil; prick out seedlings, put on lights, and shade for a few days from bright sunshine. When planting out they will lift with a good ball of rotten manure adhering to each plant, so that they will receive no check.

Early Peas will require staking nicely; do not delay this operation; as soon as the plants are 2 inches high stake them thinly, putting small twigs at the bottom for the tendrils to catch on first. Keep the scuffle going between the rows of

seedlings as soon as you can see the lines from end to end; tidy and scuffle walks and alleys, and prepare plots for plantations of Broccoli and late greens.

Garden Pests will be troublesome this month; everything is young, tender and sweet, and suffers from the ravages of slugs, snails, &c. Give all crops a good dusting of soot and lime. A methodical poisoning of rats and mice will save lots of trouble in the garden.

Early Potatoes will require forking between the rows and moulding up.

FRUIT GARDEN.

All blossoms are very late this year, and a good thing too for the fruit prospect. Flower buds on the Pears are swelling and an odd flower is appearing on south walls. Plums are not showing much yet (18th April). As far as flower buds are concerned there is every prospect of a good fruit year if the weather plays us no more tricks. Outdoor Peaches and Apricots have suffered from the recent snowstorms. As soon as the growth appears they should be thinned carefully; if weather becomes dry keep the syringe going on them every evening; stir round the base of the trees and loosen the crust, they will not suffer so much then if dry weather supervenes.

FROST.—If there is danger of frost at night, set a fire going at one end of the fruit garden, study where the wind will carry the smoke over the fruit trees best, it has been the means of saving the blossoms from several degrees of frost. If not already done, mulch any fruit trees, especially the newly-planted ones. If weather sets in dry give them a good soaking of water.

GOOSEBERRIES.—A small dressing of Nitrate of Soda will hasten on green Gooseberries, and, if the owner is marketing, will repay him in big prices by being a week earlier in the market than his neighbour who neglects that stimulant. If sawily is known to exist give the bushes a good dusting of soot and lime when they are damp. Some growers recommend Arsenate of Lead, which is effectual, but is a poison, and should be carefully used and only when the berries are very small (1 lb. of arsenate of lead to 27 gallons of water).

RASPBERRIES.—Remove all surplus growths from the base of the stools, leaving only two or three more than will be required for next year's fruiting canes.

STRAWBERRIES.—Keep them free from weeds, and if weather sets in dry give them a good watering with weak liquid. Keep the scuffle going in the Fruit Garden this month, and keep a sharp look out for Aphides, spraying well with a weak insecticide, such as Quassia Chips and Soft Soap or Paraffin Emulsion.

FLOWER GARDEN.

This is a busy month in the Flower Garden, but it also is a very interesting one. As the flower beds have to be planned and got ready for their summer grandeur, the last week in May or the first week of June is generally considered "bedding out" time, of course, according to weather conditions. Get the beds manured with old hotbed stuff; dug, if dry; tread firmly and rake level. Where Wallflowers have been growing the beds will require a night's rain, or failing that a good soaking with watering-can or hose before

planting. Have all ready so that there will be no delay when planting out. The "hardening off" of plants for the flower garden, whether half-hardy Annuals or Zonals, Heliotropes, &c., should be very carefully done. A place should be selected where, if necessary, temporary shelter can be provided in case of frost at night or cold harsh wind. See that they do not suffer for want of water, and a little stimulant will help them at that time, especially those in small pots. As regards the design for the beds, this year the principal thing will be: What can we grow to eat? but it is not necessary to make ourselves altogether miserable, and—

"Like old Liza Jane

What lives down the back lane,

Sez she, I may seem to be wrong,

But just a few blossoms to liven us up,

Be like Nature's bit of brave song,

I mean to grow faties and turoips and sich,

But lest I should pine for the snuff

I'll kape near my window a patch of gay flowers;
Old hearts need feeding as well."

Anyway we will stick to the Stocks—Calceolarias, Begonias, Paul Crampell, Geraniums, Heliotrope and Violas—and they always look well whether judiciously mixed or in bold groups by themselves.

Herbaceous Borders should be carefully gone over, and any plants that require staking should have the stakes driven into position now and not left until the plants begin to fall about; they can never be staked properly after. Any blank spaces can be sown with Annuals or planted with outdoor Chrysanthemums. Stake Sweet Peas that are well forward, and sow another batch for succession; sow in prepared drills where they are to flower. Keep the grass mown, and have all walks clean, scuffled and raked. It is now time to sow for next spring, such as Wall-flowers, Pansies, Daisies, Polyanthus, Myosotis, &c. When clearing the beds of spring-flowering plants, such as Polyanthus, Arabis, Aubrietias, &c., should be carefully planted in the reserve ground, to get a good supply of cuttings or divisions for next winter's requirements.

VASES AND TUBS.—These add greatly to the beauty of a place, especially if they are well filled. Plants grown specially in good-sized pots to suit the different vases make a show at once—such as good-sized drooping Fuchsias, or Yuccas, Cordylines, Paul Crampell, or nicely staked Ivy-leaved Geraniums; round the edge Phlox Drummondii looks specially well over the usual Lobelias, Verbenas, or Ivy-leaved Pelargoniums, &c.

Keep the hoe going on the different borders, it will be labour well spent this month, and will save a lot of hard work later.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord
Barrimore, Fota.

KITCHEN GARDEN.

THE weather for the past month, although generally dry and certainly favourable for the working of the land, has been of a harsh, cold nature, and growth of all kinds is in a very backward state—fully a month behind, and early

Potatoes that are above ground at the time of writing—viz., April 18th—are the exception rather than the rule. On the first of the above month snow commenced to fall, and the morning of the 2nd resembled mid-winter, the ground and crops being under snow, which fell again on the 10th, and with it 10° of frost. Although of unusual severity it serves to emphasise the necessity of having all plants raised under glass, such as Peas and Broad Beans, thoroughly hardened off before planting, and also giving them some protection, such as that afforded by spruce or other boughs on the north and easterly side.

POTATOES.—The earliest crop out of doors should, under ordinary conditions, require earthing during the present month. Any artificial stimulant intended for them should be applied as early as possible before this is done. Maincrop varieties should have the soil loosened between them as often as necessary to keep down weed growth and also to conserve the moisture in the ground should the weather be warm and dry, as frequently happens this month.

WINTER GREENS.—The beds or drills containing these plants should be carefully watched for weed growth and attended to before the latter get too large, otherwise the plants will soon get smothered and weakly in consequence.

RUNNER BEANS.—After planting staking should be carried out, and the firmer this can be done the better able will be the rows to withstand wind and weather. Under good conditions of growth the plants should easily top fourteen foot stakes, and if stout poles can be inserted at each end of the rows and every ten yards in addition, and stout cord or wire stretched from end to end in two or three rows, this will make them secure. A further sowing out of doors this month will, if necessary, provide a succession.

DWARF BEANS.—These may be sown at intervals on well enriched and worked ground. Negro Longpod is an excellent variety requiring a yard between each double row and a foot between the plants. Keep the soil loosened with the Dutch hoe, and when the rough leaves form draw a little soil to the plants, which will help to support them. It is said that the dust arising from the working of the soil, and especially when moist with dew, is a preventive of red spider.

PEAS.—Continue to sow maincrop varieties, allowing a little more space for large branching varieties. Work the hoe well beside earlier rows that are growing, and if very hot weather prevails a mulch of straw litter or even short grass mowings will be beneficial. Mildew during this month hardly makes an appearance, but should it do so syringe with an insecticide.

TURNIPS.—Select a shady site for sowing these, as a quick growth is necessary for supplying succulent roots. Much depends on the weather, but if it is dry well soak the drills with water before sowing the seed, and a dusting of wood-ashes, or Turnip manure, or Superphosphate will help them. Covering the drills afterwards with short grass mowings will keep the ground moist and also prevent attacks of the Turnip flea or beetle. Red Globe is an excellent variety for hot soils and weathers.

TOMATOES.—Towards the end of the month plants may be put out of doors, when well

hardened off, against walls or buildings having a sunny aspect, or planted on a warm border, and stout stakes put to each plant to secure them. Excellent produce may be grown by anyone possessing a cold frame, the glass protection being greatly valuable on a sunless and damp summer. Plant at the foot of the frame and train up bamboo or other supports above the ground, as then the fruits are less liable to be eaten by slugs and other insects, also get much better coloured than when the plants are allowed to grow on the ground. Eighteen or twenty inches is a fair distance to allow between each.

VEGETABLE MARROWS.—All manure heaps available should be planted with these, and where such do not exist take out holes three feet in diameter and fill with good manure, or the best substitute, and cover over with soil in which to plant them. The plants previously sown in pots and if raised inside must be well hardened off before planting out when danger of frost is past. Damp over during dry spells.

CAULIFLOWERS.—The maincrop will require planting, and if two or more sites are available with different aspects a fine succession will be obtained from the one sowing. Rich ground is necessary to produce good curds, and if the plants can be put out with a good ball and planted with a trowel, two feet six inches apart, very little check will be given them. If watering is necessary leave a slight depression in the soil near the plant and pour water from the spout of a can without a rose.

BRUSSELS SPROUTS.—Practically the same remarks apply to these as described for the above, excepting that a further distance apart will be an advantage in gathering during bad weather and when the larger varieties are grown. For high exposed situations Dwarf Gem is an ideal variety, giving a good supply of fine sprouts, and growing sturdy needs no support. The last season's plantings are giving a good supply of green vegetable at the present time, and very palatable, and few vegetables give greater returns. Thoroughly firm when planting.

CABBAGE.—Work the hoe or Bucco cultivator between plantations planted out with spring sown plants which were sown to supplement those ruined by frost during the winter. Dustings of soot are especially valuable.

CELERY.—If the ground this crop is to occupy is vacant, trenches may be prepared after first digging the ground. Break up the bottom of each and add manure liberally, and cover over with fine soil in which to plant as becomes ready. The ridges between the trenches may be cropped with quick-maturing vegetables, such as Turnip, Lettuce, Spinach and Dwarf Beans. Three feet between each trench will not be too great a distance to allow for earthing-up later on.

NEW ZEALAND SPINACH.—This is a valuable vegetable in the event of a really hot summer, under which conditions this plant revels. As it makes great growth, sow the seed a yard apart.

Attend to the careful thinning of root and other crops piecemeal, and, though we cannot always do as we would wish, showery weather, if possible, should be chosen. Frequent dustings of soot when the plants are moist with dew are of the greatest value.

HARDY FRUIT GARDEN.

STRAWBERRIES.—The surface of the beds should be hoed during warm weather to destroy weed life, and as late as possible before the litter is placed around the plants, or much trouble will most likely be occasioned, and before doing so a good dusting of soot or lime will help to ward off insect pests. Place the litter close around the plant. Failing clean straw, long stable litter will do, as showers of rain and exposure to the sun and air will cleanse it. In the event of late frosts the litter may be shaken over the plants to protect the blossoms. Plants in pots that have been forced early in the year and are intended for planting out must not suffer for want of water, and will produce a useful crop of fruit the same autumn. Fruit trees growing on walls fully exposed to the sun soon suffer at the roots for want of water, and where it is not possible to water, keep the surface as loose and as fine as can be by frequent hoeings and a light mulch of strawy litter, but avoid heavy dressings of such as cow manure, which, with a change of weather are apt to keep the soil cold. Trees that cropped heavily last season and showed signs of deteriorating may be helped with manure water of some kind. Attend to the disbudding of Morello Cherries, so that as little pruning as necessary is required during the winter months, and stop the growths on Sweet Cherries with the finger and thumb to induce the formation of fruiting spurs, and keep a sharp look out for aphids, syringing the trees, and especially Sweet Cherries, with Quassia or suitable wash as a preventive.

THE FLOWER GARDEN.

Clip box edgings before digging the beds. The spring display this year will be later than usual, so that every preparation should be made to be able to prolong the one and arrange for the reception of the summer blooming plants. Use manure well decomposed when digging, and place it as deeply down as possible, so as not to disturb it when planting. During the present month, harden off stocks of bedding plants, and continue to propagate such plants in heat as Verbenas, Salvias, Heliotrope, &c., from the stock plants, as the best results are obtained from young stuff that is growing freely and suffers no check. Polyanthus Arabis and other plants may be temporarily laid in until the borders are made ready for planting them after division. Sow seeds of Wallflower, Sweet Williams, Canterbury Bells, &c. Forget-me-Nots can easily be secured in quantity by heeling in a few old plants when in full flower and raking down the soil to a fine filth around them. If birds are troublesome put a piece of net over. Water Lilies may be replanted this month. Old clumps are apt to become weak in the centre. A fine aquatic, flowering before the Nymphæas, is *Orontium aquaticum* the Golden Club. Give Gunneras a dressing of manure, and remove flowering stems so as to concentrate the plants' energy to the noble foliage. During the early part of the month guard the young foliage against late frosts. Plant out in the grass or under orchard trees bulbs that have been forced in pots or boxes, putting them well down with the spade.

[Reprinted from *Irish Gardening*, 1910.]
IRISH GARDENING.—Calendar of Cultural Operations.—Vegetables.

Name of Vegetable	When to Sow Seed	When to Plant Out	Distance Apart	Ready for Table	Names of Good Varieties
Beet	April and May	Thin when ready	1½ feet lines, 8 in. plants	Aug. to May	Dell's Crimson and Sutton's Blood. Rd. for "Main Crop," and Globe, best for "early use."
Broccoli or Kale	End of April During April	When ready When ready	2 feet × 1½ feet 2 feet × 2 feet	Feb. and Mar. Nov. to June	Tall German Broccoli and Asparagus Kale. Self-protecting. Winter Mammoth, Superb Early White (Sutton's), Mont Blanc (Drummond's), Lexington and Model, in order of cutting
Brussels Sprouts	March During April	When ready Thin when ready	2 feet × 2½ feet 2 feet × 8 inches	Nov. to April Aug. to June	Multiple, Wroton, and Exhibition Sprouts. Early Gem, St. Valary and New Red Intermediate
Carrot	On hot-bed, early March April	Middle of April When ready	2 feet × 2 feet 2 feet × 2½ feet	July and Aug. Aug. to Nov.	Early Snowball and Dwarf Erfurt Magnum Bonum, Early Giant, and Veitch's Autumn Giant
Cauliflower, Early	Early July	End of September	2 feet × 1½ feet	April and May	Excelsior (Diekson's), Ellam's Early, Flower Spring and Early Officium
" Late	April and May	When ready	2 feet × 1½ feet	June to Dec.	Noupareil, Main Crop (Sutton's), Reliance and Main's No. 1
Celery, Early	Hot-bed, end of Feb., March	May June	3½ feet × 1 foot 4 feet × 1 foot	Sept. to Nov. Nov. to April	Early Gem and Clayworth Prize Pink Solid White and Standardbearer
Leek	End of March	June and early July	1½ feet × 9 inches	Nov. to May	Lyon & Dubbie's International
Lettuce, Summer	March to end of July	Thin when ready	1½ feet × 9 inches	June to Nov.	Pearl, All Year Round, and Continuity
" Winter	Middle August	Oct. and March	1 foot × 9 inches	April and May	Hardy Green, Hammersmith, and Winter Pearl
Onions, large Bulbs	Hot-bed, Feb., March	End of April	1½ feet × 9 inches	Aug. to May	Ailsa Craig and Cranston's Excelsior
" Spring	End of July and August	Thin when ready	1 foot × 6 inches	Sept. to May	Bedfordshire Champion and James' Keeping
" Tripoli	End of April	Oct. and Feb.	1 foot × 6 inches	May to Sept.	Giant Leontine Roca and Red Flat Italian
" Pickling	February and March	Thin when ready	3 inches each way	Oct. to May	White Queen and Silver Skin
Parsnip	Feb. & boxed seed, Mar.	Thin when ready	2 feet × 1 foot	Oct. to May	Sturtevant and Tender and True
Potato, Early	March and April	—	2 feet × 1½ feet	End of June	Ninefold and British Queen
" Main Crop	April	June	2 feet × 1½ feet	Aug. to June.	Up-to-date, Duchess Cornwall, Factor and Langworthy
Savoy	First week May	—	2 feet × 2 feet	Nov. to Feb.	Drumhead and Model
Beans, Scarlet	February to May	—	Single lines, seed 1 foot apart Double lines, 9 inches apart	Aug. to Nov. July to Sept.	Best of All and Ne Plus Ultra Exhibition Long Pod for early, and Taylor Broad Windsor for late use
" French	End of April to end of June	—	Double lines, 9 inches apart	July to Oct.	Canadian Wonder and climbing Tender and True
Peas, Early	February	—	Sow in shallow drills	June and July	Multiple, Grachus, Bountiful, and William 1.
" Mid-Season	March to May	—	Sow thinly in shallow drills	July to Sept.	Alderman, Eureka, Senator and Daisy, a dwarf pea
" Late	May	—	Sow thinly in shallow drills	Sept. and Oct.	Gladstone and Antocrat
Turnips, Summer	March to June	—	1½ feet × 6 inches	June to Dec.	Early Milan and Snowball
" Winter	July and August	—	1½ feet × 6 inches	Dec. to April	Orange Jelly and Blackstone
Spinach	March to August	—	1½ feet × 6 inches	All year round	Victoria Round; quite hardy
Herbs	April	—	1½ feet × 1 foot	All year round	Parsley, Mint, Thyme, and Sage are the most useful

This Calendar has been prepared by Mr. William Tyndall, and it is intended to be torn off and hung up for consultation during the year.

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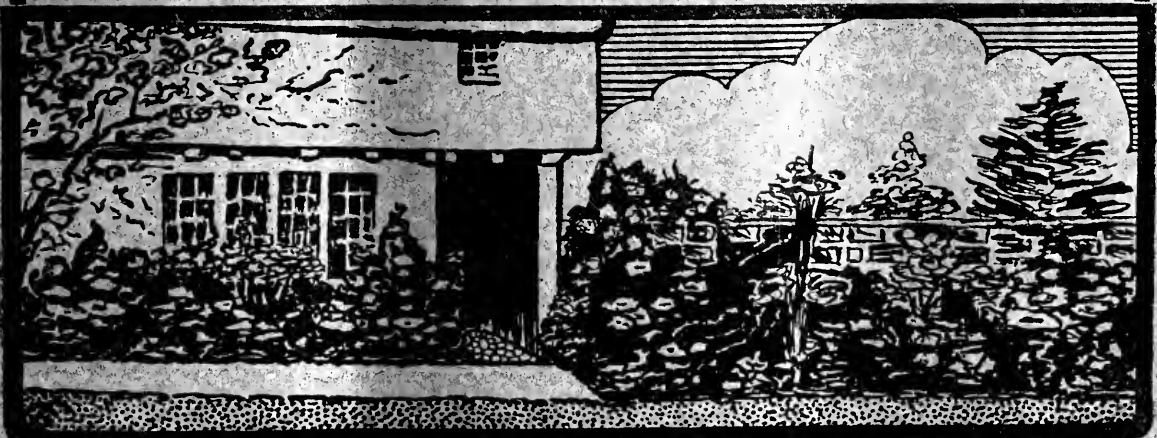
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Irish Gardening

Contents

	PAGE		PAGE
Allotments in Belfast	81	The Cultivation of the Leek	90
Winter and the Rock Garden	82	Suburban and Allotment Gardens	91
The Camassias (Illustrated)	83	The Skunk Cabbage (Illustrated)	92
Violas	84	Flower Associations (Illustrated)	92
Thinning Crops	84	The Application of Botanical Science to Agriculture	92
Weeds	85	The Month's Work—	
Garden Pests	86	Midland and Northern Counties	94
The Ground Cherry	87	Southern and Western Counties	95
Notes (Illustrated)	88	Review	96
Roll of Honour (Illustrated)	89		



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IRISH GARDENING

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1917

EDITOR—J. W. BESANT

Allotments in Belfast.

ALLOTMENTS, or garden plots as they are generally known as in Belfast, have made extraordinary progress since the outbreak of war. In 1915 there would be about 530 plots, which have developed until at the present moment there are over 5,000 in the district, and of these more than 4,500 are within the city boundary, including a considerable area in the public parks which is laid out in plots. The groups of plots, which now number 80, are scattered in a more or less continuous ring throughout the city. The size of individual groups naturally varies from a quarter acre upwards. The largest area yet enclosed is 40 acres in extent, and has accommodation for 550 plots, but it has not been fully developed as yet. The largest area in full working order is 29½ acres with 390 plots.

At a conservative estimate each plot should produce vegetables to the value of £5 at the present prices, and therefore this extension is a considerable increase in the food supply of the nation. The development of plots in Belfast is chiefly the result of the labours of the Garden Plots Association, which is a committee of gentlemen working under the Belfast Christian Civic Union. The whole of the work of organization, control, &c., has been done voluntarily, the

Association deriving no aid from any outside sources. The movement is entirely self-supporting, and, in the words of the Plots Association, "It is only necessary to start allotments in any area to get a few gentlemen to become responsible for the rent of the field or fields that may be selected," liability which so far has not had to be discharged in Belfast. As soon

as the ground is taken a demand for plots always springs up. The method adopted is to obtain suitable ground, pending its being needed for building purposes. Ground is not taken for any term of years, so that it is obtained from £3 per acre, or the usual grazing rent. With land of this description the Association have no security of tenure. Fortunately occasion seldom arises when it is



Photo by

LYSICHTUM CAMTSCHATCENSE.

[R. M. Pollock

necessary to evict plot holders but efforts are made to get land in the immediate vicinity. The question of permanent allotments will be an important one after the war, and no doubt local authorities will have to consider some means for the permanent establishment of the same.

The plots are 90 feet long by 30 feet wide, and these are allotted at about 7s. 6d. per plot per annum. This covers the rent, expenses of fencing, &c. Theoretically there should be

16 plots to the statute acre, but, as a wide path must be provided alongside each plot to enable a cart to pass, it is usual to get about 13 plots to the acre. The Municipal Technical Institute has given a considerable amount of assistance in laying out the gardens, and their Horticultural Instructor also visits the plots and gives advice on their cultivation. Lectures are also given, and, in addition, eight demonstration plots are conducted from the Institute. On these plots a selection of vegetables is grown and space set apart for a flower border. A good deal of education is yet necessary to convince many of the labouring classes in Ireland that there are other useful vegetables as well as Potatoes, Cabbages and Turnips.

One of the rules of the Association is that plot holders must grow at least four kinds of vegetables and a border of flowers. Also men failing to cultivate their plots to the satisfaction of the Association may be deprived of the same without any compensation. This useful rule does away with badly cultivated plots overgrown with weeds, and enables a man to occupy the plot to the satisfaction of himself and adjoining plot holders. Complaints, however, in this direction have been very rare indeed. It is not allowed to sub-let or transfer plots, but holders on giving them up must surrender them to the Association, and thus a pernicious practice of buying and selling plots, common in England, is avoided. In fact the Association reserve the sole right of control throughout, and local committees, when formed, act entirely under the jurisdiction of the Association. This may seem a somewhat arbitrary method, but the thorough success of the whole scheme has justified its adoption. Subscriptions to the plots are payable in advance, also the purchase of seed potatoes and artificial manures from the Association, and it is a matter for congratulation that with such a large number of plots arrears for rents, &c., are absent.

The plot holders in Belfast are drawn from practically all classes of the community, and the standard of cultivation is remarkably high. It is felt that this high standard is partly due to competitions, and accordingly competitions have been arranged for 1917 in each section. Prizes will be awarded for the best plots of vegetables and the best plot of vegetables and border of flowers as a whole. A silver cup is also presented for the best group of plots in the city. It is proposed to hold this year, in September, the first annual show, and a hall has been engaged for the purpose. A schedule has already been drawn up and posted on the plots. The show will comprise a large number of classes, both for vegetables and flowers.

During the winter a series of lectures for plot holders were given at the Queen's University and the Technical Institute which were extremely well attended. A summary of the lecture was prepared before the address was delivered and distributed free of charge to each person when entering the hall.

The demand for plots in Belfast is still unsatisfied, and the percentage of men who give up their plots after the first season is very small. It is proposed therefore to promote further extensions at the earliest convenience. Various schemes have been established and will be further elaborated for the benefit of holders and the success of the plots, which should make the Garden Plot movement in Belfast unique throughout the kingdom.

G. H. OLIVER.

[In connection with these notes we hope to publish several photographs next month.—ED.]

Winter and the Rock Garden.

THE alpine gardener has passed through what is probably the most severe winter in his experience. The late autumn and early winter were marked by persistent hard weather and followed by three months of most wintry weather—sleet, hail, snow and wet frosts—and as late as April 1st there was three-quarters of an inch of ice on a water barrel here.

The frosts, inasmuch as they resembled arctic conditions, did no injury to the Saxifrages, though gardens out of reach of the immediate influence of the sea appear to have suffered very badly in regard to tender plants and shrubs.

The excessive wet weather caused a certain amount of "rusting off" amongst the Saxifrages, but nothing beyond the average, and the only effect of the hard weather was to postpone the period of blooming.

In 1916 Saxifrages—*Burseriana Gloria* and *speciosa*—were in bloom by the middle of January; this year they were not at their best until the third week in March; both plants flowered well, one piece of *speciosa*—measuring some three inches across—had at least eighty blooms on it. *Burseriana multiflora* was about ten days later, but bloomed very freely, each spike carrying a head of four or five flowers.

Amongst the *Englerias*, *Grisebachii* was trying to throw up its flowering spike during the last days of December, but made slow progress until March, and is now at its zenith; *thessalica* has flowered, but the dull crimson spikes are not attractive.

Some of the yellow *Kabschias* have done very well and *apiculata* (as usual) was most floriferous. One piece of *Paulinae* was very fine, it runs

Faldonside very close in the shape and colour of its flowers, and seems easier. In the newer yellows *Borisii* has done well, the flower is like *Paulinæ* in size and shape, but if anything a shade deeper in colour. *Haagii* and *Eudoxiana* are both vigorous growers, and have bloomed most freely. The former is a deep yellow and the latter a much paler edition. The flowers are small and the petals rather wide apart. *Borisii* is far away the best of the three.

The pink *Burseriana* "*Irvingii*" is an exceedingly free flowerer, and has been smothered with blossom, a very pleasing pale pink which fades after a few days.

All three *Burserianas* were three or four weeks later than last year, were buffeted by wind and hail stones and occasionally blanketed in snow, but they are not a penny the worse. It is what one might expect—if the drainage is all right the more the exposure the more vigorous should be the health of the Saxifrage. The whole of the Silver Saxifrages are now showing signs of an exceptional wealth of bloom.

Æthionemas, *Lithospermums* and *Hypericum* reptans have not been too happy, but here it is the battering, biting east and north-east winds that do the injury, not the cold, and the best remedy is the protection of a stone or rock. *Lithospermum rosemarinifolium* would have been killed had it not been for the protection of a piece of rock placed in the right position at the beginning of the winter. *L. prostratum* would have been a good deal knocked about (though it would have survived), but a piece of wire netting, of large mesh, was put over it and pegged down, so that the wind was unable to lift up the mass and beat twig against twig.

Æthionema schistosum seems to be "as hard as nails."

Veronica Hulkeana lost its leaves, but is now breaking out again, though one, sheltered by an *Escallonia*, kept its foliage and will soon be in bloom.

Geraniums argenteum and *cinereum* are growing vigorously, and the *Erodiums* have not suffered.

The rare *Anemone blanda scythnica rosea* commenced to bloom at the end of March: the pink or rose-coloured flowers are very beautiful, and altogether it is a most desirable plant; *blanda* (white with blue or purple reverse) was about three weeks later, it is a lovely thing, and there is a fine clump of it in the rock garden at Glasnevin.

The only plants to receive the protection of a pane of glass were *Androsace lanuginosa*, *Chumbyi* and *sarmentosa*, *Petrocallis pyrenaica* (now in bloom), and *Asperula suberosa*.

Dalkey, 1st May.

J. HARPER SCAIFE.

The Camassias.

THESE are mostly strong growing bulbous plants belonging to the Lily order, and are perfectly hardy in any soil of average quality. They are essentially May flowering plants and are fast pushing up their flower spikes now, on the 8th of May. For an early display in the herbaceous border they are very useful indeed, but, like other early things, must be planted judiciously, so that as they go out of flower and the leaves ripen off they may be screened by the developing growths of later flowering subjects. Just at present it is difficult to think much of wild gardening, but if we "live in hope we'll not die in despair," and there is no more "heartening" occupation than gardening. The *Camassias*, therefore, should be borne in mind for the wild garden, when we have finished the more serious problems now in our minds. Mostly pushing up their spikes to a height of from two to four feet, they suggest themselves as admirably suited for planting in grass or by the sides of thin woods. In shrubberies, too, they make a nice display, asking for little attention other than to be left alone. There are four species at least in cultivation all from America—two from California and two from the north-west region.

C. cusickii is handsome, forming a rosette of broad leaves and producing a handsome spike of pale lavender-blue flowers; height at flowering time, two to three feet, according to the vigour of the plants.

C. esculenta or *Quamash*, as it is sometimes called, is a very fine species bearing large blue flowers on a spike at least two feet high in good soil. Of this there are several varieties—viz., *alba*—with white flowers, *Blue Star*, *Royal Purple*, &c.

C. Fraseri is a dwarfier variety, sometimes not much more than a foot high at flowering time, but often considerably more in really good soil. The flowers are not quite so large as some others, and are of a delicate pale blue, and generally admired.

C. Leichtlini, illustrated in this issue, is a strong grower, as may be seen from the illustration. The flowers are creamy white, borne on strong stalks. Of this, too, there are several varieties in commerce.

C. L. Purple King is good, with large violet blue flowers, and many other seedling varieties, probably hybrids, vary in colour through shades of blue, lavender, purple, &c.

Most of the species and varieties are comparatively cheap, and may be purchased in quantity at low rates for naturalising.

It is recorded that the bulbs were eaten by the North American Indians. HORTUS.

Violas.

THE value of these charming flowers for a spring display was never more appreciated than it has been this spring. In spite of the wet, cold winter, which has proved so disastrous to many things, they have been making a very lovely display since the end of April. Most plants looked anything but happy during April and early May, while a cold east wind blew almost daily, yet the Violas, though making no growth to speak of, began to open their flowers, and by the 10th of May were a blaze of colour. Then the welcome spring rain arrived, and they became a riot of blossoms. Those blooming now were obtained by dividing the plants which bloomed last spring. When they are going over or as soon as the beds are wanted for summer plants they will be lifted, all the flowers and long loose shoots cut off, and then they will be pulled to pieces and lined in in nursery beds, where they will make nice sturdy plants for next autumn. Another batch is used for summer and autumn blooming. These are propagated by cuttings put in in a cold frame in September; these root during autumn and winter, and make fine plants for spring planting.

Thus it will be seen that with very little trouble a large supply of beautiful flowers is easily maintained without any artificial heat whatever.

Violas can be used in many ways and are always pleasing. As an edging to beds of Wallflowers they look very well, as a ground-work for beds of bulbs they are equally fine, and they give welcome breaks of colour in the

herbaceous borders; as an edging to beds of shrubs they give effective patches of colour, while in the summer garden they can be effectively used alone or in combination with other plants.

Some of the most effective varieties grown here are Moseley Perfection, King Cup, Royal Sovereign and the old Canary Improved, yellows; Eminence, large-flowered and purple-violet in colour; J. B. Riding, rosy-mauve; John Quarton, light mauve; Mrs. Davidson, lavender blue; Mrs. Chichester, white, edged and flaked purple; Wm. Neill, rose coloured; and a very fine pure white called here Warley White, as it came from Miss Willmott's garden in Essex.

Of the *Violetta* type the following are good:—Blue Bonnett, lavender-blue; Marginata, white with a blue border; Nelly Brown, yellow; Queen of the Year, china blue; and *Violetta*, white.

B.



CAMASSIA LEICHTLINI.

Thinning Crops

THIS is a very important and very necessary operation in the cultivation of all crops that are

sown where they are to grow to maturity, or at least to the time when they are to be harvested or used as food. Readers of IRISH GARDENING who may not have had much previous experience no doubt benefited from the advice given by the several writers and sowed the seeds at approximately the right distances between the rows. All will not be well, however, unless thinning out in the rows is promptly attended to. The mild showery weather in early May "made magic" in the garden, and seeds which had been lying apparently dormant quickened into growth and raised their slender leaves to the

light and air. The progress of the young seedlings has been marvellous, and ere these notes appear thousands of them will have begun the great struggle for existence, jostling each other for the best place as it were. It is the grower's business to see that this struggle is soon over, or, if possible, to anticipate it and thin out before overcrowding takes place. Thinning should not be completed at one operation, but should take place gradually at two or three different times at intervals of a week or so. In this way it will be seen which plants are growing best and appear likely to make the best plants :

Weeds.

THE mild, showery weather which came so welcome early in May gave an impetus to growth, and, as usual, the first plants to respond were in many cases those commonly referred to as weeds. It is not unusual to refer to the vast majority of our native plants as weeds, but this method of expression is not always correct. Any plant is a weed when growing where it is not wanted. A great many of our wild flowers are beautiful when growing in wild uncultivated places, and may be not less beautiful when invading a



PYRETHRUM AND POPPY.

there is also less disturbance of the soil about the roots—a condition which often favours attacks by grubs and maggots. On no account should seedlings be allowed to progress too far before commencing to thin out, otherwise the roots become matted, and unnecessary disturbance of the plants to remain takes place, thereby hindering their proper development.

The main vegetable crops which are sown where they are to develop are Onions, Parsnips, Carrots, Beetroot, Parsley and Turnips.

The final distances apart will be found in the columns devoted to the "Month's Work," the object of this note being to emphasise the necessity of strictly carrying out the operation of thinning.

PRACTICE.

cultivated field or garden, but there they are intruders robbing the legitimate crop of light and air and moisture necessary for its proper development. Hence the gardener wages continual war against weeds no matter how beautiful they may be.

Different soils and climates favour the growth of different weeds, and a plant which may be a pest in one county may hardly be known in another; also they vary greatly in the ease, or otherwise, with which they may be destroyed or kept in check. Some are of annual duration only—that is, the parent plant sheds its seeds and dies, while the seeds grow and give rise to another generation. Others are perennial and live for years—growing, flowering and seeding practically every year. Some increase enor-

mously by pushing forth long underground stems, every bit of which will grow, even when broken up into small pieces, unless carefully removed and burned.

It is a safe and commendable rule never to allow weeds of any kind to form seeds. Most of the annual kinds can be got rid of by constant hoeing, so often advocated in these pages, but when land is really foul more strenuous methods must be adopted for deep rooting perennials.

Two of the commonest and most abundant annual weeds are Groundsel and Chickweed, both of which grow with great rapidity, flower early, and soon form seeds. They should never be allowed to approach the flowering stage, but should be hoed out as soon as plainly visible: if growing actually among the seedlings of a crop hand-picking must be resorted to. These remarks are, of course, applicable to all weeds, but some are much more difficult to get rid of.

Among perennial weeds some of the commonest and most persistent are Dandelions, Plantains, Thistles, Couch Grass and Bindweed. Constant hoeing is, of course, beneficial to a certain extent in killing young seedlings of these before they have got any great hold of the soil, but when from any reason the plants have got established in the soil, hoeing is not much use. Couch Grass and Bindweed, the latter well known by its beautiful large white flowers, are particularly hard to eradicate, and hoeing seems only to increase the evil by breaking up the creeping underground stems, every bit of which grows again. The only effectual remedy is to fork out as much as possible of the creeping stem every time a green leaf appears above ground; in gardens or plots among growing crops this is the only sure remedy.

Dandelions, Plantains and Thistles form thick taproots which descend far into the soil, but do not spread laterally to the same extent. They have, however, the property of growing again from the root, even when cut off below the surface of the soil, and consequently while hoeing may clean the surface of the green parts of the plant in a very short time, the root forms a new "crown" from which new leaves soon appear on the surface. Hence it is clear there is only one sure remedy, and that is to dig out the roots entirely.

It is possible to weaken and eventually kill most perennial weeds by constantly hoeing off the green parts as often as they appear on the surface, but the process is a long one. We may safely say that if a patch of Couch Grass or Bindweed be hoed over, as often as a green leaf appears, for a whole season, it will nevertheless appear as strong as ever the next spring. The

food supply stored up in the creeping stems enables these plants to tide over a long period of adversity, and it is only after the lapse of a very considerable time that they are ultimately starved out.

From the above remarks it will be gathered that the best way to keep the garden clean is to be always on the offensive against weeds. Even when a crop has been safely harvested no weeds should be permitted to flourish unchecked. It will do no harm to dig in the annuals before they form seeds, but the perennials should be rigorously rooted out. The best way to utterly destroy all weeds is to burn them if at all possible. The ashes will then provide good manure.

WAR ON WEEDS.

Garden Pests.

It is sometimes supposed that a hard winter is a blessing in disguise, the belief being prevalent that hard cold weather, especially if prolonged, has the effect of diminishing many of the pests which plague the gardener.

There seems room for investigation here—the writer's opinion being that there is little difference whether the winter be mild or hard.

If we take at random some of the commoner pests, such as slugs, for instance, we find that they are already rampant and apparently as numerous as ever. Greenfly is becoming evident in sheltered corners, and soon will increase and multiply.

Among birds, Wood Pigeons are devouring the young Cabbages, and are in such numbers as to suggest that they, at any rate, suffered no food shortage in spite of severe weather. Sparrows, likewise, are in superabundance, and are after seedling Cabbages, &c., as soon as the first green leaf appears over the ground. Rooks and Jackdaws are everywhere, and the first Queen Wasp fell a victim on the 24th (April).

It is perfectly evident therefore that we cannot begin too soon to devise means for combating the destructive ravages of these and other enemies of the gardener.

Perhaps most people this year are interested in vegetable crops, and will therefore be most anxious to secure a full harvest in return for the labour and money expended in cultivating the soil and sowing the seeds.

Birds of sorts are best kept at bay by stretching stout strings across the ground, these being held taut between strong stakes. From the strings, at intervals, suspend pieces of broken glass, old tins, or anything else that will rattle

and make a noise. Small seeds may be protected with fine mesh wire netting or old fish netting. If the seeds be slightly moistened before sowing and a very little red lead be dusted over them, preferably in some receptacle in which they can be shaken so as to become well covered, they will be safe until the young shoots appear.

For young seedlings of all kinds just coming through, soot is an excellent dressing. It should be dusted on freely when the leaves are wet, just after rain or at night when dew is falling. Not only is it objectionable to birds and insects, but it is also an excellent stimulant to the plants, as it gradually reaches the roots. Every allotment holder and cottager should save all the soot he can get hold of. To prevent the ravages of Slugs, soot and slaked lime mixed together in equal proportions is excellent when dusted around young Cabbages, Lettuces and other tender seedlings. Caterpillars, which later on become troublesome on Cabbages and Cauliflowers, are best got rid of by hand-picking as soon as they are detected. Soot and lime used freely about the plants as they grow has a deterrent effect.

Carrots are a favourite crop in most gardens, and often suffer from attack by the dreaded Fly. Early sowings usually suffer most, and many gardeners delay sowing the maincrop until well into May, with the object of escaping the egg-laying season. Soot again is useful dusted along the rows when the seedlings are well up. Thinning should be done gradually to allow for losses, and after each "thinning" the rows should be watered to consolidate the soil round the remaining plants, thus rendering it more difficult for the Fly to lay her eggs near the fast developing root into which the maggot bores when hatched from the egg.

Onions are subject to attack by Insects and Fungi. Young Onions are often attacked by a Fly, particularly about the time they are "thinned." The eggs are said to be laid on the leaves and the maggot burrows down to the base of the bulb, where it destroys the roots and gives rise to decay, resulting in the yellowing of the leaves.

Affected plants should be pulled up and burned. When thinning dust soot about the rows and keep the young plants growing as rapidly as possible by good cultivation; hoe repeatedly, and as long as possible, between the rows; water if drought is prolonged, and if possible dust a little artificial manure between the rows during showery weather if the Onions seem at all slow in growth.

Mildew frequently attacks spring sown Onions,

and is soon noticeable from the white powdered appearance of the leaves. It is recommended to dust the plants with lime and sulphur when the leaves are damp; two parts of lime should be mixed with one part of sulphur. Peas are often attacked by mildew in autumn, more particularly during a long spell of drought. By destroying the leaves the mildew checks greatly the formation of pods and brings the Pea season to a premature close. Keeping the soil moist is the best remedy. Thoroughly loosen the surface soil between the rows either with a fork or hoe; give a thorough soaking of water, if available, otherwise cover the surface with grass or anything that will check evaporation. Failing either of these remedies, continue to hoe the surface assiduously, thereby forming a natural mulch of fine soil.

The Turnip Fly frequently does enormous damage to the crop while the plants are quite young. In fields it is difficult to cope with this pest, but in the smaller area cultivated in gardens and allotments much may be done to reduce its ravages. The simplest and most readily applied remedy is a mixture of soot and lime dusted on the leaves when they are moist with dew or rain; this, if persisted in, is effective in preventing the approach of the Fly, and has a stimulating effect on the plants. Those who have short mown grass available will find it beneficial to scatter this freely over the plants and between the rows; it acts as a mulch, keeps the surface soil moist, and encourages rapid growth, so that the young Turnips soon get beyond the stage at which the Fly can do them any harm.

As the season goes on and crops mature and are taken up, arrange to fill the space with an entirely different crop, and above all cultivate the ground thoroughly by deep digging and constant hoeing. Never allow weeds to make headway, as many of them are allied to our garden crops and act as hosts for many pests in the absence of the more succulent garden product.

The Ground Cherry.

PRUNUS FRUTICOSA. SYN. P. CHAMÆCERASUS.

THIS is an interesting and rather pretty Cherry for the rock garden, forming long rather tortuous branches which do not rise to any great height from the ground. It is useful for planting near the top of a sloping bank, when the branches will extend to a considerable distance and, from their position, display the flowers to the observer. The flowers are pure white, borne in clusters of 3 or 4, while the small glossy green leaves are also attractive.

Notes.

Cytisus Ardoini.

A NATIVE of the maritime Alps, this is one of the prettiest of dwarf shrubs for the rock garden, and loves a sunny position in light soil. Barely growing more than six inches high, it makes a pretty mass of small hairy leaves surmounted by abundance of golden yellow flowers. It was very fine in Mr. Praeger's garden at Rathgar in the middle of May. It can be raised from seeds or cuttings, and is one of the parents of the beautiful *Cytisus Beauii*, now becoming very popular.

Viola Sieheana.

THIS little-known Violet has been flowering for some time in the rock garden at Glasnevin, and though of modest size is nevertheless attractive in its light blue flowers. Of tufted habit, the plants do not seem to attain any great size, and are apparently best raised from seeds frequently. It produces the showy flowers in early summer, and later on usually bears the inconspicuous green flowers which produce the seeds. This is, of course, a characteristic of Violets.

Diervilla præcox.

EASILY the earliest of the "Weigelias" to flower and coming in succession to the Forsythias, *D. præcox* is a very desirable shrub. The flowers are a very pretty shade of rose, and are freely produced on shoots of the previous year. After flowering, these shoots should be thinned out, leaving the new ones now growing to develop for next year.

Primula Sinopurpurea.

THIS striking new species seems likely to prove of great value for a moist bay in the rock garden. Having come safely through the past winter without any protection it appears to be quite hardy, and will undoubtedly be much grown when more plentiful. It is in many ways a remarkable plant. When the first flowers are expanding the leaves are from $3\frac{1}{2}$ to 4 inches long and about 1 to $1\frac{1}{4}$ ins. broad, lightly dusted with yellow powder on the under surface.

The flowers are produced from a main stalk, the individual flower stalks or pedicels being densely furnished with yellow powder, while the calyx is dark chocolate brown, the segments

edged with yellow powder. The whole effect of yellow pedicels, chocolate calyx and reddish violet corolla is very pretty. I understand that seedlings show some variation in colour, so that the above description may not exactly apply to every plant. There seems no difficulty in cultivation, for young plants put out last summer in a half-shady position in moist soil composed of loam and peat have grown well and are now flowering. B.

Macrotomia echioides.

A BRIGHT and early flowering plant of the Borage family and one which has been a glory this spring, when most things were very slow to move. During the cold, dry winds of late April it opened its soft yellow flowers, apparently indifferent to the arctic breeze, and it was equally good whether growing in light, dry soil on the rockery or in richer border conditions. When in flower it is not more than a foot high, and is therefore quite suitable for the rock garden. The soft yellow flowers are at first marked by a dark brown spot at the base of the petals, but these soon disappear. It is easily increased by means of seeds or root cuttings.

The Cress Rocket.

VELLA PSEUDO-CYTISUS.

THE finest specimen I have seen of this rather uncommon shrub is in Mr. Lloyd Praeger's garden, and must be quite three feet high and as much through. It is apparently perfectly hardy there on the south side of Dublin, and has never had any special protection other than occurs naturally from the walls bounding the garden. Although originally quite open to the sun, it is now greatly shaded by a laburnum tree which has grown up beside it, nevertheless the Cress Rocket continues to flourish. Now, in the middle of May, it is well furnished with its yellow cruciferous flowers. It is an evergreen with smallish leaves, which are furnished with stiff hairs. Propagation is easy by means of cuttings in summer.

Androsace Chumbyi Brilliant.

ANDROSACE CHUMBYI is said to be a hybrid of *A. sarmentosa* + *A. villosa*, and partakes, in habit, greatly of the first named. It bears umbels of rosy-coloured flowers very freely in May, and is a very desirable rock plant. In the form recently distributed as Brilliant the flowers

are of a deeper and more intense colour, quite distinct, and at once conspicuous on the rockery. Some people contrive to grow these delightful plants without any winter protection, but in any but the very driest parts of the country a sheet of glass is advisable. Any gritty, well-drained soil seems to suit them, and they are quite easily propagated. Some of the tinier species, however, are by no means easy either to grow or propagate; for instance, *alpina*, *helvetica* and *pubescens*, to mention no more. It is likely that our climatic conditions are unfavourable.

Androsace tibetica.

IN the July number of IRISH GARDENING 1915 this pretty plant was illustrated from a plant growing in the Royal Botanic Gardens, Glasnevin. We now illustrate the same subject cultivated in a pan for early flowering in the Alpine House. During the latter half of April, while the weather was still harsh and outdoor plants scarcely moving, it made a delightful picture in the shelter of the unheated Alpine House. During winter the leaf rosettes shrink into small tufts through the decay of the lower leaves and the incurving of the remainder, but with the brightening days of spring they expand and produce slender flower stems, each terminating in an umbel of white flowers, each with a yellow eye. At the same time stolons are produced which terminate in a new rosette of leaves, and thus the plant spreads, forming quite a colony of new growths which will flower the following spring. Seeds are not freely produced as far as our experience goes, and propagation by cuttings is not always successful. At present cuttings made of the young growths are being tried.

Lonicera ciliosa.

THIS pretty Honeysuckle is not often seen in gardens, but is well worth cultivating. The flowers are now opening on a sunny wall, where the orange-yellow flowers are quite attractive. The leaves are smooth and glaucous beneath the upper ones near the flowers being clasped round the stem. A native of British Columbia, it seems quite hardy in a sunny position, but in quite ordinary winters we have lost plants in a shady position in heavy soil.

B., Dublin.

Pittosporum bicolor.

A NATIVE of Australia, this interesting species is only suitable for wall culture, and in that way makes a useful evergreen. It is apparently

hardy if grown on a wall for a large specimen; on a sunny wall at Glasnevin is quite untouched and is now flowering freely. The leaves are about an inch and a half long, narrow, dark green above and densely downy below. The flowers are yellow, and although not conspicuously showy are nevertheless rather pretty when closely examined. Propagation is easy by means of cuttings of the half-ripened shoots in summer.

J. W. B.

Iberis tenoreana var. *petræa.*

DWARF in habit, scarcely more than three or four inches high, this is a delightful little plant for the rock garden. It requires a well drained position and likes to be wedged in between stones. The leaves are very small and dark green, and are surmounted by corymbs of pure white flowers.

Iris pumila cyanea.

THIS lovely dwarf Iris, though often quoted as a variety of *pumila*, is more likely of hybrid origin. In any case it is a most desirable plant for the rock garden or border, and has been flowering lately with remarkable freedom. The flowers are a beautiful shade of violet-purple, the falls being lightly feathered white towards the base, the beard also being white, adding greatly to the beauty of the flower. A sunny position in well drained soil suits it admirably, but it is so free and hardy that it will grow nearly anywhere.

B.

Roll of Honour.

STEPHEN GEORGE ROSE.

MANY readers will learn with regret that Mr. Rose has been reported "missing, believed drowned," and the sympathy of all will go out to his bereaved relatives.

A member of the office staff of the Royal Botanic Gardens at Glasnevin for over eight years, he joined the R.A.M.C. nearly two years ago, and was on his first voyage when he made the great sacrifice. Of a cheery yet modest disposition, Stephen was a general favourite with all with whom he came in contact, and at the Botanic Gardens, we have reason to know, his services were greatly appreciated. A clever photographer, with a deep love of flowers, many of his photographs have appeared in the pages of IRISH GARDENING. His knowledge of plants was considerable, and he took more than a passing interest in botanical science. A native of Santry, Co. Dublin, Mr. Rose was but twenty-five years of age when he gave his life for his country.

The Cultivation of the Leek.

WHEN Onions are realising such high prices as at present one is naturally led to consider whether any other member of the *Allium* family, having similar qualities, would make a fair substitute and impart a like flavour. The Onion is used widely in the preparation of soup; and in spring or winter the Leek makes a splendid substitute for this purpose, almost unequalled when skillfully used.

In the south of England the Leek is not so much appreciated as it is in Scotland, in Wales and in France. It is a fine vegetable where it is thoroughly understood, and when well treated there is nothing of its class that can surpass it in flavour and wholesomeness. The Leek is very hardy, and this is probably one reason for its popularity in climates which are liable to severely cold weather. It seems to have been the only plant of the *Allium* tribe known in England in pre-Saxon times, and it is probably from the fondness of the Celtic tribes for this esculent that their descendants, the Welsh, still retain it as an emblem of their nationality. The *leac*, or *leak*, was also an important table vegetable amongst the Anglo-Saxons, for they called their gardens "leek gardens" (*leac-hun*) and the gardener was a "leekward" (*leac-weard*). As other species of the same tribe were introduced they were also called Leeks, with a prefix denoting some peculiarity. Garlic was anciently *gar-leac*, the Leek with spear (*gar*) from the spear-like stem and head of the seed vessel; and an Onion was *enne-leac*, or one-leek, from its not throwing off side bulbs. Thus it appears that *leac* or *leak* was a general name for a certain kind of herb.

Large breadths of Leeks are grown in France, in the neighbourhood of towns, and on the borders of the river Seine, as they are much valued by the French, who study cookery more than most nations. The writer saw a large plot from the top of the Chateau at Boulogne, and, asking what it was in the distance, was told "pour la soupe," the guide considering the reply readily understood, so much are Leeks used in France to make soup.

There are many varieties of Leeks, with varying reputations, and among them may be mentioned the following—viz., the London Flag, Musselburgh, Carentan, Rouer, Emperor, Lyon, Renton's Monarch, Sutton's Favourite, Dobbie's Prize, &c. The Musselburgh and Lyon are those mostly grown in Great Britain. The characteristic of hardiness is most important, as the Leek that stands a severe winter is the most reliable. Rouer, Musselburgh and Carentan are worthy of notice as especially excelling in this respect.

A moist, rich soil suits Leek cultivation, and it flourishes in the valley of the Thames or on low-lying ground of marshy character. In market-garden culture it is well to sow a large seed-bed in March and a successional one in April. About 10 lb. of seed would suffice to sow an acre of ground. The price of seed is about 8s. to 10s. per lb. The seed may be sown broadcast, or may be drilled: in the latter case the rows should be 12 inches apart. As land is cleared of early summer crops, the surplus plants may be transplanted to the vacant ground, leaving in the seed-bed a fair crop about 6 to 8 inches apart from plant to plant. In the Musselburgh district in the Lothians the Leeks are never drilled, but are transplanted, or *lined*, to use the local term, from seed-beds on to ground from which spring Cabbages or early Potatoes have been cleared. Plants remaining in the seed-bed will be ready for market before the transplanted ones, and if they are well cared for by dressing them with sixty bushels of soot or 2 cwt. of nitrate of soda, followed by thorough hoeing, they will make a fair sample. A great quantity may often be bunched off a seed-bed, as the plants stand thickly on the ground, and more Leeks may be lifted from a rod of seed-bed than from a transplanted plot of the same area, since in the latter case the Leeks are set out at regular distances.

A bunch may contain 5, 7 or 9 Leeks, according to size, and the bunches are made flat.

Before planting out it is usual to lay the plants evenly together, then with a spade strike off some of the long foliage, as it would never lift up again, and would only be a drag on the plant.

Formerly it was customary to stir the soil among the transplanted crop with a long-handled hoe with an 8-inch blade, but better work is done with a short-handled hoe having a 5-inch blade, as the workman can move the ground closer to the plant, and thus give it more air and allow the rain to circulate where it is really needed. Naturally, the latter plan costs rather more, but the work is more efficiently executed, as the operator is nearer his task and moves the soil round the stem of the plant without fear of cutting it off.

Leeks are generally washed before they are marketed, as then the bleached portion shows up more effectively. For exhibition purposes, Leeks are frequently placed in a small trench, and the rows placed wider apart: the soil is then drawn to them, so that a larger part is blanched, and the bunched plants look very attractive. In growing Leeks for profit, however, the usual method is to plant on the level, as a larger amount of produce is thus obtained.—*Journal of the Board of Agriculture,*



MR. STEPHEN ROSE.

Photo by Keogh Bros.

Suburban and Allotment Gardens.

THE fine weather of May has helped to make up for the bad weather conditions in previous months, and the crops at present should be in good condition. The most essential operation for this month is that of hoeing and weeding. The value of hoeing, or loosening the surface soil, cannot be too often stated: not only are the seedling weeds killed as they appear above ground—thus leaving more food material in the soil for the cultivated crops and more room for them to develop—but the loss of water from the soil surface is greatly checked, as water will not rise rapidly through an extremely loose layer, more especially when such a layer gets dusty: this operation, then, enables the plant to get more water than it otherwise would, and water is perhaps the most essential element in the cultivation of plants. The soil also becomes better aerated, plant roots breathe more freely, growth becomes more vigorous, useful soil microbes work with increasing activity. As a general result plants grow much better where the ground is well cultivated or hoed, and the resulting crop is heavier, of better quality, more free from insect pests and plant diseases.

WATERING.—When watering is absolutely necessary, it should be done thoroughly, so that the soil gets drenched to a depth of not less than six inches. Surface sprinklings, by keeping the surface only moist, cause the roots of plants to rise to the surface (the roots of plants move towards moisture in the soil), and when that surface becomes dry, as it does after a few hours' sunshine, the roots also become dried up and die, whereas if the soil had not been so treated they would have remained below in the moister soil layers.

LIQUID MANURING.—As the crops begin to grow and show signs of vigour, it will be found that applications of manure in a liquid form will result, in most cases, in increased growth. Liquid manure can be made up in various ways, such as (1) putting about a pailful of cow or other animal manure, along with a similar quantity of soot, into a coarse sack and suspending this in a forty-gallon tub of water for a few hours before using, (2) Placing a couple of teaspoonfuls of artificial

manure, such as guano, nitrate of soda, superphosphate, sulphate of ammonia, dissolved bone compound, &c., into a can holding about a gallon of water. When leaf development is desired, manures rich in nitrogen, such as urine, sulphate of ammonia, pigeon manure, &c., should be used. For the production of roots and fruits of good quality, potash manures will be valuable, but difficult to get at present (put into the tub or barrel a quantity of bonfire ashes, obtained by burning weeds, hedge clippings, &c.). For Peas, Beans, Flowers, Turnips and shallow rooting crops and for early fruits phosphatic manures will be valuable, such as superphosphate bone compound or potato manure.

PLANTING OUT AND TRANSPLANTING.—Advantage should be taken of wet weather to get quantities of the various winter vegetables planted out. Winter vegetables are usually most expensive to buy, and therefore most valuable to grow. Cauliflowers, Brussels Sprouts, Savoy Cabbages and Broccoli should be planted as early as possible, on well-manured ground, allowing about 24 inches between the rows and from 18 inches in the case of Cauliflowers, to 24 inches in the case of Broccoli, between the individual plants. Lettuce plants can be planted between the rows as a catch or companion crop, or Radish, Spinach, Cress and other *rapid* growing crops can be sown. When lifting plants for planting out they should be lifted with a



ANDROSACE TIBETICA.

Photo by R. M. Pollock.

good ball of soil around them. Celery plants should be planted at about 10 inches apart in well-manured trenches. Vegetable Marrows should be planted on mounds of manure and refuse, or else in trenches or squares, each holding about a barrow-load of manure, on top of which should be placed about six inches of surface soil. If hot sunshine occurs immediately after planting, the plants should be slightly shaded for a few days, and kept well watered. Ridge Cucumbers can be treated similarly.

SEED SOWING.—Make further sowings of Turnips, Peas, Beans and Parsley for autumn supplies.

PEAS AND BEANS.—These will require staking. Short branches and twigs of beech trees make very efficient stakes, these should be pointed and inserted into the ground about 12 inches, putting them in a double row around the Peas. Where this kind of material is difficult to obtain, gas pipes or Dahlia stakes can be driven into the ground on each side of the row, and at intervals of about

8 feet. Horizontal strings (binder twine for preference) can then be tied around the stakes at from 3-6 inches apart, thus supporting the plants.

POTATOES should be earthed up as soon as they are about five or six inches high. The soil should be first dry or forked over between the rows and then placed gently against the plants, forming a Λ shaped ridge; where the plants are in long beds, the soil in the alleys should be broken over, and then placed very carefully over the whole bed about three inches deep.

PLANT PESTS.—Spray Carrots and Onions regularly with nasty solutions, such as mustard water—making a dessertspoonful of mustard do a gallon of water—paraffin emulsion, or carbolic soap solution: this treatment keeps away the fly, and thus prevents attack by the maggot which arises from the eggs which the flies deposit. Watch Broad Bean tops carefully as soon as black fly appears, pinch off the tip, provided that there are about four sets of flowers below, if not dip the young shoots into a bowl containing soapy water.

FLOWERS.—Those who wish to get good Wall-flowers, *Polyanthus*, &c., for next season should sow seeds at the beginning of the month if not previously done, choosing well prepared soil and a sunny spot. As the spring flowers of bulbs, &c., fade pick them off before seeds are formed; this will conserve the energy of the plant for next year's flowers. Plant out such flowers as may be deemed desirable as soon as possible.

FRUITS.—Give the various fruit trees and bushes applications of liquid manure: this will help to increase the size and quality of the fruits.

The Skunk Cabbage.

LYSICHIUM CAMESCHATCENSE.

IN our May issue last year Mr. Beckett contributed a note on this striking plant, and we are glad to be able to illustrate it now from a colony in the bog garden of the Royal Botanic Gardens, Glasnevin (see page 81).

The common name would appear to suggest that the plant is not profoundly popular in its native habitat, but in our gardens it has at any rate the merit of novelty. A member of the Aroid family, the huge yellow spathes are quite showy from a considerable distance away.

Flower Associations.

A GREAT deal of enjoyment in hardy flower gardening is derived from planning contrasts, harmonies and associations. Sometimes one or other occurs accidentally in the border and gives rise to ideas for the future. In our illustration "Pyrethrum and Poppy" (page 85), the photographer has "happened" on a beautiful contrast, two of the most beautiful of our early summer-flowering plants blooming together with the happiest possible effect. There is no more lovely colour to be found among hardy plants than is shown in the flowers of *Papaver Jenny Mawson*—a lovely rosy-salmon, while *Pyrethrum Aphrodite* still holds its own as one of the finest double white varieties. Here then we have two of the hardiest and most easily grown perennials forming a picture no artist could excel.

The Application of Botanical Science to Agriculture.

A STUDY of the literature dealing with agriculture indicates that there is some confusion of ideas as to the precise relation which exists between the science of botany on the one hand and the practice of agriculture on the other. In the present paper, an attempt has been made to define the bearing of the scientific aspect of the vegetable kingdom on the economic development of crop production and to show how a knowledge of this science can best be applied to agricultural problems. For any real advance to be made in crop-production, a thorough scientific knowledge of botany in all its branches is one of the first conditions of progress. This will be clear if the real problems to be solved are considered in all their bearings.

The attempt to improve cultivated crops by scientific methods is a recent development and can be traced to two main causes—(1) the gradual recognition of the fact that in agriculture the plant is the centre of the subject; and (2) the rapid rise of the study of genetics which followed the re-discovery of Mendel's results in inheritance.

The importance of the plant in crop production may be said to be generally recognized at the present time. A large number of botanists are being employed at Experiment Stations and the public have often been led to expect that a revolution is about to take place, particularly through the application of what is popularly known as Mendelism. A critical examination of the literature discloses some signs that these extravagant hopes are not likely to be fulfilled, not that these hopes are impossible but rather because the problems have not always been taken up on a sufficiently broad basis and attacked simultaneously from several standpoints.

THE DEVELOPMENT OF BOTANY.

The more recent developments in botanical science are fortunately all tending to a study of the plant as a living whole. Both the scientific study in the field of plant associations (ecology) and the systematic examination of the various generations of plants raised from parents which breed true (genetics) are doing much to mitigate the evils which follow from undue devotion to purely laboratory work. Ecology and genetics are taking the botanist into the field and will, in all probability, materially influence the future development of the science. This will be all to the good and should do much both to raise the standard and emphasize the importance of field work and also develop the natural history side of botany. The botany of the future is likely to combine all that is valuable in laboratory work with modern ideas on ecology, classification, and genetics.

THE RELATION OF BOTANY TO AGRICULTURE.

A wide scientific outlook on the many aspects of plant life is the first condition in applying botanical science to practical problems. The next step for the botanist is to study his crop in the field and to learn to appreciate the agricultural

aspects of crop-production. The investigator must himself be able to grow his crop to perfection, and it is not too much to say that no real progress can be made without this. The ordinary agricultural processes applied to any crop bear a direct relationship to the physiological necessities of the plant and have been evolved from centuries of traditional experience. In all investigations on crops, a first-hand knowledge of practice is necessary, and nowhere is it so important as in plant-breeding work where practice is quite as valuable as an acquaintance with the methods and results of genetics. The greatest devotion to the study of inheritance, using for this purpose material indifferently grown, is largely labour lost, as many characters are masked unless the plants are really thriving and well developed. For instance, in wheat, the red colour of the chaff never develops in badly grown plants, thereby causing great confusion in systematic and breeding work on this crop. In tobacco, the various leaf characters are almost entirely masked by bad cultivation, and their inheritance can only be studied if the crop is grown to perfection.

Science and practice must be combined in the investigator who must himself strike a correct balance between the two. The ideal point of view of the improver is to recognize agriculture as an art which can best be developed by that instrument called science. Once this is fully realized and acted upon, the place of the experiment station in agriculture will be understood as a matter of course and the qualifications needed by the workers will be self-evident. There will be little or no progress if practical agriculturists are associated with pure scientists in economic investigations. This has often been tried and has never yielded results of any importance. The reason why such co-operation fails is that without an appreciation of practice the scientist himself never gets to the real heart of the problem. The history of the indigo investigations in India is a very good case in point. During the last 20 years a number of scientists have been employed in an endeavour to improve the production of natural indigo. Over £50,000 have been expended on this work between 1898 and 1913, but no results have been obtained, largely because the scientists preferred to engage European assistants on indigo estates to grow their experimental crops rather than to cultivate them themselves. The result was that the real problems were not discovered, a large amount of ineffective work was done and valuable time was lost during which the natural indigo industry declined and the synthetic product rapidly established itself in the markets of the world. The solution of the indigo problem has recently been disclosed by a study of the plant in the field. It is not too much to say that if a properly qualified botanist with a knowledge of agriculture had attacked the indigo problem twenty years ago, the history of this industry would have been very different.

There remains for consideration the commercial aspect of investigations on crops and the necessity, on the part of the worker, of keeping in close touch with the requirements of the trade. Particularly is this important in the case of materials used in textile industries like cotton where any marked alteration in the raw product might easily involve extensive changes in machinery. In the case of cereals like wheat, it

is necessary in improving the variety to follow closely the needs of the manufacturer and to ensure that any new types introduced into general cultivation can be utilised to advantage. The successful merchant often possesses information which is of the greatest value to the botanist and which helps the investigator to perceive the manner in which an improvement can most effectively be made.

That a combination of science, practice, and business ability in the same individual is essential in all agricultural investigations dealing with the plant will be evident if the kind of problem awaiting solution is considered in detail. Many of these questions fall into the following three classes:

(1) IMPROVEMENTS IN THE EFFICIENCY OF THE PLANT.—Any attempt to increase the output of a crop can only be successful if the physiology of the plant is considered together with the economic aspects of production. Such problems have to be solved within the working conditions of the plant factory and also within the general economic limits imposed by labour and capital. In such matters, the investigator might easily go astray unless he keeps the laws of plant physiology in view and unless he is fortified by a knowledge of practice and an appreciation of the general working conditions.

(2) THE TREATMENT OF DISEASE.—The inadequacy of much of the experiment station work on the diseases of plants, in which fungi and insects are concerned, has recently been referred to by Professor Bateson in one of the sectional addresses to the British Association.

In the course of his speech, this gentleman drew attention to the fact that there is at the present time hardly any comprehensive study of the morbid physiology of plants comparable with that which has been so greatly developed in application to animals. The nature of the resistance to disease characteristic of so many varieties and the methods by which it may be ensured, offer a most attractive field for research, but it is one in which the advance must be made by the development of pure science, and those who engage in it must be prepared for a long period of labour without ostensible practical results.

(3) THE CREATION OF IMPROVED VARIETIES.—In this work an understanding of the needs of the crop and a knowledge of systematics and genetics must be combined with the insight of the inventor, no possible scientific method can succeed without the intuition of the breeder. Any attempt to obtain or record the characters of large numbers of plants and to obtain the final selections by a scientific system of marks is hopeless, as the investigator would be speedily swamped by the volume of his material. The insight of the breeder is necessary for the work and the judgment, which comes by practice, in the rapid summing up of essentials by eye is far more useful than the most carefully compiled records of any system of score cards. The successful plant breeder is to a large extent born and not made. Science helps the born breeder by providing him with new and better instruments, and, by bringing knowledge to bear from many sides, it accelerates the output and lightens the work in a multitude of ways.—*The Agriculture Journal of India (Monthly Bulletin of Agricultural Intelligence)*.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill,
Shane's Castle, Antrim.

KITCHEN GARDEN.

THE month of May so far has been all that could be desired, in fact some of the days have been like midsummer, the sun has been so hot. The work in this department has been going on apace, and work that was so much in arrear has been well advanced. Before proceeding with the work I should like to say that some people who are cultivating vegetables for the first time instead of flowers will find it is much more difficult to grow vegetables than it is to grow flowers: they require attention all the time, and much more generous treatment. Seedlings are coming up a fine bit, all they want is to keep the scuffle going between the rows. Brassicas that have come up thickly in the seed-bed are better to have a lot of them pricked out into a nursery bed: for the final planting they will be far and away the best plants, and will repay the extra labour. Thinning will have to be done with the Parsnips, Turnips, Beetroots, Carrots, Onions, &c.: thin on a moist day if possible.

Onion Maggot and Carrot Fly in some gardens and in some seasons are very troublesome, in fact fatal sometimes. Spray lightly a heap of fine sand with paraffin, and dust it up each side of the lines in both cases. (Vaporite is also a good preventive.) They prevent the parent fly from laying her eggs. If the plants are attacked pull up and burn them, repeat the process of dusting, and firm the remaining plants with your foot as close as you can safely tread.

CELERY.—Take advantage of the first dull day when your plants are ready to get them planted out: see that the trenches are well prepared. A liberal dressing of cow manure in the bottom and 2 or 3 inches of the best of your soil on top, a dressing of salt before planting I find beneficial. If you are planting double rows, which I think is most economical, plant 1 foot apart in 2 feet trenches, and 3 feet between the trenches will give ample soil for earthing up: after planting give them a thorough watering. Celery requires plenty of moisture all the time.

CAULIFLOWERS.—Continue to plant out Cauliflowers for late supplies, making each plant thoroughly firm in the soil. Cauliflowers already planted should be examined and any blanks made good. As Cabbage plants from spring sowing become fit plant out in rows 2 feet apart, or less, according to variety. Later on in the month Broccoli for winter and spring use will require to be planted out into permanent quarters. In planting Broccoli make the ground firm, as they will grow sturdier and better able to stand the winter. The last batch of Brussels Sprouts should also be planted this month (overcrowding any of the late Brassicas should be avoided).

Stake Peas and Climbing Beans, as they require attention in that way. A sowing of late Peas may be made the first week in June. Autocrat or The Gladstone are both good: later on in the

month a small sowing of some early sort may be made as a catch-crop. At regular intervals make further sowings of Turnips, Spinach, Lettuce, Endive, Radish, and French Beans. Select a north aspect for Turnips and Lettuce this month, they keep much longer fit for use.

ASPARAGUS.—By the latter end of the month cutting of all shoots should cease, taking care to leave growths as far as possible all over the bed: give the beds their final dressing of salt, and if possible a good drenching of liquid manure in exposed places: the strongest growths should be supported.

VEGETABLE MARROWS.—Plants growing in frames or under temporary shelters may now be exposed: carefully thin the shoots, removing any useless growths, and keep both the roots and leaves well supplied with water: successional plants should be planted now in well-prepared beds, choosing a sheltered sunny position.

POTATOES will require attention in the way of forking between and moulding up.

TOMATOES which are grown outside (there is always the chance that they might do on a sunny wall or trellis) will want all the side shoots rubbed out when quite young, keeping each plant to one stem only: a light mulch of well-decayed manure will help them, and they will not require so much water. Tomatoes require very careful watering.

FRUIT GARDEN.

Fruit trees on the whole are looking well this year. Gooseberries and Currants look extra well. Apples, Pears and Cherries had abundance of blossoms: Plums seem a bit scanty as regards bloom. This month so far has been most favourable for setting. As soon as the Cherries begin to colour they should be carefully gone over and pinched, and any young shoots laid in, then net them at once, or the birds will soon make them scarce.

STRAWBERRIES will be swelling: they should have a final soaking of water before the nets are placed over them.

PEACHES on walls will require daily syringing: pinch off superfluous growth, and tie in remaining growth with raffia: pick off any curled leaves. For most fruit trees July will be time enough for principle stopping. Tie up leaders of Cordons as they grow: where greenfly is prevalent syringe with Quassia Extract.

Young trees which were planted in the autumn should not suffer for want of water. The surface soil in all fruit borders should be kept stirred with the scuffle or Buco cultivator. If weather is dry, all fruit trees will require liquid manure (if available) as soon as the fruit is set.

FLOWER GARDEN.

Spring bedding is very late this year. The Wallflowers and Myosotis are just at their best now (18th), so that will mean June planting. The new occupants of the flower beds will require careful nursing to start them. If the weather is at all dry give them plenty of water and stir the surface soil between the plant, pinch off first flowers and they will soon fill their allotted spaces. Maintain a neat tidy appearance by keeping grass mown, edges clipped, and walks scuffed and raked.

Stake Sweet Peas, also Dahlias, as soon as

they are planted, so as to avoid injuring the tubers by driving the stake in later.

Attention should be given to any Roses that shows signs of greenfly, mildew, or other pests: spray in the evening with Quassia Extract until they are clean. Climbers on walls and trellis will require the young strong growths tied in.

The most of our beautiful early flowering shrubs require to be pruned carefully as soon as they finish flowering. The most of them flower on the growths made the previous year, so that any growths that have flowered can be cut out—that is, according to the shape or size you want your bush, but sometimes they are better left to Nature.

The seed pods on Hybrid Rhododendrons and Azaleas are better picked carefully off when young.

Keep the scuffles going in the flower border, and rake between the plants and shrubs: if the weeds get too big, hand-weeding will have to be resorted to. Stake all herbaceous plants that require it: they can never be tied satisfactorily if they once get sprawling about.

Thin out growths in Phloxes if large trusses are in request, and they will well repay for the trouble. Do not neglect spring flowering plants, such as Aubrietias and Arabis, that have been lifted, and of which you will require cuttings. Sow Pansies and Polyanthus in boxes or beds, also Double Daisies and Myosotis if not already done.

According as boxes and pots are emptied they should be carefully stowed away for future use. Keep a small reserve of bedding plants in case of failures in any of the beds, potting them on or planting them in the frame ground.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Barrymore, Fota.

KITCHEN GARDEN.

SINCE writing my last notes we have experienced a long spell of dry weather, which lasted nearly a month, but has now happily broken. Speaking generally it was a great boon, for it enabled the cultivator to keep down weed growth in a remarkable manner, and the frequent use of the hoe by loosening the soil stimulated growth, and the only necessity for watering was where small seeds were sown, more especially broadcast, such as the Brassicas, and, of course, early crops of vegetables in frames and newly-planted Cabbage, Brussels Sprouts, Lettuce, &c.

Fortunately, up to the time of writing (May 19th) we have escaped any frosts capable of doing damage, and early Potatoes are looking remarkably well.

POTATOES.—The earliest varieties will be fast maturing and many lifted this month. Preparations must then be made for next season's crop by selecting suitable tubers. If the tubers have practically finished growing I prefer to have the tray at hand and put them in straight away, carefully labelling, and leave them exposed to the air, and a fair idea will then be gauged of next year's requirements. If, on the other hand, the tubers are immature, leave a few rows to ripen off for seed purposes.

When digging, well fork up the ground and expose every Potato, large and small, otherwise self-sown sets will be a great nuisance the following season, and leads to roguing if planted with

Potatoes again. Attend to the spraying of maincrop Potatoes about the end of the month, thoroughly well moistening the under as well as the upper part of the leaves, and earth up as becomes necessary.

ASPARAGUS.—The cutting of the growths must cease towards the end of the month so that sufficient growth is left to mature the crowns for next year's supply. During warm and growing weather, unless cutting is carried out daily, much valuable produce will be lost. The person acquainted with the beds must use his own discretion and treat the stronger and weaker beds and portion of same accordingly. If the necessary labour can be spared now is the time to assist the plants with copious waterings of diluted farmyard manure and dustings of artificial manure in showery weather. This is preferable to winter dressings, although these, or course, benefit the beds in time. I do not advocate sowing Radishes on the surface of the beds, but keep them perfectly clear from all other growth, but the alleys may be cropped with Cauliflowers, &c.

WINTER GREENS.—The planting of these will commence this month, and before doing so a certain amount of consideration is necessary. Only those that mature early in the winter should be planted where the ground will be required early in the New Year for next season's crop, and in gardens where the ground was well done for the preceding crop no further manure need be applied, simply levelling down the ground and making firm before planting. Early Savoys may be planted 18 inches each way, but more space must be left for Drumhead and larger varieties. Broccoli in variety must be kept to themselves, so that the particular piece of ground they occupy may be cleared in reasonable time. They enjoy good ground, but firm, otherwise they become soft and liable to injury of a severe winter, such as last, and if holes have to be made with a crowbar it is really preferable. After the moulding up of Potatoes winter greens may be planted, and if the growth of the Potatoes can be kept upright by means of stakes and twine, both of the crops will be benefited. All available spots should be planted where there is any likelihood of success, such as between orchard trees, where there is sufficient light and air. Water well at the roots if necessary.

LEEKs.—Plant these as soon as large enough in well-worked and manured soil by making holes a foot deep and 9 inches to a foot apart, and rather more between the rows, dropping the young plants to the bottom and covering the roots with a little soil.

PEAS.—Continue to sow main crop, and towards the end of the month good late varieties which, by reason of their strong foliage are able to withstand drought and other drawbacks. Make sowings in various positions where accommodation for a row may be found, and early varieties frequently give good returns when sown: late picking of pods should be carefully and economically done, selecting only those that are quite fit, and carefully examining the bottom of the rows where the earliest are produced, as if allowed to remain and ripen, quickly reduce the vitality of the plant and impair its further fruiting.

An apron with a large pocket or pouch is a great help, enabling the work to be done more readily, and freeing both hands, so that the minimum amount of damage is done to the haulm. The same remarks apply to Runner Beans.

CELERY.—Plant out the maincrop as the plants become ready and before too large, choosing showery weather for preference. Dust freely with soot in the early morning, also all other growing crops. I only wish I had a larger available supply. Earliest plantings of Celery if growing away freely may be helped with a little stimulant. Nitrate of Soda at the rate of a teaspoonful to each plant, and watered in or dissolved in the water at the rate of 1 oz. to the gallon, will greatly assist formation of stem and leaf. Continue to sow such catch crops as Lettuce, stump-rooted Carrots, Turnips, Radishes, wherever a chance vacancy occurs. Where continuous supplies of the latter and Mustard and Cress are required, select a cool shady border and treat in three divisions for each, resowing as soon as each section is fast, and shading heavily with a damp mat until germination takes place.

Globe and other Beet may still be sown with ample time for proper development and a line of Swede Turnips. Dust the ground freely with wood-ashes for all root crops, and attend to the thinning, as recommended last month, and keep the hoe going whenever possible, as it is labour well spent.

THE FRUIT GARDEN.

The principal work in this department for the present month will be the freeing of Aphid and other attacks of insects from the various trees and bushes, and the weather conditions will considerably help or mar this work. The majority of fruit trees, commencing with those on the warmest walls, will need attention as regards summer pruning where this is done with a view to assist in the formation of fruit buds at the base of the spurs for next year. This in my opinion can hardly be done too soon. Some people aver that if done too soon the basal buds will grow away, but I have never seen any ill-effects that way, and find that the two upper buds usually act as safety valves, and I can hardly think that any benefit can result from summer pruning, as far as the formation of fruit buds is concerned, when the work is left till the wood is quite hard and necessitates cutting with the knife. Gooseberries and Currants may be similarly treated before netting if time permits. When picking green Gooseberries, do so with a view to thinning the crop of fruit and assist those to remain. Keep a sharp look out for the caterpillars of the Gooseberry Sawfly, which if allowed to go unchecked will quickly defoliate whole bushes. Hellebore Powder and Arsenate of Lead used as directed are the best remedies against the pest, but both being poisonous must only be used when the fruit is immature. Another handy remedy which is often close at hand, and, furthermore, handy perhaps for many amateurs, is to dust a little Keating's Powder amongst the bushes when the foliage is damp.

THE FLOWER GARDEN.

The bedding out of the summer occupants of the flower borders will be in full swing, and here again if showery weather prevails much assistance will be rendered. Remove the flowers from the various plants, as this will encourage the formation of growth necessary for an added display later on. Where standard plants are used either as plunged plants or planted out, staking should be done immediately after planting to prevent disturbance from winds. Continue to sow any annuals for late blooming and thin out growths

on herbaceous plants where too thick before staking. Look out for and syringe Roses growing on walls and pillars against aphid, and loosely tie in any growths that may require attention.

Roses that suffered with the winter's frost, but are now growing freely, will be considerably improved and restored by a dressing of a quick acting patent manure. Remove the faded flower trusses from Rhododendrons, especially young plants of better varieties, which need encouragement, and a dressing of rotted farmyard manure and leaf-mould to beds or specimens—now that growth is about to be made for next season's display—will be of much assistance. For a spring display these are hard to beat, and should be utilised whenever possible in place of commoner subjects for forming screens and blotting out unsightly objects. Two subjects now in flower, each being gorgeous, are *Embothrium coccineum*, the Fire Thorn, and clumps of *Azalea amana*.

Review.

A Good Book.*

THE imaginative man might think from its title that this is a book of encyclopædic size; but it contains only 152 pages, index and illustrations included. The author, in his "few well-chosen words" of preface, explains that it is written for amateur gardeners and that it is published in as complete a form as space will allow. He asks those of his readers who are confronted by problems that they cannot answer from the pages of his book to refer to the Editor of *The Gardener*. "Poor Editor" we thought as we plunged into the reading of the book, but after a page or two we found ourselves musing: "That Editor won't have such a bad time after all." The chapter on Border Carnations converted us, and when we had finished the book we vowed we would give the author a good mark. The book is a most excellent work, and though we must perforce agree with the author that gardening is a progressive craft and gardening books grow old, yet good things are longest-lived and most permanent, and, except for the names of varieties of fruit, flowers and vegetables, we see no reason why Mr. Thomas' book should be out of date for many a long day. We fancy the book was written before the Food Controller came upon the scene, else possibly more space might have been allotted to vegetables and fruit at the expense of flowers. All true gardeners will be thankful that Mr. Thomas has not altered his proportions to suit the craze of the moment. When the war is over and our surviving warriors, men and women, return to resume their normal modes of existence, we fancy they will be most grateful to those who can bring them where they can see plenty of flowers and perhaps hear good music. Let us not be thought to refer disparagingly to the craze of the moment—vegetable and fruit growing for many years to come will probably be the best public service non-combatants can engage in, whether professionally or in their leisure hours; but in war time as well as in peace time it is true that "man does not live by bread alone." Yes, this is an excellent book, and we commend it heartily to our readers.

* "Gardening: A Complete Guide." By H. H. Thomas. With numerous Illustrations. 1s. 3d. net. Cassell & Co., Ltd.

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Irish Gardening

Contents

	PAGE		PAGE
Forestry	97	Compost for the Garden	107
The Arboretum	98	The Farm Garden	107
Primrose Evelyn Arkwright	99	Irises	107
Chinese Rhododendrons (Illustrated)	100	Women on the Land	108
<i>Æthionema grandiflora</i>	100	Answers to Correspondents	108
Plants and the Winter	101	Suburban and Allotment Gardens	109
Notes	102	The Month's Work—	
Grass Land and Ploughed Land	104	Midland and Northern Counties	110
A Rare Insect	106	Southern and Western Counties	111
Gardens in War Time	106	Paeonies	112



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EDITOR—J. W. BESANT

Forestry.

At the recent annual meeting of the Irish Forestry Society Mr. A. C. Forbes, Chief Inspector of Forestry in Ireland, gave a brief address, alluding to the enormous amount of timber at present required by the military authorities, the shameful scarcity of home-grown material, and our lamentable dependence on importations, at present largely cut off owing to the exigencies of war. By means of diagrams Mr. Forbes showed how small our wooded area is compared with Continental countries and how great our importations in peace times. Since the war began enormous quantities of timber have been felled at home to supply the urgent needs of the army, and what this means in a country such as Ireland, now comparatively bare of timber, can only be realised by those who know the well-managed State forests of other countries.

It is absolutely imperative that the shortage in our forest area should be made good at the earliest possible moment. Until the war is over it may not be possible to vote any large sum of money for the purpose, but one thing can be done, and that is the public must be made to realise that reforestation is an urgent national question affecting the material prosperity of everyone of us. To this end every qualified person should feel it a duty to continually keep the subject in the mind of every citizen. Private individuals should lose no opportunity of urging reforestation on every possible occasion. Municipal Councils, County Councils, and Urban and Rural District Councils ought to pass a resolution at every meeting calling on the Government to make reforestation one of the first problems to be tackled when the war is over. We do not believe in appealing to the

Government, when in many cases private and local enterprise could achieve much, but in our opinion reforestation will only be a success when taken in hand by the Government and worked as a national industry. There is no lack of competent Foresters who have in the past pointed out what would surely happen in the event of overseas supplies being cut off, and who have submitted scheme after scheme for Government approval, but the result has been invariably the same—the Treasury would not provide the money.

The national expenditure during the last three years has been something stupendous, far beyond the comprehension of the average man, but it may have a good effect on the official mind. Recently millions have been disbursed with far more alacrity than hundreds were before the war. Is it too much to hope that with the return of peace, the doors of the Treasury will be less tightly closed against all appeals for money to carry out works of the most imperative national importance?

Every man (and woman) who has a vote should make it a duty to ensure that all candidates for Parliament or council are pledged to support reforestation; every successful candidate should seize every opportunity of urging the claims of forestry as a great national industry. The rural population from the school onwards must be taught to regard forestry as a healthy remunerative occupation far more valuable than turbary rights or any other rights, which in many parts of the country hamper progress and bring the best planned schemes to naught. The members of the Irish Forestry Society should be among the foremost in pressing the claims of reforestation. The Scottish

Arboricultural Society is already deep in the subject, and the last issue of their journal is full of interesting matter both from private estate owners and from professional foresters.

This journal is largely devoted to Horticulture and Arboriculture, but we shall be glad at all times to assist the allied industry of Sylviculture (forestry) as far as lies in our power.

Everyone of us should have always in the mind's eye the bare hillsides of Ireland clothed with Larch, and our boglands with Pine, where long ago it flourished. We need not enlarge on this, as there are competent men who know well what to plant and where to plant it.

The Arboretum.

ALTHOUGH many losses have occurred among the more tender shrubs, it is truly wonderful the fine display most of our old and well-tried favourites have made and are still making. Many plants are flowering later than usual this season, yet, compared with last year, there is less difference now than there was a month ago. Last year at this time we had to deplore a spell of bitterly cold weather in early June, as reference to IRISH GARDENING for July, 1916, will show; this year early June has been comparatively warm and genial. Similarly last year I remarked that Chestnuts and Thorns were the chief flowering trees in June, and apparently they are just in the same position this year. Nothing could be lovelier than the pink Chestnuts and the white and pink Thorns at the present time—viz., the 11th June.

Roses strike one as being the latest of all shrubs to come into flower this year, and as yet none of the garden hybrids are in flower, and only a few of the wild species. A year ago the beautiful *Rosa Moyesii* was blooming finely in June, but as yet only the fat buds are noticeable, though they will be open ere these notes appear in print.

Diervillas are most reliable flowering shrubs, and are lovely about the grounds now, every last year's shoot wreathed with flowers varying through shades of pink to deep red and white. A very fine Broom not often met with is *Genista rumelica*, its long slender shoots at present smothered in bright yellow flowers. It is apparently not a tall grower, the shoots tending to arch over towards the ground as they lengthen and especially when furnished with flowers. It makes a lovely mound on a bold promontory of the rock garden, and would make a lovely display clothing a sunny bank: from Bulgaria,

G. rumelica is apparently perfectly hardy, having come through the late winter unscathed. Of somewhat similar habit, but rather stiffer, is *Genista spathulata*, from the same country; both make useful dwarf shrubs for sunny positions. Mr. T. Smith, of Newry, has another pretty plant, near, if not identical with *G. spathulata*, and which he calls *G. depressa*: it, too, is flowering now, and is equally valuable for the rock garden and for clothing sunny banks.

Despite the many fatalities resulting from the severity of the past winter there are many consolations. *Deutzias*, with a few exceptions, survived grandly, and are now making a fine display. *D. gracilis* and its varieties are among the prettiest of deciduous flowering shrubs in districts where they do well; the pink and rose-coloured varieties are decidedly attractive and the large-flowered white variety, *venusta*, is a great acquisition.

D. kalmiæflora is a beautiful hybrid between *D. purpurascens* and *D. parviflora*; the flowers rather resemble those of *Kalmia* in shape, as the specific name implies, and are rose-coloured.

D. longifolia and its fine variety *Veitchii* are beautiful shrubs with rich rose-coloured flowers, while *D. Vilmorinæ* and *D. Wilsoni* are both very fine with large white flowers. In the *Deutzias* therefore we have a fine set of flowering shrubs well suited to Irish gardens.

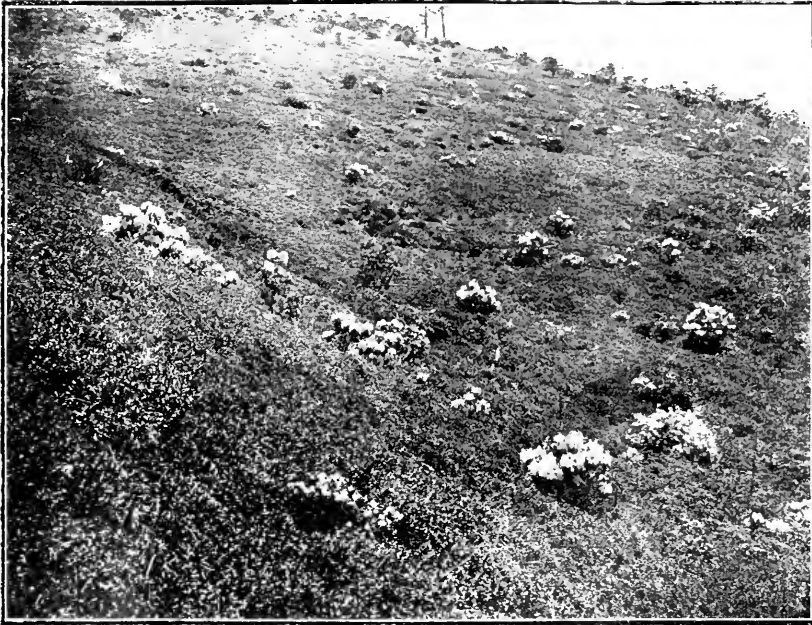
One of the most promising of the new *Pyruses* from China is *P. theifera*, which, though still young, flowered with remarkable freedom in May. Judging from its rate of growth from the seed up till now it promises to grow into a fairly large tree, when it should make a striking object in the grounds. The flowers, produced in clusters, as usual in the *Pyruses*, are pure white and large, attracting attention at once when seen among other species.

The *Lilacs*, botanically called *Syringas*, were surely never finer than this year; all the well-known garden varieties were laden with flowers, especially noticeable being the fine dark-coloured *Reaumur*, with magnificent panicles of dark reddish purple flowers. Of new species from China *S. Wilsoni* gives promise of being of decorative merit. A strong grower, it is not unlike the common *Lilac* in habit, and bears loose panicles of soft pink flowers. *S. pinnatifolia*, though of no great value as regards its flowers, which are produced in very short panicles, whitish in colour, is nevertheless interesting on account of its pinnate leaves, a unique occurrence among *Lilacs*. The most attractive *Spirea* in flower at the time of writing is the *Himalayan Sp. bella*; from its long wiry branches it is now producing many

corymbs of bright rose-coloured flowers, many of the branches arching over gracefully.

A shrub which has attracted much attention this year is *Viburnum tomentosum*. The branches, which are produced horizontally and in tiers, have been covered with flat corymbs of flowers, the showy flowers being, of course, the large white sterile ones on the outside, the perfect flowers in the centre of the corymb being more or less inconspicuous. *V. tomentosum plicatum* has all the flowers sterile; the in-

A most interesting and promising new tree is *Populus Wilsoni*, which promises to be a most ornamental and useful species. The first year after planting growth was somewhat slow, but this season, though growth was late in starting, it had, by the middle of June, added nineteen inches to its height; with very large roundish leaves and reddish-brown shining young shoots, it is a most attractive young tree. *Populus lasiocarpa* is another of the large-leaved section making huge leaves, and it had added thirteen,



CHINESE RHODODENDRONS ON A MOUNTAIN SIDE IN CHINA.

Photo by George Forrest.

florescence being more or less round and rather similar to those of the common Snowball tree, *V. opulus* var. sterile. Many of the new Chinese *Viburnums* are now coming into flower, but few of them promise to be of much merit as far as their flowers are concerned; some, however, have ornamental fruits, which I hope to refer to later.

It is a good plan to grow on walls a few specimens of shrubs which are doubtfully hardy. There are many such which may flourish for many years in the open, but when an extra severe winter ensues they perish, or at least are so enfeebled that they take several seasons to recover. A case in point is *Olearia stellulata*, which is now very beautiful, covered with pure white flowers where it is growing against a wall; elsewhere in the grounds it is much disfigured and in cases killed.

inches to its height at the same date; as, however, it had been transplanted a year later it is likely that it would equal if not exceed *P. Wilsoni* in rate of growth.

ARBOR.

Primrose Evelyn Arkwright.

THERE is hardly a more beautiful flower than our common wild Primrose adorning some mossy bank or nestling at the foot of a sheltering hedge. In point of size, however, it is far exceeded by the variety noted above. While retaining all the beauty of colour and form seen in the wild plant, the flowers are much larger, being quite two inches across, while the leaves are large in proportion. Given a half-shaded position in moist soil a colony of healthy plants is a pretty sight in May.

Chinese Rhododendrons.

THROUGH the kindness of Mr. P. D. Williams, who presented a fine series of photographs to Sir F. W. Moore, we hope to be able to show readers of IRISH GARDENING something of the way Rhododendrons grow in China. The photos, were taken by Mr. George Forrest, whose brilliant work as a collector is well known to all interested in gardening. Mr. Forrest has been instrumental in introducing a considerable number of new species, and has also added much to our knowledge of previously known species by an intelligent study of the plants in their native habitats. Our first photo, shows three species which have been known in gardens for a good many years—at least *R. Fortunei* and *R. racemosum* have, but it is doubtful if there are any true plants of *R. yunnanense* in cultivation other than seedlings raised from seeds recently sent home. A few comparatively old plants which have been known in gardens as *R. yunnanense* are now recognised as *R. chartophyllum*, and were introduced to Europe through Paris by the Abbé Delavay some twenty-five years ago.

R. Fortunei is a very old inhabitant of our gardens, having been introduced from East China in 1859 by Robert Fortune, one of the pioneers of plant collecting in China. It is a hardy species, producing fine clusters of handsome blush-coloured flowers, and flowering rather earlier than most of the large flowered kinds. It has been much used for hybridising, and many beautiful varieties have resulted.

Rhododendron racemosum is a most distinct and pretty species, quite unlike the ordinary conception of a Rhododendron. The flowers are not produced in terminal clusters as is the case with most other species, but are produced in clusters of two or three in the leaf axils of shoots of the previous year's growth. It is a lovely plant for massing, and could be used very effectively as a groundwork for other taller-growing members of the same family.

R. racemosum is said to reach a height of six feet when established and growing well, but is oftener seen about three feet high, and never seems to form a dense shrub.

B.

Æthionema grandiflora.

THIS is undoubtedly the finest of all the *Æthionemas*, although the smaller species have merits of their own. The long racemes of rose-coloured flowers are beautiful in early June, and

a large plant or group of plants is invariably a centre of attraction in the rock garden. Seeds are freely produced, as a rule, affording a ready means of increase; they are ripe in early autumn and may be sown at once or in early spring. Germination soon takes place, and as soon as the seedlings can be conveniently handled they should be potted off singly into thumb pots in very gritty soil. In spring they may be transferred to the rock garden, preferring a chink between stones which are backed by well-drained soil. The younger the plants are put out the surer and quicker they establish themselves, being very impatient of root disturbance. Seedlings from the seed pot may be planted directly on to the rock garden in spring, and are then easily inserted into narrow fissures such as they love. Many alpinses may be treated in this way, and not infrequently grow better and make finer plants than when coddled in frames and nursed on in pots, forming tangled masses of roots which do not readily take to new quarters.

B. (Dublin).

Saxifraga paradoxa × *S. longifolia.*

A HANDSOME hybrid which originated in Mr. Murray Hornibrook's garden in Queen's County. The long narrow leaves, many of them three inches long, are thickly dotted on the margins with characteristic lime pits. From the stronger rosettes arise fine branching spikes of solid white flowers, making a most attractive display. Though, like *S. paradoxa*, a rather shy flowerer, the plants are nevertheless interesting even when not in flower. For a chink between rocks no more desirable plant could be named, the rosettes lending themselves admirably for such a position. The rosettes increase freely, many offsets forming annually.

The Carpathian Buttercup.

RANUNCULUS CARPATICUS.

AMONG early flowering bog plants this stands out conspicuously and is useful in flowering before the *Trolliases*, to which it bears some resemblance. The leaves are comparatively large and lobed, while the handsome flowers are of a bright Buttercup yellow. A position in the drier part of the bog suits it admirably, where it flowers simultaneously with the white *R. amplexicaulis* and slightly later than *R. cassubicus*.

Plants and the Winter.

I THINK the Editor was wise in extending the "observation period" till June, for as late as the 5th I found a nice shoot just showing at the base of a plant of *Spartium junceum* that I was about to pull up as hopeless. And it is only within the last fortnight that shoots are visible on the *Ampelopsis sempervirens* which covers the south wall of the rectory.

As I think many people have already remarked, the effects of the severe winter have been very curious, many hardy subjects suffering unexpectedly and others reputedly tender surviving unhurt. Nothing suffered here more sadly than the *Cistus*; we have a nice little collection, and never had any loss before, except from winds. Now only *C. formosus* and *C. villosus* have come through without damage. I fully expected to lose *formosus*, as it is, I think, one of the more tender sorts, but instead it is all right and now flowering well, while in just the same position a small compact bush of a white variety,

whose name I am not sure of (its particular feature is red buds, the flowers pure white), has been so damaged that more than half the plant is dead. And it is the same with the varieties *florentinus*, *cyosus* and *lusitanicus*, while one of the best—"Brilliancy"—was entirely killed. Growing in the shelter of a laurel hedge, there is a fine old specimen of *Deutzia gracilis*, and it never was better, and is now a sheet of white.

The *Lithospermum*s came off very badly. *L. rosmarinifolium* was killed outright, *L.*

graminifolium is feebly struggling back to life, and a splendid big mass of *L. prostratum* was, until lately, a brown mound. I was advised to cut it down, but I am glad now that I waited, for it is shooting nicely, and if all goes well will renew itself again, though we cannot look for much flower. Its variety, Heavenly Blue, came off better; at least, though it was very brown, it made a better recovery, and is now flowering well. The Heath bed was curiously affected: it is very much exposed, and some of our own

native varieties were badly damaged. Some were killed, while, strangely enough, *E. stricta* and *E. vagans* never seemed to mind, and are beautifully green. *E. Maweania* is gone, and *E. Veitchii* cut to the ground. The spring-flowering *E. carnea* and *E. med. hybrida* were very good, but later than usual. The Furze, too, presents a curious contrast. A self-sown common one was quite spoiled, while in just the same position the Spanish variety never seemed to feel the winds or frost at all, and is now a sheet of flower. The Brooms are all more or less spoiled, and many killed outright, as well as several fine



ANEMONE RUPICOLA.

Photo by R. M. Pollock.

bushes of Veronicas, though *V. pinguifolia* and *V. pinelioides* were unhurt. The Hypericums were all badly hit, particularly the older and larger plants. One great mass of *H. gracile* is gone, and for months a sheet of brown draped the rock-face that was always so lovely with *H. reptans*. However, it is now showing spots of green; and *Helichrysum bellidioides* is shooting in the same mottled way, and where it can at all it is flowering. I think its power of running along under ground through the stones must have been its salvation.

The Saxifrages were quite satisfactory, though later to bloom of course, the only difficulty being caused by frost upheavals, which damaged the more recently planted. I omitted mentioning that *Choisya ternata*, growing by the south wall that the *Ampelopsis* was on, is quite unhurt, and has flowered more than ever before. It never got any protection, and is a fair sized bush.

Co. Wicklow.

H. S. W.

Notes.

Cratægus orientalis.

THIS forms a very attractive small tree for a lawn, and, as a rule, flowers freely in June. Just at present, in the middle of June, it is very pretty with its corymbs of white flowers. The flowers are heavily scented with the characteristic Hawthorn perfume, and are particularly sweet in the early morning and evening. The leaves are deeply lobed and covered on both surfaces with soft hairs.

Pterostyrax hispidum.

THIS interesting small tree will shortly be in flower; at present the pendulous inflorescences are lengthening fast and apparently the tree has suffered no injury from the late winter. The flowers are white and scented. The leaves are fairly large up to six or eight inches long and at least half as wide, giving the tree a handsome appearance, even when not in flower. *Pterostyrax hispidum* may be a tree or shrub, according to how it is treated; if kept to a central stem it will reach a height of twenty feet or much more in very mild localities, if unpruned it forms a large branching shrub. It is deciduous, and is a native of China and Japan.

Syringa japonica.

ANOTHER native of Japan said to become a tree under favourable conditions, but more often forming a large shrub. The handsome leaves may reach eight inches long when the plant is flourishing, and are about half as wide. The flowers are produced much later than most other Lilaes, generally towards the end of June; they are white, produced in large panicles at the ends of the branches. *Syringa japonica* will be found most useful and desirable where shrubs are appreciated, as it helps greatly in extending the flowering season.

Broccoli.

OF all the Cabbage family this seems the most uncertain, except in the case of autumn and early winter varieties, which usually turn in safely. Late winter and spring varieties often fail badly in gardens, and it would be well to consider how much ground can be devoted to them and what means can be adopted to secure a reasonable crop. It is a well-known fact that in exposed fields late Broccolis are generally more successful than in the comparative shelter of private gardens. There are doubtless at least two reasons for this—first, the exposure will undoubtedly tend to cause the plants to grow slower and sturdier; and secondly, the soil is generally much poorer and shallower than in the deeply-tilled private garden, where an accumulation of humus, from frequent applications of manure or vegetable refuse, renders the soil more retentive of moisture, and consequently causes a rapid soft growth.

The lesson to be drawn therefore seems to be—do not plant winter and spring Broccolis on freshly-manured ground, and at planting time let the soil be as firm as possible to induce a slower, sturdier growth. Professional gardeners know well that very fine crops of Broccoli have been obtained by planting on ground from which Strawberries had been cleared off, merely cleaning the surface of the ground without digging, and then opening the holes with a crowbar. All this practical experience points to two main rules—viz., plant in ground not recently manured and ram the soil as hard as possible round the plants.

Subsequent to planting, some experienced growers recommend one or two applications of agricultural salt scattered round the plants during summer; this they assert has a hardening effect on the growth. As a further means of protecting late varieties it is a common plan to heel over the plants with the heads facing north. To do this remove a spit of soil from in front of the row and with a fork inserted behind the roots push over the whole plant until well inclined to the north, then cover the stems up to the leaves with the soil removed, or if in rows remove the soil from in front of the next row to cover the first, and so on using the soil first removed to cover the last row.

The Golden Club, *Orontium aquaticum.*

A NORTH AMERICAN aquatic plant, flourishing well in about a foot of water, the rootstock anchoring itself in the mud. The oblong leaves, which have long stalks, rise well over the surface

of the water, and from among them the curious yellow inflorescence is produced. The plant belongs to the Arum family, but the spathe, which is usually large and showy, is in *Orontium* reduced to a small sheath. The spadix, however, is well developed, somewhat resembling a club, and on it the rather inconspicuous flowers are produced.

Propagation is effected by division of the root, an operation not always easy when the plant is growing in water, but careful manipulation with a sharp spade or strong knife is effective in getting off side growths. The Golden Club is attractive growing by the side of a small pond or lake in conjunction with Water Lilies, the Cape Pond Weed *Aponogeton distachyon*, the Bog Bean, *Menyanthes trifoliata*, the Water Violet, *Hottonia palustris*, and others of the smaller aquatics. B

Saponaria ocymoides versicolor.

THIS forms a most attractive mound, being a mass of flowers in the middle of June. The prevailing shade at a few yards away is pale pink, but on closer examination it will be found that some of the flowers are pink and others white, hence the varietal name. Apparently the pink colour fades to white after a few days. It is perhaps not so fine as the best pink forms, of which there are several, differing only in shade, but there is ample room for any plant which is at once easy to grow and still not coarse. Propagation is easy of all the forms of *S. ocymoides* by means of cuttings inserted in sandy soil from now onwards. Young growths now appearing among the flowering shoots make suitable cuttings and root readily in a few weeks.

Kerria japonica.

MOST gardeners are familiar with the double form of this plant, so often found in shrubberies everywhere, but less often do we meet with the type.

The single-flowered plant is dwarfer in habit than the double-flowered form, and differs somewhat in habit, forming a dense mass of twigs, which in May are well furnished with yellow flowers. It is, in the writer's opinion, a more ornamental shrub than the double form, less stiff in habit, and the flowers more elegant. The double-flowered plant was first introduced, reaching England in 1804. The type arrived in 1834, and it was not until it flowered that the present name of *Kerria* was bestowed. *Kerria japonica* is a native of China, though introduced through Japan, where it is only known as a cultivated plant.

A Useful Early-flowering Herbaceous Plant.

VERBASCUM DENSIFLORUM is one of the earliest of the taller-growing perennials to come into flower. In early June it begins to push up its spikes of coppery-yellow flowers, and continues to be effective for many weeks after. Flowering at the same time as the Oriental Poppies, the pink, purple and white Lupins, and the hardy Geraniums, it contributes very effectively to the early show of perennials. Of supposed hybrid origin, seeds are seldom if ever produced, but as if to compensate for this propagation is easily effected by means of root cuttings. Pieces of the fleshy root as thick as a pencil removed in autumn, and cut in sections about 2 inches long, will make good plants the following summer. They should be dibbled into pots or boxes, and kept from frost all winter. In spring young leaves will soon push forth from the "crown" which has formed during winter, and ere they grow too large the cuttings should be potted singly into 3 or 4-inch pots, from which, when well established, they may be planted out.

Sedum pilosum.

A GROUP of this pretty Stonecrop has been most attractive for some time past. Unfortunately it is only a biennial, but usually makes plenty of seeds from which a supply of plants is easily maintained. The colour is a beautiful soft pink, deepening with age; as a rule flowers tend to get light in colour after expanding, but as a friend pointed out lately, the opposite is the case with *Sedum pilosum*. The rosettes of small hairy leaves, quite unlike the ordinary conception of a *Sedum*, are themselves very pretty, but they disappear as the plant proceeds to flower.

Modern Farming.*

WE have been favoured with a copy of this new monthly magazine, the avowed object of which is to keep farmers in touch with up-to-date methods of cultivation and general farm management. Considerable attention is given to Tractor work, and the first of a series of articles is entitled "What a Farmer should know about his Tractor." Many useful notes are given on Dairying, Poultry, "How to get and keep Farm Labour," &c.

The general tone is much in the way of that which we associate with Canadian and American journals devoted to Agriculture, and we have no doubt many of our readers who have the management of farms will find much of interest in *Modern Farming*.

* Published at 36 Vine Street, London, E.1.

Reviews.

Grass Land and Ploughed Land.

A PAPER on this all-important subject has been published as a Supplement to the May number of the *Journal of the Board of Agriculture*. The writer, Mr. R. G. Stapledon, M.A., Adviser in Agricultural Botany, University College of Wales, though dealing exclusively with conditions prevailing in Great Britain, gives many interesting facts which we, in Ireland, could peruse with

ment of grass land, without actually ploughing it, are summarised as follows :—(1) Top-dressing, (2) renovating mixtures, (3) altered methods of stocking, (4) substituting pasture for meadow conditions or the reverse, (5) eradication of weeds, (6) drainage.

Basic Slag was found to be, in general, the most suitable top-dressing, though, in some cases, Superphosphate and Lime, or Superphosphate alone, gave better results.

These manures encourage leguminous plants, chief among which is White Clover.

A similar method of improving grass land has given a similar result almost all over Ireland.



ALLOTMENTS IN BELFAST, HARLAND AND WOLFF'S YARD IN THE DISTANCE.
(See "Notes" in last issue.)

profit. An endeavour has been made to show that by ploughing up large areas of *poor* grass, the farmer has the opportunity of converting inferior grazing into productive temporary leys, and by adopting a more intensive system of farming he may, besides growing an extended acreage of corn, add considerably to his cattle output. This, the author contends, may be accomplished by paying sufficient attention to the seed mixtures used, and, at the same time, to the improvement of the remaining permanent grass. A large area of poor second rate grass land is to be found in Ireland, as well as in England, that could be ploughed with advantage both to the owner and to the State.

The methods recommended for the improve-

ment of "Renovating Mixtures," the author states that "a renovating mixture is probably only justified on fields where top-dressings are unable to establish a development of leguminous herbs."

Wild White Clover is the principal ingredient of these mixtures. In a few instances in Ireland this method has been tried with success.

To keep grazing land in good condition it should be stocked, if at all possible, with cattle as well as sheep.

The writer goes on to state: "It is often said that permanent fields should be put aside as either pasture or meadows." This is undoubtedly a sound practice on fertile soils, and where the management is good. On poor soils, but slightly

manured, it is a practice strongly to be condemned. He gives reasons which hold good for this country also.

It is common knowledge that the eradication of weeds, and drainage where necessary, are essential for the production of good grazing.

How grazing may be improved by ploughing the ground is next discussed. It should be borne in mind that it is only the poorer grass lands are referred to.

The author points out: "The manurial value of White Clover and other leguminous herbs must be insisted upon, for it is only by turning this

in Ireland, and are of doubtful advantage, as rape is seldom of any value unless well manured itself, or sown after a well-manured crop.

There are some statements in the paper which would not appeal to practical farmers in this country at all events. For example, "It is deplored on all sides that the ploughing season automatically ceases in March or early April." The experience of most farmers is that they have just as much work during the summer months as it is possible to attend to. Into the bargain, in dry weather, the land is so hard, it is exceedingly difficult to plough.



1ST PRIZE FLOWER BORDER, BELFAST, 1916.

(See "Notes" in last issue.)

fundamental fact to full account that the best results are to be achieved."

A comparatively new idea which might commend itself to some farmers is incidentally mentioned—viz., that where two crops of corn in succession are taken off lea land, it is a good plan to sow a certain amount of Italian Ryegrass and Red Clover with the Corn crop, to afford some useful autumnal grazing, and make for enhanced fertility. This has been tried in Ireland, and is open to one serious objection—in some seasons, when the straw is short, the clover and grass get up almost as high as the grain, and make the corn extremely difficult to "wind." Besides, when the harvest is cut late, growth afterwards is scanty. "Rape pastures" are also recommended. These have not been tried, except in isolated cases

"Seed Mixtures" are next dealt with, and are treated in an instructive and practical manner.

The writer points out—this applies to Ireland quite as much as to Great Britain—that far too much dependence is placed on Perennial Ryegrass and Red Clover, while a few err in the opposite direction by sowing expensive seeds that give no results. Amongst these latter are included such plants as Golden Oat Grass, Sweet Vernal Grass, Smooth-Stalked Meadow Grass, &c.

Many seemingly trifling, but yet vastly important, points are mentioned in connection with the various grasses. Cocksfoot is stated to be "the most valuable grass for temporary leys on poor soils." This is corroborated by the experience of many farmers in Ireland. Meadow Fescue and Meadow Foxtail are, by general consent, excellent

grasses, but successful only on some good soils. The various clovers are also dealt with. From amongst many interesting details we would draw special attention to one remark: "The ordinary commercial seed of White or Dutch Clover is now generally realised *not* to give a lasting plant of White Clover." Wild White Clover is, as usual, spoken of in the highest terms. No person who has ever seen its results could do otherwise.

Among "Miscellaneous Plants" Chicory is the only one mentioned. It is doubtful if even it is worth including in mixtures for this country. The writer gives typical mixtures used by different authorities.

As per usual these vary very widely, but all are agreed on the value of Perennial Ryegrass (in moderate quantities), Cocksfoot, Timothy, Red Clover and Wild White Clover.

A table is given to show that equally heavy crops of hay can be produced without the ryegrasses as with them. This may be, but the mixtures used are too complicated to our mind to permit of any such conclusions being drawn. For example, late-flowering Red Clover is used in some plots, whereas Broad Red Clover was used in others. Our experience has been that the latter does not give as heavy a crop as the former, but the quality is not so coarse.

The "Purchase of Seed" is briefly dealt with. Points, such as "The origin of the seeds," most important, though hitherto almost entirely unnoticed, are brought into prominence.

A brief summary is drawn up. One point emphasised in it is worth considering: "The intimate connection that exists between well-managed grass land and fertile arable land." In the tillage districts in Ireland where the land is not naturally fertile, it is common knowledge that if a field can be got to graze well, it will crop well in its turn.

We would commend the paper to all interested in this subject, for as the author truly states: "In this country, with its varied geological and climatic conditions, there are many districts where—even under a greatly improved system of agriculture—grass will for a long time to come take a prominent, although no longer overwhelming, position in the methods of farming practised. A maximum increase in our food supplies can therefore only be obtained if endeavours to extend the area under the plough go hand in hand with plans for the improvement of grass land." J. D. (Co. Down)

A Rare Insect.

EARLY in June a very remarkable insect was found in the Botanic Gardens, Glasnevin. It was found hovering on plants trained to a wall, and being much larger than any ordinary Dragon fly, it was immediately put down as something out of the ordinary. The specimen was sent to Dr. Scharff of the National Museum, and turned out to be a rare species, *Brachyton pratense*. The writer adds: "I may mention that Dragon flies are among the most useful insects we possess. They not only live entirely on gnats and other flies, but the latter actually seem to have a holy terror of them."

The body of the Dragon fly was a full 3 inches long, yellow with black rings, with a large head and transparent grey wings.

"P."

Gardens in War Time.

VEGETABLES should be grown instead of flowers, or at most only a small part should be devoted to flowers.

A small part of the garden, a warm corner well drained but not heavily manured, should be set aside for the purpose of seed saving.

Sow in this garden say, one dozen or more seeds of each of the following:—Scarlet Runners, Dwarf Beans and Haricot Beans. Scarlet Runners may be grown without stakes or poles. Sow the seed 2 feet apart each way, and as soon as the point (the curling tip which makes the twining stem) is visible, pinch it out and similarly pinch out any branches which later on show signs of running. Do not pick any of the pods for eating purposes. When the pods are thoroughly ripe and beginning to turn yellow, pull up the plants and hang them in bundles in a warm, dry place. As soon as the pods are thoroughly dry they may be shelled, any bad seeds thrown away, and the good seeds spread on sheets of brown paper in a warm (but not hot), dry place. As soon as the pods are thoroughly dry they should be placed in paper bags or in seed packets, and kept in a cool, dry room.

To test germination of seed to be sown, place moistened, but not wet, pieces of flannel or blotting paper in two saucers. Place in one of the saucers 20 or more seeds which have been soaked in water overnight. Cover the saucer containing the seed with the other and place it in a warm room, taking care, however, that the flannel or other material does not get dry. Inspect daily, and as soon as a seed shows its root remove it, and after a time, varying according to the different seeds from a week or a fortnight, work out the percentage of germination. If the sample seeds have germinated well the remainder should be kept for next year.

Seed left over from last year should be tested and used in preference to this year's seed if it germinated fairly well.

All gardeners should exercise economy in seed sowing. Many gardeners sow seed too thickly. Seed is precious now, and no more should be sown than is necessary. Before sowing, the number of plants required for the ground may usefully be estimated. A good rule is to sow no more than twice as many seeds as the number of plants required, although in the case of seeds which do not long retain their powers of germination (parsnips for instance), rather more should be sown.

Seed liable to be eaten by mice or birds should be moistened, rubbed in powdered red lead (a poison), and then planted.

Late summer sowing should be practised, and a good breadth of garden beet should be sown in the latter part of July or at the beginning of August, for winter use.

If expert advice is required and cannot be obtained locally, apply to The Secretary, Food Production Department, 72 Victoria Street, London, S.W.1.

Any surplus which may be produced should not be wasted. Advice and assistance as to the disposal and preservation of surplus produce may be obtained on application to the Food Production Department if not available locally.

If advice on this and other subjects is required,

it would be useful to ascertain first whether neighbouring allotment associations or other small cultivators require assistance also, so that a joint application for advice may be made, thus economising the time of the adviser who may be sent.

Onions and Carrots should not be sown on freshly turned-up land.

Soot or lime dusted along the rows will help to keep down slugs.

Strands of black cotton stretched along the rows will protect seedlings from birds.

The tips of Broad Beans should be pinched out when the plants are about 2 feet high, in order to lessen the effect of attack by aphids (black fly).

If space is limited and it is desired to use a lawn without destroying the grass, turves 1 foot square may be taken out at intervals of 3 feet. The ground should be broken up with a fork, a little well-rotted manure added, and the surface raked, after which climbing French Beans may be sown. When the seedlings appear they should be staked. After the crop is gathered the turves may be replaced (these should have been laid in any convenient part of the garden), and in a month or two the lawn will be as good as ever.

Neighbouring gardeners should co-operate in making provision for the spraying of potatoes.—*Journal of the Board of Agriculture*, May 1917.

Compost for the Garden.

BEST METHOD OF CREATING IT.

WELL-ROTTED manure is better than fresh manure for gardens. It is also cheaper than commercial fertilisers in these war times.

Composted manure is as good or better than the ordinary well-rotted article, and very much cheaper, because more can be saved and much less is wasted. It is a better balanced plant food, and does not produce so much fruit and vine instead of the fruit or roots for which most garden crops are grown.

THE BEST SITE.—Select a level, well-drained spot, as near the barn door as possible, where the wash cannot go through the pile and wash out the plant food. Dig away 3 or 4 inches of the looser surface soil over a strip 4 feet wide, and as long as desired.

Fill the hole with well-rotted or composted manure, and pile on top of this alternate 6-inch layers of fresh manure and weeds or sod, mixed with some earth, until the pile is about waist high. The weed seed will be killed in the process if the heap is properly handled and an addition of such extra material as leaves and straw increases the amount of compost obtained from a given amount of manure. When many leaves are used, add lime to make them decay more quickly, and sweeten the acid condition they produce.

BUILDING THE PILE.—The whole pile should be covered with a thin layer of earth to help absorb the ammonia and many other valuable plant foods which escape in the vapour. Keep pile wet, but not so well soaked that water runs from it and carries away the plant food. Fork over and rebuild the pile every six or eight weeks, and cover it again with earth. Composting should be completed in from six months to a year, depending on the kind of material used, and whether lime and water have been used to hasten decay.

Frow 10 to 15 tons of compost should be added per acre, or a little more than if undiluted manure had been used. Lighter applications should be for fruit and root crops, like Beans, Tomatoes, Potatoes, and Beets, than for leaf-crops, like Lettuce and Cabbage, which can use a deal of rich food.—*Modern Farming*.

The Farm Garden.

A "SIDE LINE" WHICH PAYS WELL.

WHETHER the garden is to be a success or not depends, in great measure, on its location with reference to the home and to the farm buildings. It should be easily reached both by those who care for it and by the housewife, who does most of the harvesting. It should be so placed that tools do not need to be brought far, for this takes time and labour, and makes the garden work expensive. Then, too, if the garden is close at hand, spare times now and then can be used in going over it.

The garden is generally well-drained, but if it is not, laying a few lines of tile in the garden will frequently pay. Early vegetables will not do well in a water-logged soil, and late ones are injured almost as badly. On the other hand, most vegetables need plenty of water to thrive and produce well. Their roots are so shallow they cannot go down to a deep water table in dry seasons as trees can, so artificial watering may save the garden, and it is a great convenience to have some sort of water supply near at hand.

The soil should be fertile. Vegetables are heavy feeders, but they will return many times over the value of the manure used in building up the soil. Barnyard manure is the best general fertiliser to use, both for its plant food value and for its tendency to lighten up tight and clayey soils which drain poorly and remain "cold" until late in the spring. The loose, mellow soil resulting from application of barnyard manure is also essential in growing the root crops, which are likely to be misshapen and distorted in too tight and stony soils. Root crops are more easily harvested in a mellow soil, too. A dressing of 3 inches of manure is not too much, but it should be well rotted.—*Modern Farming*.

Irises.

THIS is another large section of garden plants which come into flower about the same time as the Pæonies. They are endless in variety and colour, but some of this large section should be in every garden. Here, too, it is impossible to give a selection, but a few stand out as worthy of note, such as *Iris pallida dalmatica*, a tall stately Iris, with handsome, clear lilac flowers set characteristically far apart on a grey green stem.

Another in the same group, *I. pallida oriflamme*, with dark falls, has also a good strong habit.

All these breasted Irises are divided into sections, and in one of these, that known as the "squalens" section, we have a wonderful range of art shades—bronze, tan, purple, and gold—which make very remarkable and effective contrasts. "Iris King" comes into this section, and is one well worth having. The best yellow is still Mrs. Neubrunner, a clear golden colour, flowering freely.

Women on the Land.

THAT women can play an important part in the production of food will be readily conceded by anyone who troubles to look round the Allotment Areas about Dublin or, very likely, any of our large cities. Every evening they can be seen busily helping the men to maintain and cultivate the plots, and they are mostly women who have been busy with household duties all day.

Gardening as a career for women has been advocated for some years now, and not a few ladies have proved themselves capable of acquiring the necessary knowledge and experience to successfully manage an all-round garden, showing usually a distinct preference for flower growing both for market and home use.

The submarine campaign, however, has turned everyone's thoughts to the question of food production, and with the absence of so many millions of able-bodied men there is now a distinct and urgent need for women to apply themselves to vegetable growing for food, and the need will not be less when the war is over. It is clearly a question for healthy young ladies who can afford to devote a year or two in acquiring experience and training.

The provision of training centres is important, and to this end people who have large private grounds and gardens can do much.

Several Schools of Gardening exist in Ireland, and good work is done in instructing ladies in practical fruit and vegetable culture. There is room for many more however.

In England much progress has been made in the provision of Schools and Colleges for training women in gardening.

Within the last year or two, at "Craigendowie," near Preston, Mr. and Mrs. Ritchings have established a large garden worked on commercial lines. The work is apparently done entirely by the women students, who thus receive a thoroughly practical training, which is the first essential in the making of a first-class gardener. Mrs. Ritchings herself has had a sound practical training, and no doubt knows that no young woman, however well educated, can acquire in a few months the knowledge it takes intelligent men years to acquire.

An illustrated brochure lies before us showing admirably the practical nature of the training at "Craigendowie." Therein we see women digging, planting, ploughing, harrowing, and taking the produce to market.

We would be glad to hear of many such practical schools in Ireland.

Answers to Correspondents.

Treatment of Lily of the Valley.

As the Lily of the Valley flowered badly this year it is likely that the "crowns" have become too crowded, and consequently too weak to flower. Growth is well advanced now, therefore nothing in the way of lifting can be done at present, and topdressing is likewise impossible. Liquid manure applied once a fortnight from now until the leaves show signs of ripening off would assist greatly in strengthening the crowns. Liquid from

the cow-shed diluted with three times its volume of water would be suitable; the liquid from sheep manure soaked in water would also be beneficial.

In autumn a part of the bed or beds might be lifted and replanted. Prepare a new bed by digging at least one foot deep, thoroughly pulverising the soil, and at the same time incorporating a good dressing of well-decayed manure and leaf soil.

Lily of the Valley grows naturally in shady situations in loose leafy soil, and this fact provides a guide to cultivation. Replant the strongest crowns only, discarding the weak ones unless wanted to increase stock, when they, too, can be planted in the same way. In winter, when the leaves have all died off, clean all the beds and mulch with a couple of inches of rotten manure or leaf soil.

Rambler Roses in Pots.

VARIETIES of the Dorothy Perkins type which you name are readily struck from cuttings. As suggested, they should be put in early in October, allowing a foot between the cuttings to give ample room for development the following summer. While growing they should be carefully staked up, and only three or four of the best shoots allowed to each cutting. The following October they should be good plants with well-developed roots and shoots six or seven feet long, perhaps more. The plants may then be carefully lifted, preserving as many roots as possible, and potted into pots large enough to accommodate the roots comfortably, but avoid using too large pots. Use a compost of good loam with, say, one-third of sand if the loam be heavy, less if it is light; add also to each barrowful of loam a couple of spadefuls of dried cow manure and a five-inch potful of crushed bones. Pot firmly and give each plant a good watering when finished: for a fortnight or so after potting syringe the Roses on bright days to keep them plump until the roots begin to grow. They may then be plunged in any convenient place till the end of the year.

It is not wise to commence forcing too early the first season: Ramblers, of course, unlike the bush Roses, flower on wood of the previous year's growth, and consequently so soon after lifting it is not in such good condition for bearing flowers, though with reasonable care a good display may be had. Early in January will be time enough to bring them into the house, beginning with a temperature not exceeding 45° to 48°, increasing to 50° to 55°, a month later admitting air by the top ventilators, on the sunny side of the house, if the temperature inclines to rise too high; avoid cold draughts, which are a fruitful cause of mildew. Flowers of sulphur rubbed on to any leaves showing mildew will keep this pest in check.

If greenfly appears syringe with quassia, half a pint to five gallons of water. Syringe between the pots on bright days, but do not spray too much water about the plants when the weather is cold early in the year.

After flowering, the shoots which have flowered may be cut back and any repotting or topdressing done. During summer plunge the pots outside and attend to watering, feeding, and keeping clean, and the following autumn the plants should be well established.

Suburban and Allotment Gardens.

JULY on the allotment is not, as a rule, a very busy month. The early Potatoes should be ready for digging quite early in the month, after which Savoy Cabbages, Broccoli, Curly Greens and

rows and 18 inches between the plants in each row for larger types, and for Broccoli 2 feet apart each way should be given). In planting Leeks a common method, which gives fairly good results, is to make holes with a dibbler about 6 inches deep, 2 inches in diameter, and 10 inches apart, then



RHODODENDRON CHARTOPHYLLUM IN THE ROYAL BOTANIC GARDENS, GLASNEVIN.

(See page 108.)

Leeks, &c., should be planted. The sooner these crops are put in, more especially after showers, the better the resulting crops. Late planted winter vegetables are rarely a success. The ground should be well manured and the plants put out at the proper distances (for Savoy Cabbages of the dwarf type 2 feet between the

dropping into each hole—root downwards with leaves resting on the soil—a single plant, and immediately afterwards filling the holes with water. This settles sufficient soil around the plants, as a rule, to just cover the roots, which is all that is necessary. Where large Leeks are desired, they can be planted in trenches as

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill,
Shane's Castle, Antrim.

THE principal work for the month in this department is to see that the growing crops do not suffer for the lack of moisture: plenty of water, or, better still, if possible, weak liquid manure. Peas filling will want plenty of that, also a nice mulching of manure.

BROAD BEANS.—Pinch out the points of flowering plants and put some soil up to the base to steady them.

KIDNEY BEANS.—Another sowing may be made for final crop. Canadian Wonder is hard to beat. A sowing of Early Peas may be made at once on the off chance of getting a very late dish.

Now is the time to get winter and spring crops planted: Broccoli, Borecole, or early greens, also Savoy. An old Strawberry bed suits Broccoli well: clear off the Strawberries, and plant without digging. Ground where early Potatoes have been dug suits Savoys or any green crop.

LEEKS.—Plant maincrop in drills 15 inches apart, making a deep hole with a dibbler and dropping the plant to the bottom to ensure a good blanched stem.

CELERY.—Complete the planting, and water regularly: dust the foliage with sand sprayed with paraffin to prevent the fly attacking; that is also a preventive for Celery disease.

TURNIPS.—Make small sowings this month, one at the beginning and one towards the end of the month—Orange Jelly or Red Globe. Give the young plants as they grow a good dusting with soot, it helps to ward off the Turnip fly, especially if the weather is very hot.

Sow Endive and Lettuce for winter use. Prick off Lettuce plants on a northern border to prevent premature running to seed. Make a small sowing of Cabbage towards the latter end of the month. A certain percentage of this sowing might bolt, but as a rule you get an extra early dish from it.

TOMATOES. growing outdoors or inside, require constant attention in the way of dis-budding or taking away part of the leafage to enable the fruit to get the benefit of the sun; at regular intervals water with liquid manure.

Keep the hoe going between all the crops; one cannot emphasise that too much, as it is death to the weeds and life to the crop.

FRUIT GARDEN.

APPLE TREES will require attention, for most of them are infested with maggot and web; they should be carefully hand-picked and thrown into the fire. In general, over all the trees there is prospect of a large crop this year. Pears, too, are fine: see that they do not want for nourishment, especially these growing on walls.

Summer pruning may be commenced about the end of the month on the south walls with Plums, Pears, &c

recommended for Celery. Plot holders who have dug their Potatoes out of the lazy beds may find the deep furrows of value for growing either of these crops. Vegetable refuse—Potato and Cabbage tops, &c.—can be placed at the bottom mixing a little soil with them and treading it down, then putting on a layer of peat moss manure or raw manure about 3 inches deep, and on top of this a little of the good soil from the ridges, then, after rain, planting either Celery or Leeks as desired. The Savoy Cabbages can be planted on the ridges, but the outside rows should not be closer than 15 inches to the trench, so as to leave sufficient soil for the necessary moulding or earthing operations later in the season. Lettuce plants can be planted between these at 8 inches apart, as a catch crop. Where only a few Turnips have been sown, some of the Potato ground should be sown with Turnips, such as Model White, Veitch's Red Globe, &c. These should be sown thinly in rows, the rows being 18 inches apart, the resulting crop should prove of use during the winter.

Thinking of next year's supplies, and realising that it is the early spring vegetables which are often the dearest, plot-holders should sow one of the extra early Cabbages, such as Sutton's Harbinger, April or Flower of Spring, during the latter end of July, from the 20th to the 26th, and for northern districts a week earlier.

The seeds should be sown thinly in rows about 8 inches apart, covering the seeds with half an inch of soil.

SPRAYING POTATOES, &c.—The maincrop Potatoes should be sprayed for the second time before the tops close in together: it will also pay to spray Celery plants with lime of sulphur solution, using one ounce to three gallons of water. This will keep the Celery leaf spot disease—which often ruins a whole crop—in check and enable the cultivator to produce good crops. Continue to spray Onion and Carrot plants with paraffin emulsion or other mixtures in order to keep away the flies—and resulting maggots. Treat Celery and Parsnips similarly where there is a probability of attack by "celery fly" or "leaf miner."

The biennial flowers, such as Wallflowers and Sweet William, which were previously sown, should be transplanted—during showery weather—on well dug soil, and at 9 inches apart.

Water thoroughly such plants as need it, and give to Sweet Peas occasional applications of liquid manure.

FRUIT PLOT.—Summer prune or "pinch" the shoots of Apples, Pears, Plums, Red and White Currants, Gooseberries, &c. Water thoroughly those trees which appear to be suffering through dry soil conditions. Layer the "runners" of Strawberries where new plants are wanted, and remove all those not desired.

An application of liquid manure will benefit the plants for the succeeding season.

W. H. J.

STRAWBERRY RUNNERS.—These should be secured as soon as possible; from a bed planted the previous year you will get the best and strongest runners. There are various methods of propagating the runners—either layering them in 3-inch pots or cutting them off and planting in a close frame, shading them for a few days from the sun. The method I have adopted is this: cut pieces of good loam about 3 inches square and peg your runner to the top of it; once they root into it there is not so much danger of them suffering for the want of water as in the small pots; after about three weeks they can be severed from the parent plant and packed into a cool place, ready either for potting or planting.

PEACHES, APRICOTS and NECTARINES have finished stoning. The fruit should be thinned finally; at the commencement of thinning remove all badly placed fruits and these in contact with the wall or wires. It is a temptation to allow the trees to carry too many fruits, but over-cropping never pays in either of the three subjects. 9 to 12 inches apart each way for Peaches and Nectarines, and 4 to 6 inches for Apricots. Keep the syringe going, also be careful not to allow them to become dry at the root.

Weak liquid manure may with advantage be applied to all bush fruit, including Currants, Raspberries and Loganberries, the latter two should be kept neatly tied to wires or stakes.

FLOWER GARDEN.

Roses of all sorts are now at their best, and require, and well repay, a little extra attention in the way of manual assistance. Remove all dead blooms at least once a week, and gather petals for Pot Pourri. The rambler type, as soon as the flowers are past, should be cut back to a good bud, so as to give the young growth a chance to extend; tie in long growth loosely. If mildew makes its appearance take early precautions to combat the attack with a good mildew specific.

CARNATIONS should be layered as soon as possible if you want good plants for next year, a light compost of sand, loam and leaf soil should be placed round each stock plant for the layer to root in.

SWEET PEAS.—On no account allow the plants to form seed pods, or your bloom will soon be over for the year. They should be removed at least once a week. Give them a good watering with liquid manure or some good fertilizer.

The flower-bed occupants are filling their allotted spaces, and they require attention in the way of removing dead flowers and weeds and keeping them as neat and trim as possible.

Prick off Wallflower seedlings, also Myosotis, Polyanthus and Double Daisies.

Hoe between the Violets and remove any runners.

HEDGES.—The present month is a good one to trim evergreen hedges, as the growth for the year is nearly over, and they look well for a whole year, and one clipping does.

Stake Hollyhocks and Dahlias if not already done, also weed and stake all tall plants in herbaceous border. Keep a tidy appearance by having the walks clean.

Southern and Western Counties

By ERNEST BECKETT, Gardener to Lord Barrymore, Fota.

THE KITCHEN GARDEN.

SUNSHINE and frequent showers of rain have caused a wonderful growth of all kinds, including weeds, which have been rampant, and owing to the rain hoeing was often out of the question, and hand weeding has of necessity to be done, especially where inter-cropping was practised and where the exact locality of seeds was not known. The system of marking crops of vegetables by sowing a little Radish seed also in the drills is an excellent one, as germinating more rapidly they serve as a guide, and the ground can be cleared between the rows without any fear of injury. I am sure many will be grateful to the writer who mentioned it in *The Garden* a few weeks ago, and I merely repeat it for those who did not happen to read it.

CABBAGE.—Never has this crop been so scarce as this season, due to the unusual severity of last winter. Towards the end of the month a start will be made once more for the supply of plants for next spring cutting. Choose a piece of ground that is known to be fairly clean from weed growth and that has been well worked and manured for the previous crop—a piece of early potato ground suiting admirably—but avoid succeeding any of the Brassica tribe, if possible, to which the Turnip also belongs. Fork well over, and before doing so give a good sprinkling of wood ashes and soot; afterwards break down to as fine a seed-bed as possible, and either sow thinly, broadcast or in drills sufficiently wide apart to allow the hoe between them, during showery weather for preference. Lightly cover the seed with fine soil, and net against birds, and if the weather be dry damp over with a rose can late in the evening. Sow only reliable varieties which are specially recommended for sowing in the month of July or early August, otherwise a number may bolt instead of hearting.

CAULIFLOWERS.—Look over the earliest crops frequently and protect the curds by tying up the leaves or breaking them down over them to prevent discoloration by exposure to the sun and air, and any not immediately required may be pulled clean out of the ground by the roots and hung head downwards in a cool, dark shed or cellar. Keep the hoe going between the main-crop sorts, and if time and stimulants can be afforded finer produce will be secured.

FRENCH BEANS.—After the middle of the month it is hardly to be expected, unless unusual autumn conditions allow, that sowings will perfect their crops, but, if the convenience of a skeleton frame or protection can be given when the first autumn frosts puts an end to the climbing varieties, later sown Dwarf Beans provide a welcome succession.

BROCCOLI.—Late varieties, which mature during April and May, may still be planted on firm ground, such as old Strawberry beds, and the purple sprouting variety between rows of Potatoes and vacant spaces filled up with late Savoys, Cottager and other Kales.

PARSLEY.—Transplant the seedlings from the earliest sowing on to good ground, and make a sowing for winter use on ground not too fertile, as the plants will then prove hardier.

PEAS.—As soon as the rows are cleared of their crops clear off the ground and utilise the supports, if required, for the later sowings. A mulching of strawy litter beside the rows will, in the event of a dry spell, do much to lessen the evils arising from drought at the roots. Hawfinches in some localities cause much mischief, also tits, and netting becomes an absolute necessity, as the latter are not so easily scared.

SPINACH.—Thin out the seedlings as soon as large enough, and allow the plants plenty of room, as overcrowding only gives rise to stunted plants and premature flowering.

SEAKALE.—If not already done, reduce the growths to one, and keep the ground clean between the rows by the use of the hoe, which will also stimulate growth and produce large succulent foliage, which will in time smother the weeds.

TOMATOES.—The condition of the outside crops will be influenced by the weather, position and the nature of the plants at the time they were put out. Keep the plants free from superfluous growths, and when three or four good trusses of fruit are set stop the leader and feed liberally. Make further sowings of Radish, Lettuce, stump-rooted Carrots and Turnips.

THE HARDY FRUIT GARDEN.

By present appearances the Apple crop is likely to be disappointing, and especially after such a wealth of blossom.

Fortunately with us most other fruits have set an abundant crop, and should be thinned, especially from those trees that carried fair crops last season and are not making too gross a growth. Continue to carry out the summer pruning, which will also assist in keeping the trees free from aphids, as it is in the point that infestation occurs. Now that the fruit is swelling it will also admit a freer circulation of light and air necessary for their free development, and on walls that have to be netted this is much more conveniently done. Peaches and Nectarines, and especially those growing under permanent copings, will need frequent syringings to keep the foliage clean, and also plenty of water at the roots. As soon as stoning is completed and the fruits are seen to be on the move again, a final thinning can be done, according to what the tree is best able to bear. Young trees that are inclined to make strong growths should be checked by allowing them to carry as much fruit as they can, even if it results in second rate quality. When thinning, if possible, I like to leave one fruit to each growth, and although this may result in two or more fruits being very close to each other, I consider it preferable to leaving two on the one growth. Morello Cherries have set a wonderful crop, and unless these drop very freely it will be well to thin out for cooking as soon as there is sufficient colour to warrant this. Strawberries, as they pass out of fruiting, should be cleared of all surplus runners and weed growth and the beds hoed through. Some growers, I believe, burn off the beds, and with beneficial results where infected with disease. Layers should, if possible, be taken from young plants, and if required, for forcing, pegged down into small pots filled with good loamy soil. No crocking is necessary, just a barrow load of pots and one of soil, and fill them up on the spot. Pegs may be made from stalks of bracken and bent in the middle, but the best method that I have come across is to save young

growths of Willows in the winter and soak overnight in a tank of water; cut these into lengths and bend as required. Give the plants a good soaking with a rose can, and leave them until well rooted before severing from the parent plant.

THE FLOWER GARDEN.

It is an ill wind that blows nobody good, and though the showery weather of late has been against the eradication of weeds, it has nevertheless saved an immense amount of labour in this department and proved of greater value than artificial watering, and gave the plants a good start. Plants in vases, however, will need to be frequently examined for water, otherwise these will suffer, and such things as Bays and other plants in tubs and pots. Attend to the staking and tying of Dahlias and other plants, and thin the growths where too crowded. Continue to peg down the growths of Ivy Geranium, Verbenas, and similar plants, and keep the flowers removed to encourage a free growth. Stake border Carnations, and the use of the spiral wire supports will save a lot of tying and labour. Keep the ground clear between Violets, and syringe them if infested with red spider. Keep the hoe going between border Chrysanthemums, and stake the plants, and tie up the growths before they get too long to be damaged by the wind. Keep the flowers picked regularly from Sweet Peas unless seed is required, as better flowers and longer stalks, so useful for decorative purposes, will then be obtained. Tulips that have been lifted should be well ripened off before being stored away preparatory to planting again. Take pipings of Pinks after flowering and strike them under a north wall under a handlight in sandy soil, and layer border Carnations towards the end of the month, thinning out the growths and layering the best, adding a sharp mixture around the plant for the purpose. Spray Roses against mildew with extract of quassia Abol insecticide, sulphide of potassium or some other preparation as good. Apply weed killers to garden walks and drives, using every precaution against domestic fowls and other bird-eating worms.

Pæonies.

THESE are among our most effective garden plants: beautiful to look at, easily grown, and invaluable for cut-flower work. They are not particular as to position, sun or shade, but if planted in shade or semi-shade they will last much longer in flower. Many people have a strong objection to double flowers as being coarse and heavy, but no one, not even the most fastidious, if they have once seen some of the double herbaceous Pæonies in flower, could raise any objection to them. They are very beautiful, and the glossy foliage and wonderful range of colours make a very brilliant show. They also have a delicious perfume, peculiar to them, which on a warm, sunny day can be detected at a considerable distance from the plants. Early planting is essential to success, and this should be done in September in deeply dug ordinary garden soil. Good results should not be looked for the first year after planting, but after that results will be up to expectations. A good reliable nurseryman will give a selection if asked, but the names are so many and the different varieties so great that it would be impossible here to give a list of what to plant.
R. M. P. (Dublin).

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Irish Gardening

Contents

	PAGE		PAGE
Allotment Gardens after the War	113	Succession Crops	123
Ballynahinch, Co. Galway (Illustrated)	114	Allotments and Suburban Gardens	123
Trees and Shrubs	115	Seeds for Autumn Sowing	124
Notes (Illustrated)	117	Gardening for the Home	125
Correspondence	119	Lilies in July	126
Fruit Crop and Fruit Crop Prospects (Ireland), 1917	120	The Month's Work—	
Fruit Crop, Ireland, 1917	122	Midland and Northern Counties	126
		Southern and Western Counties	127



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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE

VOLUME XII
No. 138

ADVANCEMENT OF HORTICULTURE AND

AUGUST
1917

ARBORICULTURE IN IRELAND

EDITOR—J. W. BESANT

Allotment Gardens after the War.

DURING the last year or so the increase in the number of allotments has been enormous, and a vast increase in our home-produced food supplies is likely to result therefrom. Much of the land acquired for this purpose was originally destined for other uses, which will again supervene when the war is over. It is more than likely that many who are now cultivating an allotment for the first time and who have expended much labour and money in bringing the land into condition, will be unwilling to be deprived of their little plot just when it is beginning to yield its maximum.

It will be realised, however, by all reasonable people that areas that were intended for building purposes will be urgently required when material is again plentiful and cheap. The housing problem is acute in many large towns, and will have to be dealt with; it may be taken for granted then that land of this kind now occupied by allotments will not be available after the war.

The question affects large towns particularly, and those who are anxious to continue to grow at least some of their own vegetables will naturally look to the corporations for help in acquiring land.

It is fairly certain that it will have to be sought on the outskirts of our towns and cities, but as many of the fields now under allotments are at present outside the city proper it may be possible to continue to occupy this land. As, however, those now occupying building land will more than likely have to move after the war, it will be necessary to consider how far the

more outlying areas will be able to accommodate them. The difficulty may not prove so great after all, for it is unlikely that everyone now growing his own vegetables will wish to continue doing so. When living again becomes cheap, or at least reasonable, many men who have to work hard all day in the open will not be so keen to journey a considerable distance to continue their labours. At present it is a case of necessity to add to the food supply. In all fairness it cannot be expected that men who have to labour hard for 9 or 10 hours a day in all weathers will wish to continue the responsibility of an allotment longer than is necessary. It is otherwise, however, with those whose work lies in offices, shops, factories, &c.; to them the exercise in the fresh air acts as a tonic, not to mention the pleasure they have in producing their own vegetables. Many who have felt the invigorating influence of manual labour in the open air during the last few months will not willingly go back to the old way of living. It is probable, however, that those who must lose their plots in building areas will be able to acquire those that will be given up farther out. In any case, it is a matter which should be engaging the attention of the authorities now, and we are glad to note in the daily press that public men are now urging the necessity of obtaining powers to acquire land for allotments. Perhaps some of our readers would like to offer some observations on the subject of allotments after war; if so, we should be glad to hear from them.



VIEW FROM BALLYNAHINCH CASTLE.

Ballynahinch, Co. Galway

BALLYNAHINCH is probably the most westerly large garden in Ireland. It is further west than Lissadell, but it is not so close to the sea, and lacks Lissadell's shelter from N.E. winds; but, despite the fact that the house and gardens stand high and are consequently somewhat exposed to the terrific Atlantic gales of winter, an astonishing number of tender and semi-tender plants and shrubs are doing well there. The past exceptional winter has taken its toll; but here, as elsewhere, the connexion between wind shelter and hardiness is strongly marked.

Hydrangea hortensis is possibly the most wonderful sight, it is grown in masses, and the individual plants attain four to five feet in height, from early summer to late autumn they make a wonderful show—banks of them, yards wide—a riot of pink and blue.

On the south side *Camellia japonica* flowers well, and is already making good sized bushes, *Magnolia grandiflora* and *stellata* are also doing well.

Of less hardy plants, *Mimosa*, *Asters*, *Ceanothus* in variety, *Crinodendron Hookeri*, *Metrosideros*, *Ozothamnus* and *Veronicas* all seem to have survived the trying winter. Full advantage has been taken of the height upon which the house is built, and the river level is reached by a series of terraces, mostly stone paved. In these pavements rock plants are utilised—*Dianthus*, *Saxifragas*, *Campanulas*, *Thymus*, &c.—and the natural outcrop of limestone has been worked into the garden scheme with excellent effect—here a descending strata forms a natural rock garden, its cracks and crevices being planted with creeping rock plants—there the outcrops form a sheer cliff

festooned with mossy *Saxifragas*, Sun Roses and dwarf *Cotoncasters*. It is interesting to note on this cliff face seedlings of *Buddleia variabilis* sprouting strongly, and—wonder of wonders—seedling *Rhododendrons*, self-sown from the peat banks above, are struggling manfully in limestone cracks! It will be most interesting to note their future behaviour, at present some of them are nine to twelve inches high and, although their growth is naturally stunted, they do not appear unhealthy.

On the pergolas *Polyantha* Roses, *Vitis*, *Solanum*, *Polygonum baldschuanicum* grow vigorously, and on a small island in the river *Cordylines* and *Ferns* can be seen thriving.

Of *Conifers*, *Picea sitchensis* is the most satisfactory, but most of those already tried do well. Young trees of *Pinus pinaster* are showing great promise, and Mr. and Mrs. Berridge are carrying out some interesting experiments with seedling trees, amongst which *Black Walnut* and *Hickory* are doing well, *Pinus canariensis* is also being tried, but I fear it is too much to hope that this beautiful *Conifer* will succeed. *P. Montezumae* I did not note, it might succeed in similar conditions, and *P. Hartwegii* would, I think, be perfectly safe.

Of smaller things noted, *Iris Kempferi* is growing strongly by the waterside, and *Primulas* of the *japonica* type are naturalising themselves freely in the moist, peaty soil. In the rougher parts of the demesne *New Zealand flax* has been largely planted and is doing very well. Almost all bulbs thrive, *Crimm Powellii* being especially effective, and the thick belts of hybrid *Rhododendrons* and *Escallonias* give masses of colour and grateful shelter from the strong winds although it is interesting to note that *Cistus florentinus* came through the winter untouched

on a bare wind swept elevation and was killed in sheltered situations.

This is not a Rose country, and, even with special soil and drainage, the usual garden Roses are difficult, but Polyanthus and Rugosas are magnificent, and as an unusually fine coloured form of the Dog Rose grows freely everywhere, it may be possible to overcome the difficulties of the later hybrids by grafting or budding them upon this stock. It would be an experiment well worth trying.

M. H.

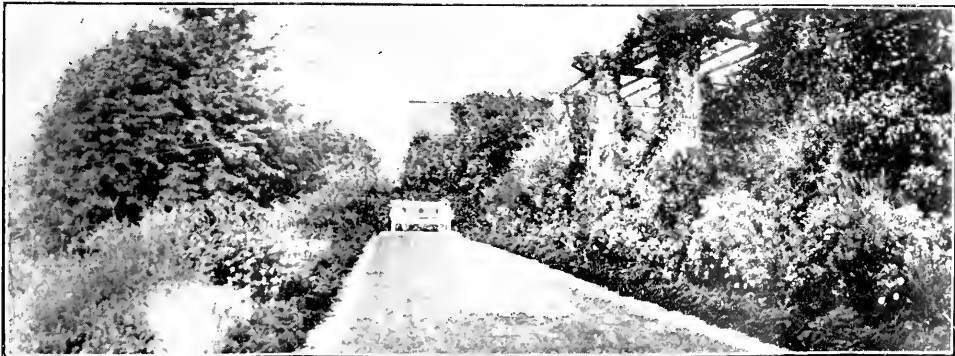
Trees and Shrubs.

Up to the time of writing—viz, the 12th of July, we have had an almost continuous drought of several weeks. This has been excellent for hay-making among trees, a painfully difficult business some seasons, but flowering trees and shrubs, and especially lately planted stuff, have had a somewhat trying time. In this dry soil, which contains absolutely no natural humus, shrubs and trees have great difficulty in making good growth if the early part of the season be dry. Heavy mulches of manure put on weak subjects in autumn is turning up now in dry cakes where weeding is being done, so that for lack of moisture less benefit has accrued than otherwise would have been the case. However, a very good display of flowers has obtained in spite of adversity. Rarely have the Dentzias flowered longer or better. The earlier flowering species and varieties were noted in last month's Arboretum notes, and they were followed by *D. crenata* with its various forms. These are mostly bigger growers than the early ones, though some of the Chinese species appear likely to attain considerable size. *D. crenata* when well grown gets as large as some of the Phila-

delphuses, and is not so coarse—that is, there seems a better balance between flower and foliage. There are several varieties, of which the double is one of the most distinct. *D. crenata* is correctly called *D. scabra*, although the former name still persists in catalogues.

Among the many Rose species which have come into flower since *Rosa Moyesii* bloomed none is more delightful than the old Musk Rose, *R. moschata*. Grown in the open it forms a wide spreading bush with stout arching branches which now are furnished for half their length with large corymbs of white heavily scented flowers. It is an admirable species for growing as a specimen, and flourishes where the highly-bred hybrids languish.

Clematis montana Wilsoni is always welcome, flowering in July, when the typical form is long over and when white-flowering climbers are not plentiful. The flowers are larger than the common form, quite as large as the variety *grandiflora*. Two of the finest "False Acacias" are flowering beautifully this year—namely, *Robinia hispida*, commonly called the Rose Acacia, and *R. viscosa* The Clammy Locust. The former has lovely rose-coloured flowers of good size, and the latter pink or pale rose with a yellow blotch on the standard. Of the many Philadelphuses which have come into flower in July, rather later than usual, none is more beautiful than *P. Lewisii*, one of the older species; in it there seems to be a better balance between flower and leaf than in some of the others, which seem always to show an excessive amount of young growths among the flowering branches. *P. Lewisii* carries the flowering branches well above the succeeding growths, and is thus light and graceful in appearance. Another very fine shrub is *P. latifolius*, often called *P. grandiflorus* var. *floribundus*; the flowers are particularly

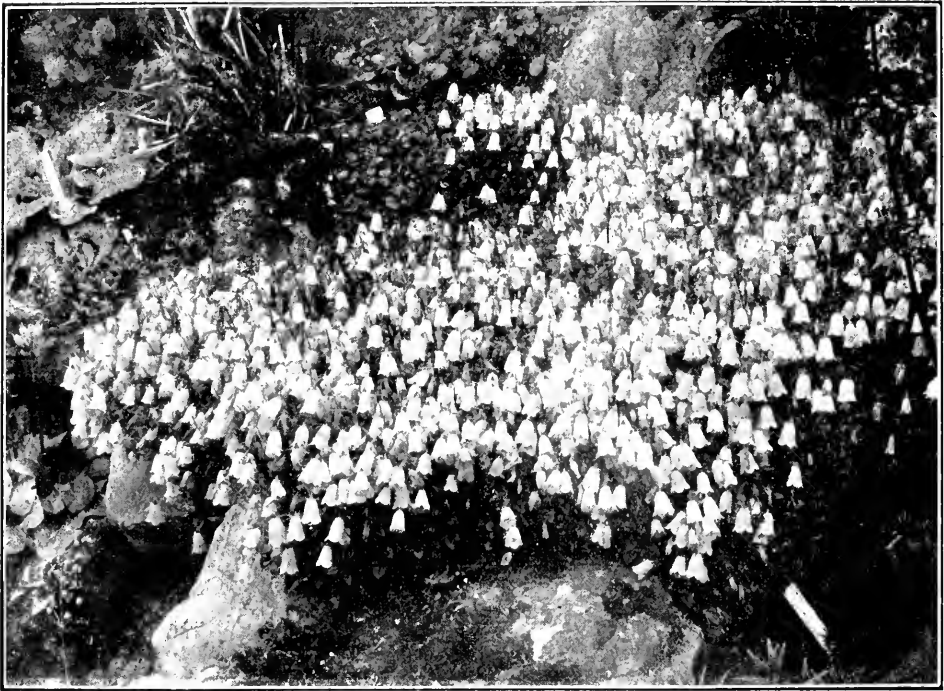


THE MIDDLE TERRACE, BALLYNAHINCH CASTLE.

large and striking, and all things considered it must be reckoned one of the best of the large growers.

For purely decorative planting where colour effect is important some of the newer double varieties are to be recommended. Conspicuous among them is *P. Virginalis* which bears abundantly large white flowers, the broad outer petals surrounding a central "boss" of smaller ones intermixed with the remaining stamens ;

with its clusters of pale pink or almost white sweet-scented flowers. It is a deciduous species of the Azalea group and comes from Eastern North America. Among true Honeysuckles none is more striking than *Lonicera tragophylla*, a native of China, introduced by Mr. Wilson but discovered previously by Professor Henry. It apparently likes a cool moist soil, for I lately saw it growing with remarkable luxuriance in Mr. Armytage Moore's interesting garden in



CAMPANULA PULLA.

this fine variety appears at some distance away to be a mass of white. A rather older, but equally fine, variety is *P. Rosacea*, with handsome semidouble flowers.

Among *Spiræas* which have been lately attractive *S. japonica ovalifolia* has been noticeable. It is one of the Chinese forms introduced by E. H. Wilson, and is at present about 3 feet high, the majority of the shoots terminated by a corymb of white flowers. Although not so showy as the rose and pink varieties, it flowers earlier and has merits of its own.

Most *Rhododendrons* are over in July, but the Swamp Honeysuckle *R. viscosum* is welcome

County Down. The long-tubed bright yellow flowers are produced at the ends of the branches, while the leaves, which are glaucous beneath, have in general effect a somewhat brownish appearance, adding considerably to the whole effect.

Allied to the Honeysuckles is another remarkable shrub, namely, *Kolkwitzia amabilis*, also from China. This I saw early in July flowering beautifully in Sir John Ross's wonderful Arboretum at Rostrevor. The flowers, which are pink with yellow throats, are borne in pairs like many of the bush *Loniceras*. When the flowers fade the calyx persists surrounding and extending beyond the fruit.

Notes.

Dianthus neglectus.

THIS is certainly one of the loveliest of all the pinks, and is worth growing in quantity in even the smallest rock garden. Flowering in June and early July it gives a most effective bit of colour, while individually the plants are neat and unaggressive. The flowers vary somewhat from seeds, but all are beautiful, and particularly good coloured forms may, if desired, be propagated from cuttings. Undoubtedly, however,

the drought, due probably to the long thick taproots penetrating to the cooler moisture subsoil below. In some gardens this *Campanula* sows itself so freely as to become almost a weed were it not so handsome wherever it crops up. Lately at The Bush, near Antrim, where Mr. Barton grows many things so finely, we noted masses of self-sown seedlings which must have been 6 feet high, the soil there being cool and moist. Seedlings vary a good deal in colour, inclining generally to the lighter shades—viz., white and pale blue. The best perhaps are pure white and a dark blue which used to be called variety *celtidifolia*.



CAMPANULA RAINERI.

the most vigorous plants are produced from seeds, and in the writer's experience seedlings are longer lived than plants from cuttings. The general colour is rosy-carmine with the reverse of the petals buff-coloured while the leaves are almost grass-like in their fineness. A deep gritty soil in a sunny position suits *Dianthus neglectus* admirably.

Campanula lactiflora.

A GOOD DRY WEATHER PLANT.

THIS bold handsome Bell-flower is flourishing in the dry soil of the Botanic Gardens at Glasnevin, while many other herbaceous plants are languishing in the hot sun of early July. Several clumps, 5 to 6 feet high, are apparently indifferent to

Campanula carpathica pelviformis.

CAMPANULA CARPATHICA and all its varieties are amongst the most beautiful and useful of Bell-flowers, and none is more attractive than this old variety. About a foot to 15 inches high when in flower, the pale blue flowers are carried well above the foliage. For the front of the herbaceous border or a nice pocket at the base of the rockery no dwarf plant could be more attractive.

A Hybrid *Campanula*.

IN the summer of 1914 the late Mr. Ball, who was well known to many of our readers, made some crosses between various species of *Campanula*. The seeds were sown when ripe, but

had not germinated when Mr. Ball went away to the Army. During 1915 a few seedlings appeared and at first grew slowly, and for nearly two years did not seem quite happy. The seedlings, however, were cared for as well as possible, and have gradually increased in strength, and this summer two of them have flowered.

The plant illustrated in our present issue resulted from *C. Raineri* × *C. pulla*, and is quite a beautiful bell-flower. The influence of *C. Raineri* is easily seen in the leaves and shape of the flower, that of *C. pulla* is not so easily discernible. The hybrid is larger in the leaves than either of the parents, and also in the flowers, but in shape they show unmistakably the influence of *C. Raineri*; the colour of the flowers is difficult to describe, but might be called light rosy lilac. The inflorescence too departs altogether from either of the parents, being a trailing loose raceme, as shown in the illustration.

The other seedling was apparently the result of the same cross, and shows unmistakably the influence of *C. pulla*, though it is much more intermediate than the hybrid illustrated. The flowers are intermediate in shape and opened a dark blue, becoming lighter to medium blue as the flowers became fully open. The leaves, though showing affinity with those of *C. Raineri*, are not so large as in the case of the plant illustrated.

As both are flowering for the first time, it is early to say whether they will prove perennial, but as both parents are, it is natural to assume they will be so; at present most of the young shoots produced bear flowers.

Although it is not easy to see any connection with *C. pulla* in the plant illustrated, the label in the seed pot is still the one which Mr. Ball wrote himself, and must therefore be accepted as correct.

J. W. B., Glasnevin.

Campanula carpathica turbinata.

This is another variety well suited for the rock garden, being little more than 6 inches high

when in flower. The flowers are comparatively large, wide open, and dark purplish-blue in colour. *C. carpathica pelviformis* mentioned above is said to be a seedling from *turbinata*, but in the former the flowers are nearly flat.

Rhododendron rubiginosum.*

This is not exactly a new species, having been first introduced to European gardens in 1889, but it is not common in gardens, though occasionally met with in the larger collections. It has, however, been found in China lately, and will probably become commoner within the next few years. The credit of first introducing the species belongs to the Abbé Delavay, an indefatigable collector, to whom horticulturists owe much.

Through the kindness of Mr. J. C. Williams of Caerhay's Castle, Cornwall, we are able to depict *R. rubiginosa* growing in its native habitat in China. The photograph taken by Mr. George Forrest shows admirably the upright habit of growth. It is an evergreen with roughish branches, bearing leaves from 2 to 3 inches long and about an inch wide, tapering to both ends. The flowers are produced early, during April or early May,

and are borne in clusters at the ends of the branches; they are not strikingly beautiful, but are of a pleasing rosy-lilac colour.

Erica cinerea coccinea.

This is the most striking variety of the Scotch Heath, and should be planted in quantity wherever Ericaceous plants do well. It is quite dwarf in habit and bears a profusion of deep red flowers which show up well among *Rhododendrons* and kindred shrubs. It is well suited

* In referring to the photos. of Chinese *Rhododendrons*—which we hope to publish—in our July issue, we inadvertently gave the name of the donor as Mr. P. D. Williams instead of Mr. J. C. Williams as above.



CAMPANULA RAINERI × PULLA.

Photo by R. M. Pollock.

to the rock garden, where it might be accommodated in a large pocket prepared with peat and sand. The colour is so striking and the flowers remain in condition so long that the rock garden would gain much in attractiveness at a time when early alpine are on the wane.

Lilium regale.

THIS handsome Chinese Lily, introduced by E. H. Wilson, is very fine this season, and is welcome if for no other reason than that it is a loam Lily, requiring no fancy peat and sand mixtures. A good deep loam in a sunny position seems to suit it well, though doubtless it benefits, like many other species, from the shade given to the roots by other herbaceous plants growing near it. The large handsome flowers are white within, shading into yellow towards the middle of the tube, while the outside of the segments is shaded with brown. The height is about 4 feet, but might be more in a moister soil. Seedlings are easily raised, and, with care, may be grown on to flowering size in about five years.

AXON.

Correspondence.

Rhododendron yunnanense.

TO THE EDITOR OF "IRISH GARDENING."

SIR,—In your issue of July, p. 100, the writer "B." makes a statement regarding *Rhododendron yunnanense* which is open to question. He says ". . . It is doubtful if there are any true plants of *R. yunnanense* in cultivation other than seedlings raised from seeds recently sent home. A few comparatively old plants which have been known in gardens as *R. yunnanense* are now recognised as *R. chartophyllum*, and were introduced to Europe through Paris by the Abbé Delavay some twenty-five years ago."

There seems no reason to doubt that the plant figured in the "Botanical Magazine" at tab. 7614 as *R. yunnanense* is the true species. It was received at Kew from Messrs. James Veitch & Sons in 1894, and first flowered in April 1897. Sir Joseph Hooker, who described the plant in the magazine, was not even responsible for its determination, but it was Franchet, the author of the species; for Hooker states that he sent a specimen to Franchet and he identified it with his *R. yunnanense*. The chief characteristic of *R. yunnanense* is the bristly hairs on the margin and upper surface of the young, and very frequently on the old, leaves. These are clearly shown in the figure in the "Botanical Magazine." Hooker says that his plant "differs a little from Franchet's description in having no scales on the upper surface of the leaf, and in the calyx not

being ciliate." On a close examination of the specimen I find a fair number of black glandular scales on the upper surface of the leaves, and also minute hairs on the rim of the calyx, so they were evidently overlooked.

R. yunnanense and *R. chartophyllum* may be distinguished as follows:—

R. yunnanense.—Leaves, especially when young, covered on the upper surface and margin with bristly hairs and small black glandular scales, oblanceolate and tapered to the base, not long-pointed, but merely acute at the apex; glandular scales on the lower surface rather numerous: leaf-stalks fringed with a few hairs; flower-stalks not scaly.

R. chartophyllum.—Leaves not hairy from the beginning, usually more or less elliptic and broadest in the middle, tapered into a long acute apex, the glandular scales on the lower surface much fewer and more scattered than in *R. yunnanense*: leaf-stalks never hairy: flower-stalks clothed with scattered glandular scales.

R. yunnanense, especially in regard to its flowers, is much more likely to be, and I believe is, confused with *R. Davidsonianum* than with *R. chartophyllum*; but *R. Davidsonianum* has no hairs on the leaves, the glands on the lower surface are very nearly contiguous, and the flowers arise from several buds, and do not form only one as in both the other species.

J. HUTCHISON.

Herbarium, Kew.

Atropa Belladonna. Shade or Sun?

DEAR SIR,—*Atropa Belladonna*, of all the herbs which we are trying to grow, is likely to be the most profitable and lasting, so it is worth while to consider its likes and dislikes.

Mr. Holmes tells us that it "only flourishes luxuriantly when under shade of trees."

Consequently, I transplanted my crop from the blazing sun (where they thrived last year) to shade and partial shade.

They have not grown nearly as well as they did in sun last year. I have put out thousands of seedlings in June in the scorching sun we have had—they have been watered, of course—but they are better as seedlings than two year olds in the shade.

I have planted very strong seedlings in the woods in perhaps more than half shade and not full shade, and they have not grown at all. All these experiences lead me to suppose that regulations as to shade and sun, just like regulations as to racing, petrol, food, conscription and the like, "do not apply to Ireland."

It has been found in the Blandsfort garden, that Alpines requiring—by book—full shade, do better in our full sun. Probably it is all a question of a sufficiency of moisture, and Ireland never lacks that.

It would be interesting if other growers of *Belladonna* would relate their experiences, for the benefit of all who are interested in this subject.

Yours truly,

MURIEL E. BLAND.

July 17th, 1917.

Fruit Crop and Fruit Crop Prospects (Ireland), 1917.

NOTE—The reports here compiled refer to the crops and prospects as far as ascertainable in mid-July. In order to secure as much uniformity as possible in the Returns a scale of descriptive terms was agreed upon—viz., (1) very good, (2) good, (3) average, (4) below average, (5) bad. The names of the County Horticultural Instructors are starred (*).

County and Locality	Apples	Pears	Plums	Cherries	Gooseberries	Currants	Raspberries	Strawberries	Name of Correspondent
ULSTER									
<i>Antrim</i> —County	Good	Below av.	Below av.	Good	Good	Average	Very good	Good	R. H. Clarke *
Larne	Bad	Bad	Walls good; open bad	Bad	Good	Good	Below av.	Good	J. Gty
Randalstown	Good	Average	Average	—	Good	Very good	Good	Good	Rev. W. Martin
<i>Armagh</i> —County, South	Below av.	Average	Average	Average	Average	Very good	Good	Good	F. Tunnington *
North	Below av.	Average	Average	Good	Average	Good	Good	Average	J. Hagan *
Loughgall	Good	Very good	Very good	Bad	Good	Average	Very good	Very good	W. F. Spencer
Annaighmore	Bad	Bad	Bad	—	Good	Below av.	Below av.	Below av.	J. J. W. Dunlop
<i>Cavan</i> —County	Very good	Below av.	Average	Bad	Average	Very good	Very good	Very good	J. MacEgan *
Arley	Very good	Average	Good	Below av.	Very good	Very good	Average	Bad	Jas. McCann
<i>Donegal</i> —County	Average	Good	Below av.	Average	Below av.	Very good	Good	Very good	J. Dunne *
Mulroy	Average	Good	Average	Good	Average	Good	Good	Good	D. Fogill
Ramelton	Good	Good	Average	—	Bad	Very good	Average	Good	H. G. Donaghy
<i>Down</i> —Lisburn	Below av.	Bad	Bad	—	Good	Good	Average	Below av.	W. Todd
Hillsborough	Very good	Very good	Bad	Bad	Average	Good	Very good	Below av.	T. Bradshaw
Strandtown	Average	Below av.	Average	Average	Very good	Good	Good	Very good	F. G. Reilly
Gilford	Good	Very good	Bad	Below av.	Average	Very good	Very good	Average	Jas. Lynas
<i>Fermanagh</i> —County	Good	Good	Average	Below av.	Below av.	Very good	Good	Very good	P. Brock *
Ballinamallard	Below av.	—	—	—	Below av.	Average	—	Bad	H. A. Barke
Crom Castle	Average	Below av.	—	—	Bad	Very good	Very good	Very good	A. Reid *
Tobermore	Bad	Below av.	Bad	Good	Average	Good	Very good	Good	J. Diamond
<i>Monaghan</i> —County	Below av.	Bad	Bad	Below av.	Average	Below av.	Below av.	Average	S. Toner *
Tyrone—County	Very good	Average	Very good	Good	Average	Good	Good	Good	S. Magill *
Strabane	Below av.	Average	Below av.	—	Below av.	Below av.	Average	Below av.	J. M. Namara
Sion House	Average	Very good	Good	Good	Average	Good	Average	Average	F. W. Walker
Glogher	Below av.	Good on walls	Average	Average	Below av.	Average	Average	Average	L. M. Latren
LEINSTER									
<i>Carlow</i> —Rathilly	Average	Very good	Very good	Very good	Very good	Very good	Below av.	Average	W. M. Foulds
Bagnalstown	Very good	Good	Average	Bad	Below av.	Good	Average	Average	S. E. Colvin
<i>Dublin</i> —County	Average	Good	Good	Good	Good	Good	Good	Good	P. J. Gray *
Dundrum	Good	Very good	Good	Average	Good	Very good	Very good	Good	T. Masterson
Glonsilla	Average	Good	Bad	Bad	Below av.	Good	Good	Good	J. Lent
Chapelizod	Good	Average	Average	Bad	Average	Good	Good	Average	E. Maskey
<i>Kildare</i> —More Abbey	Very good	Very good	Average	Below av.	Average	Good	Very good	Good	C. Pilgrim
Carton	Very good	Very good	Very good	Very good	—	Very good	Good	Very good	A. Black
Athy	Good	Good	Below av.	Bad	Below av.	Good	Good	Below av.	J. B. Plewman
<i>Kilkenny</i> —South	Very good	Very good	Below av.	Good	Average	Good	Average	Very good	C. Langley
County	Average	Bad	Average	Below av.	Below av.	Good	Average	Below av.	E. Purcell *
Flood Hall	Average	Average	Average	Good	Below av.	Very good	Very good	Average	J. Stark
Piltown	Good	Average	Average	—	Good	Good	Average	Good	R. Dalton
Bessborough	Average	Very good	Very good	Average	Good	Very good	Very good	Good	T. E. Tomalin
Govran	Very good	Good	Average	Bad	Good	Very good	Very good	Good	G. Roche
<i>King's</i> —County	Average	Average	Average	Average	Below av.	Very good	Average	Below av.	F. Clarke *
<i>Longford</i> —County	Good	Average	Good	Average	Bad	Very good	Very good	Bad	W. Johnston *
Castle Forbes	Average	Below av.	Bad	Below av.	Very good	Very good	Very good	Below av.	J. A. Boyle

Fruit Crop, Ireland, 1917.

THE reports herein submitted to this Journal show on the whole a satisfactory forecast of the fruit crops for the present season.

At one period a record crop of all fruit was expected, as, owing to one of the worst winters and cold late springs on record, the plants were so extremely late in coming into bloom that little or no danger was expected from spring frosts. The trees and bushes presented a healthy appearance, being in most cases covered with blossoms, and insect pests were not expected to be so numerous after such an abnormal winter.

This was the hope of fruit growers. As the reports indicate there is a good crop of most fruits, Gooseberries and Cherries being lighter than usual.

If our old orchards were examined they would be found to be a conglomeration of varieties, some good, others bad. Now, however, with many of the young orchards, especially in the north, the whole place will be planted up with only one—*i.e.*, Bramley's Seedling—which is almost as bad as having too many varieties, as Bramley is not a good pollen producing variety, and, owing to this, many of the flowers fail to become fertilised.

In Clare and Cork there are a number of well cropped orchards bearing first quality fruit. There are also good crops in the orchards around Piltown, and Tipperary and Waterford. In the north the crops are more variable, medium crops being most common.

Where fruit growers have more produce than can be used in a fresh state, and yet not sufficient to market, they should arrange to have it preserved by bottling or other process, so that it may not be wasted, as all the fruit in the country will be needed this year.

APPLES are variable, some orchards bearing well whilst neighbouring ones are poor. However, on the whole, they are a fair to good crop, and the fruit in most cases promises to be of very good quality. The following varieties are bearing good crops:—Beauty of Bath, Bramley's Seedling, Charles Ross, Worcester Pearmain, Lane's P. Albert, Early Victoria, Golden Spire, Cox's Orange, and, where grown, Peasgood's Nonsuch are bearing very heavy crops, whilst Grenadier, James Grieve, Annie Elizabeth, Blenheim Orange and Bismarck are bearing light crops.

PEARS in general are a good crop, especially on walls, where they are swelling very rapidly. They are also much cleaner than last year. Bauré de'Amalis, William's and Doyenne du Comice are bearing good crops of sound fruit. The trees bore huge masses of blossom, and a bumper crop was expected, but the continuous bad weather when the trees were in flower prevented many from setting their fruits.

PLUMS are an average crop in the Plum growing districts; in private gardens there are some very heavy crops, especially on Victoria and Rivers. Wall trees are bearing well in general, and the fruit promises to be of good quality.

SWEET CHERRIES are the worst crop for years, very few trees are bearing a good crop. In the Strawberry Beds area the crop is a very poor one, owing to bad weather and black fly attack. Morellos are bearing much better, and more of this valuable tree should be planted against walls.

GOOSEBERRIES are, in general, an average to

below average crop. Birds played havoc with them this year by eating out many of the buds, house sparrows vying with bullfinches as to which could do the most damage. Here and there very good crops are to be found, but it is the exception.

CURRENTS are the best crop of the year, and the fruit is of first class quality, good prices being offered by jam manufacturers for Irish Black Currants. From all the correspondents there is not a single bad crop, and there are only three below average crops reported. This is something to be thankful for, as it can be easily preserved.

RASPBERRIES are also a very good crop on a whole, especially in the commercial growing districts, and remunerative prices were offered for the fruit. In cases where the canes were not properly thinned last autumn and the weak canes cut away to allow the stronger ones to ripen up thoroughly, many of them succumbed to the severe wintry weather of last spring.

STRAWBERRIES are the most disappointing crop of the lot. They produced an abundance of late flowers and promised well, escaped the frosts, set well, and the early fruits were excellent. Then the drought came along and the second picking was not so good, and the late fruits were very poor, not being so good as expected.

Insects have not been so injurious as they usually are, the outstanding ones being the caterpillar of the Gooseberry sawfly and those of the winter moth. Very few gardens appear to have escaped from the ravages of the former, in many cases the entire bushes being defoliated, the berries alone remaining on the bushes. In the case of the latter, they appear to have done most damage on young trees, not only eating the buds and leaves, but in some cases also eating the fruitlets. In a number of the Armagh orchards much damage was done by these caterpillars.

Aphides have not been so troublesome as in past years, and, excepting on a few Plums and Currants, very little damage has been done. A number of correspondents report that the Pear Leaf Blister Mite is on the increase. This is serious, as it is a most difficult pest to check once it gets in.

Codling Moth has not been so injurious as in other years, nor was Apple Sucker quite so numerous.

A comparatively rare insect—the Capsid Bug—is making its presence felt in the Armagh districts by disfiguring and malfarming the young Apples also injuring the young growing shoots and young leaves. Spraying experiments with nicotine solutions are promising well as checking the ravages of this insect.

Fungoid pests have not been so severe this year, Apple mildew being the only one to be on the increase. Canker and scab on the Apple and Pear trees and fruits are the two most troublesome pests. They are, however, not so severe as last year, when whole orchards were ruined. Six correspondents report American Gooseberry Mildew as doing much damage to the Gooseberry bushes and fruit, and two report a pest known as Pocket Plum as doing much damage to Plum and Damson fruits, one correspondent states that in one orchard 70 per cent was affected.

I beg to thank the numerous correspondents for kindly forwarding the valuable information to enable me to compile this report.

W. S. IRVING,

Succession Crops.

In most of the small back gardens which were cultivated this spring they will have had Potatoes for a large portion of the crop, and on lifting these the ground will probably be very dry, especially so if the planting was done on lazy beds. When lifting, the stalks of the Potato plants can be buried in the trenches, and covered with the soil off the beds, and so level the ground over. The bed will have to be dug, as this was not done at first, but if manure was given when the Potatoes were planted, none need be put in now, and it can be added, when recropping in the spring.

Arrangements will have to be made now for replanting this same bit of ground for the winter and early spring months. The usual thing would be to put in a crop of Cabbage, sturdy young plants from seed sown in the seed bed last April or May. These will have to be planted without further delay, as it is getting late. If the owner had considered when his Potatoes would be lifted, and that his ground would not be ready for planting until August, he might have made a small sowing of Cabbage in June, which would just be fit for planting in August.

Cauliflowers, too, may be planted, and here again no time should be lost. Only plant strong plants, and firm them well into the ground. These will be fit for cutting in October and November.

Turnips are an excellent vegetable and make a variety, and this is a crop which can be sown direct in its permanent quarters. Not transplanting is necessary, only thinning. The seeds should be sown fairly thick, but not too deep. There are two kinds, white and yellow. The white must be grown on quickly and used as soon as fit, when not quite as big as a tennis ball. They will not keep in the ground. The yellow can be left to be eaten when larger, if desired. If the winter is mild and the leaves are not spoilt by frost, the "greens" can be cooked and are a welcome dish. One advantage of growing vegetables in a small garden is that during a drought it is possible to water the crops, and in the case of turnips especially a drought will ruin a crop, as in dry weather they run to seed before a decent sized root has been formed. Hence the crop

should be grown on as quickly as possible. Leeks are also suitable for planting now in deep soil, which is well broken up and free from lumps. Plant them in a dibble hole and merely fill in the very base of the hole, leaving the rest to be filled in by degrees from watering and working the ground.

R. M. POLLOCK.

Allotments and Suburban Gardens.

THE work for this month will be comparatively light. Efforts should be made to prevent weeds from seeding. Rubbish of all kinds, such as the yellowing leaves of Cabbages, &c., should be cleared away and placed on the compost heap, or in the bottoms of trenches at the time of digging over vacant ground.

SEED SOWING.—During the first week of the month sow the main crop of Cabbage seeds in order to provide next year's supplies of spring and early summer Cabbage, sowing varieties such as "Flower of Spring," "Offerdam," "Ellam's Early," "Early York," &c. Later on in the month, about the 25th, make a small sowing of Brussels Sprouts, Red Dutch and Savoy Cabbages and Early London Cauliflowers. These will give early supplies for the next season. For these crops the seed beds should be well prepared by deep digging and by the incorporation of a little leafy matter or well rotted horse manure. Where the soil is the least bit sour and finger and toe disease trouble some, lime or plaster rubble should be mixed with the surface soil, using about 4 ozs. to the square yard, or about 2 ozs. of powdered



RHODODENDRON RUBIGINOSUM IN CHINA.

Photo by George Forrest

quicklime: this will sweeten the soil and prevent the development of the disease. When about to sow the seeds, drill should be made about half an inch deep and nine inches apart, a little red-lead should be shaken up in the packet with the seeds—to prevent loss by birds—and the seeds sown thinly. It is very important that seedlings which are to remain in the ground during the winter should receive full air and sunshine in order to make them thoroughly hardy, and this can only be done by giving them plenty of room to develop. At the end of the month seeds of Onions, such as Cranston's Excelsior, Ailsa Craig and Tripoli varieties, should be sown, to provide early "Scallions" and Onions; also a few Lettuce seeds, using varieties such as All the Year

* "Greens" are the young tops produced by the turnips in Spring.

Round, Hardy Hammersmith, Black Seeded Cos, &c. &c.

PLANTING.—Broccoli and spring sown Cabbages should be planted in the ground previously occupied by Peas, Beans and Onions. The former is an exceedingly valuable vegetable, but, as it occupies the ground until so late in the spring, it often interferes with the cultivation of spring and summer vegetables. It should, therefore, be planted discriminately. The ground if previously well manured, as for Onions, will not need digging again, as this crop does well on firm ground. The final planting of Leeks should also be made on well manured ground.

EARTHING UP.—Towards the end of the month give Celery and the early batch of Leeks a little mounding up with soil, in order to commence the blanching process, which begins as soon as the light is kept away from the plants. Commence operations by forking over the soil in the ridges, so as to break it into fine particles. Then remove the side shoots from the bases of the Celery plants, also the outside leaves which are turning yellow. Then tie around the leaves of each plant with Raffia or soft string, so that there is no space for the soil to drop into the centre of the plant. Then take a little of the pulverised soil and place it gently against the leaf stalks of the plants until a ridge about five inches high is formed, then later on—in about a month—give a further application. This blanching process should not commence before the plants have grown well, otherwise the stems will be weak and the plants more susceptible to leaf spot disease, which has become very prevalent of late years. This disease can be kept in check by the use of dilute Potato Spray Mixture. Care should be taken to thoroughly wash the plants before using or disposing of them. A little soil should be drawn towards the stems of Brussels Sprouts and Cabbages, &c., this will act as a partial support and fertiliser.

RIPENING OFF.—The various Onion crops, such as Shallots, Potato Onions, autumn and spring sown Onions, should be ripened off, if this has not been done already. Lift all those whose tops have turned yellow and place on a sunny path or pavement, or suspend on wire netting in a sunny position. Bend over the necks of those which are still green and lift in a fortnight or three weeks' time, treating them similarly. This ripening of the Bulbs considerably improves their keeping qualities.

FLOWERS.—Continue to pick off the seed pods on Sweet Pea and other plants as soon as they begin to develop. By so doing a longer supply of flowers will be obtained, which can be further increased by giving the plants applications of liquid manure at intervals. Stake Dahlias, Chrysanthemums and such other plants as may need support, hiding the stakes as much as possible. Take cuttings of Pinks, Carnations and Pansies early in the month inserting them in sandy soil in a cold frame or on a warm border. Wallflowers and other biennial flowers can still be transplanted: some of the ground which was previously occupied by early Potatoes will be quite suitable for this purpose.

FRUIT.—Complete the summer pruning of Apples, Pears and Plums, &c.

W. H. J.

Seeds for Autumn Sowing.

CABBAGE.

DESPITE the scarcity of Cabbages during the last spring due to the exceptionally cold winter, there is no question as to the value of a sowing in August. In many gardens a sowing is made in the middle of July, and often with quite satisfactory results, but occasionally if the autumn and early winter prove mild the plants from this early sowing get too big and do not winter well, or, if they come through, proceed to "bolt" with the first hint of warmer weather in early spring. The August sowing, however, being a month or so later, grows more slowly and has not reached so large a size when cold weather begins. If sown thinly in the middle of August the young plants will be fit for planting by the middle of October. Some gardeners advise pricking out the seedlings into a nursery bed for a few weeks prior to planting where they are to mature, but if thin sowing is practised this is not necessary.

If the plot to be planted has been well manured for a previous crop none need be dug in for the Cabbages, but this is a matter which must be decided by the nature of the ground: if dry and naturally poor manure may be necessary. One thing should be made absolutely certain, and that is, the soil must be made as firm as possible to induce sturdy growth as opposed to the production of large soft leaves, which will surely be killed before the plants can "turn in" in spring.

It is worth going to some trouble to have a nice batch of firm young Cabbages fit to cut at the end of March and through April. There are many varieties favoured by different growers in different districts, but the following will generally be found satisfactory:—Harbinger, Sutton's April, Hurst's first and best, Ellam's Early, Flower of Spring and Mein's No. 1.

ONIONS.

Those most favoured for autumn sowing are Giant Rocca, Tripoli in variety and White Lisbon. August is a good month to sow, as germination is usually quick at this time, and the young plants may be transplanted to their permanent beds in October. In some districts it may be found better to leave the transplanting till spring, this applies particularly to heavy cold soils, which are not so favourable to a late transplanted crop. The Onions mentioned above require a long season to mature, hence the necessity of giving them a start by sowing in autumn. The ground for Onions should be deeply dug and manured, according to its quality—if light, then a good dressing will be beneficial; if heavy and retentive, less will suffice. It is usual when sowing the seeds to sow in lines, transplanting as many as are required, leaving those remaining in the seed bed to be used or sold as Scallions in spring. When transplanting, either in autumn or spring, nine inches should be allowed between the plants and one foot between the rows.

In these times of scarcity of manure the value of deep digging cannot be over emphasised. It is usual to place great reliance on heavy applications of manure in the production of crops, but deep cultivation is more important. A soil made friable and sweetened by deep digging, which allows the air to permeate it, will produce good crops over a longer period than a shallow dug soil, heavily manured.

GARDENER.

Gardening for the Home,*

THERE are few details of horticultural practice which are less understood by the amateur than the use of the hose or watering can. Some appear to think that whenever surface soil turns light in colour, a day or two after heavy rain, it is time to turn on the tap again, when in fact what is needed most is the hoe to stir the surface and prevent the loss of moisture by evaporation. Others, again, appear to think that when the soil is really dry and in need of artificial watering, that as soon as they have changed the colour of the surface soil from a light grey to a dark brown that that is sufficient, and will go to bed with an easy conscience, thinking that they have done their duty by their garden.

To the inexperienced it is astonishing how much water is required to thoroughly soak a cubic foot of really dry soil, and until experience is gained it is a good plan to scratch up the soil occasionally as you play the hose on a circumscribed area to find out just how far the water has soaked in.

It is fun for your boy to be allowed to play the hose on the garden for a short time at least, but your neighbour's boy and other unoffending objects are likely to get more attention than your garden plants; the moral is, therefore, do the watering yourself.

If your garden is level or nearly so, it is a good plan to draw a shallow trench between the rows of vegetables or flowers, lay the hose down at one end and allow the water to run gently into it until some time after it has filled from end to end; do likewise over the whole garden, and a good, thorough soaking will be the result, and you will not be tired out manipulating the hose, but will have had plenty of time to read the evening paper or attend to something else between the times of shifting the hose from one trench to another.

If the garden is on much of a slope the irrigation trenches must be drawn out across the slope, if this is possible, so that the water will not run off before it soaks in.

The various kinds of sprinklers on the market are very useful for watering, especially on gardens on a steep slope, as the way in which the water is delivered gives it time to soak in.

Whichever way the watering is done, however, one thing is essential in each case, and that is the stirring of the surface soon afterwards; if the watering is done in the evening the surface ought to be cultivated next morning to help conserve the water applied.

Allow no weeds whatever to grow, as they rob your plants of much food, including water and light.

Vegetable crops are making rapid growth now and the roots will be searching every cubic inch of soil for food, and unless ample reserves were supplied at digging time, much benefit will be derived from the application of liquid manure. Liquid manure is best applied the day or evening after pure water has been given, grave injury may be caused to the roots if they are obliged to

take up too large quantities of water in which is dissolved acid or salty manures.

During this, the growing season, the element of plant food in most demand is nitrogen, which may be supplied in various forms—viz., nitrate of soda, sulphate of ammonia or in some of the natural manures such as chicken or horse droppings. The two former are difficult, maybe impossible to obtain at this time, but the two latter are always obtainable, and the best way to handle them is to place a quantity in a porous sack, tie the mouth and place it in a barrel of water to soak. If the barrel used is a 45 or 50-gallon one a hundred pound grain sack will be all right—larger or smaller barrels in proportion. Allow the material to soak for about a week, stirring and squeezing the sack several times in the interval, when it will be ready for use. Undiluted, the liquid will likely be too strong, and as a guide to the strength the liquid applied to the plants ought to have the colour of weak tea. With liquid manure little and often is the slogan; say, once a week, the next night after watering with pure water.

There is a quickly available supply of nitrogen in coal soot, and it is a good plan to put about a shovel full of this article to the hundred-pound sack of manure.

When applying liquid manure of any kind it is well to direct it to the soil and not to the plants, as injury may result to the young tender foliage.

On land just vacated by the early potato crop a few seeds of kidney beans may still be sown to supply a late crop of green pods, and a row of an early variety of peas may still be sown, but these two must be sown as early in the month as possible.

Lettuce, radishes, carrots and parsley for winter may be sown on any vacant land, and a sensible patch should be prepared by manuring and digging for the main winter crop of leeks. The plants if sown in early spring will be quite big enough now to transplant. When the patch is ready, mark off rows eighteen inches apart and set the plants six inches apart in the rows. To make holes for the plants a dibble with a stem about twelve inches long is required, and the plants are prepared by having their roots trimmed off to about a half inch from their base, and two or three inches cut off the tips of the leaves, making them from eight to ten inches long over all. The holes are bored to the full depth of the dibble and a plant dropped in each; hit the edge of the hole a light tap with the point of the dibble and this will cause enough soil to trickle down to just cover the root; leave the rest of the hole open. To those unacquainted with the culture of the leek, this will seem extraordinary treatment, but this is how they are grown for ordinary use. For exhibition they are treated more elaborately. The reason for the deep hole and the seeming burial of the plant is to give a long blanched stem, which is the part most prized by the housewife. Those of you who did not sow onions or enough of them in the spring, or whose onion crop has been ravaged by the maggot, I would strongly advise to put in as large a plantation of leeks as possible. They are an excellent substitute and are preferred by many to their more pungent cousin, the onion.

It is too late to sow seeds now, and if you

* The above article, though written primarily for readers in British Columbia, contains much of interest and use to growers in Ireland, and shows what our friends across the sea are doing in food production in their own gardens.

didn't grow any yourself, hunt up a neighbour from Scotland, England, Ireland or Wales, and he will likely be able to accommodate you from his surplus.

The earliest celery will be ready for its first hilling up by now, but before applying the soil go over each plant carefully and remove all side shoots and short leaves; also any tall-growing weeds, and give a good soaking of water if necessary.

If plenty of manure was given at planting time nothing further may be needed for early celery, but if thought desirable a dusting of equal quantities of bone meal and wood ashes may be given at this time. If water has been given, give the plants time to get thoroughly dry; then commence by loosening up the soil on the ridges and pulverise it with the spade so that it will not be lumpy and will pack tightly round the plants. Grasp the first plant with the left hand and with the right draw the soil from the ridge on that side and work it close up to and around the plant, taking care that no soil gets between the leaf stalks; change hands and do the same on the other side, and so on until the whole is completed. Three inches of soil is enough for the first and second hilling of early celery, and the crop will usually be consumed before any more is required. Main crop celery is treated the same way, but requires a third hilling when the plants are covered up to the tips of their leaves.

I have occupied my allotted space entirely with the vegetable garden, but during a time when good production is of such vital importance no excuses are necessary.—H. M. E. in the *British Columbia Fruit and Farm Magazine*, July, 1917.

Lilies in July.

APPARENTLY this abnormal year of 1917 suited some of our fine garden Lilies, for at least half a dozen species have already flowered well, and others show signs of being equally good in a short time.

Most striking of all, perhaps, was that grand and noble species *Lilium regale*. Over three feet high and bearing large white flowers shading to yellow towards the centre and flushed with brown on the outside, it was a delightful object when in flower. It is also deliciously scented, and needs no coddling, flourishing in good, rich, well-drained garden soil. Seeds are usually produced freely and germinate well, reaching the flowering stage in about five years.

Lilium japonicum *Krameri*, a chaste and beautiful species, has also flowered well this year. Planted two years ago in a peat bed, it failed to flower last season. Having gathered strength, however, it rewarded patience by opening its beautiful delicate pink blossoms this year. It is not considered very robust as a rule, but after coming through the late winter and spring there is considerable hope for it. Needless to say, it is protected by being planted among dwarf shrubs of a peat-loving nature.

L. Humboldtii is an American species of rare beauty, carrying up to twenty or more flowers when flourishing. The flowers are bright golden yellow, heavily marked with maroon or purple spots. It likes a cool peaty soil among dwarf shrubs which shade and protect the young growths in the early stages.

L. Burbanki is a hybrid raised in America by the man whose name it bears. It is a fine, strong-growing Lily, growing freely in peat and reaching a height of five or six feet. In appear-

ance it is rather like a strong-growing form of *L. pardalinum*, which is pretty well known in gardens, but there is said to be some variation in the shape and colour of the flowers due to its hybrid origin. In the specimens here the flowers are rich yellow with brown spots.

L. canadense is another American species doing well this year. It bears very pretty bell-shaped flowers, deep yellow and spotted inside. It reaches a height of three to four feet and flourishes in peat and half shade.

L. testaceum is an old and well-tried favourite in gardens, rejoicing in a stiff, moist soil. Nowhere have I seen it do better than in the stiff, cold soil of the Carse of Gowrie, in Perthshire, where it grew and increased with great rapidity. It is thought to be a hybrid between *L. candidum*, the Madonna Lily and the Scarlet Turk's Cap Lily, *L. chalcedonicum*. The flowers are of a beautiful Nankeen yellow borne on stems five feet high. It is purely a loam Lily, and a beautiful ornament to the herbaceous border.

L. croceum is a well-known and favourite species, also flourishing in loam and requiring no coddling. It is a glory in the herbaceous border in July with its branched umbels of orange yellow flowers. All the Martagon Lilies have flowered well this year, but particularly fine has been *L. Martagon dalmaticum*, with deep glossy purple flowers borne in profusion well above the whorls of leaves. It flourishes in good rich moist loam.

J. W. B., Glasnevin.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill,
Shane's Castle, Antrim.

THE weather during the first part of July has been warm and very dry, splendid for the destruction of weeds, but crops in general are beginning to suffer, and rain would be a blessing—the watering pot has never the same effect, but has always to be resorted to, for the most of vegetables are moisture-loving plants.

CELERY.—Give liberal supplies of water to the roots of Celery plants throughout the growing season in order to get a clean, healthy growth. The earliest plants should be earthed up as soon as the leaves are of sufficient height, great care must be taken that none of the soil is allowed to fall into the centre of the plants; neither should it be pressed too tightly, as the centre leaves need room to expand; also see that the roots are not dry before earthing up.

LEEKs.—Another plantation of Leeks may be made now to provide supplies next May. Leeks planted early in the season should be watered freely with liquid manure, and have the soil placed around the stems as growth advances. The Leek is a gross feeder, and is unlike most vegetables—the largest specimens have the mildest flavour.

CABBAGE.—Make your chief sowing for spring planting now, say from the first to the third week of this month. My favourite Cabbage for this sowing is Ellam's Early Dwarf. Newly dug potato ground will suit this crop.

TURNIPS.—Another sowing of Orange Jellies

and Blackstone Turnips may be made, and will come in very useful for spring use.

CAULIFLOWERS.—Make a sowing of Early London towards the end of the month in an old frame or any corner where the protection of a light may be given them through the winter.

ONIONS.—Tripoli and other varieties recommended for autumn sowing should be sown from the 15th to the 20th, weather permitting: the ground chosen should be in the open and in good condition. Sow fairly thickly, as the thinnings are a useful food in the spring time (commonly called Scallions).

LETTUCE.—Make a good sowing this month of Hardy Hammersmith or Continuity and All the Year Round, transplanting the strongest and leaving the smaller seedlings for transplanting early in spring—that is, if they withstand the winter, sometimes they don't.

ENDIVE.—A sowing may still be made early this month.

SPINACH.—Make the last sowing this month of prickly winter Spinach. The ground must be well manured for this crop. Before sowing give the ground a good dressing of soot and wood ash.

BROCCOLI.—Plant out without delay all the late varieties, selecting firm ground.

CUCUMBER and MELON that are bearing fruit in frames or pots should have all useless growth taken away: the former should be top-dressed at regular intervals.

MARROW PLANTS will require plenty of water and weak liquid.

THE FRUIT GARDEN.

The heavy showers of the last day or two have helped the growth and foliage of fruit trees greatly, they were beginning to look parched and dry, and they would all benefit from moisture given naturally from above, but failing that the water barrel will have to be resorted to.

SUMMER PRUNING should now be proceeded with, commencing on the south wall, where the shoots will be finishing their annual growth. Tie in all leaders that are required and stop all laterals at the third leaf from the base of the shoot. Go all round the garden doing the top half of the wall, leaving the bottom half to be done a few days later. Espaliers or trees trained on wires should be dealt with in the same manner, by so doing you also allow the sun to have more play on the fruit, giving them a better chance to colour up.

STRAWBERRIES.—The new plantations should be attended to as early this month as possible. Ground that has previously been trenched for Onions or old Celery ground is very good for Strawberries: firm it well before planting: two feet between the rows and eighteen inches from plant to plant. Clean old plantations without delay, cutting back all useless runners.

WASPS.—Keep a sharp look out for nests and destroy them all. Cyanide of potassium is the best means of destroying them. Dissolve a quarter of a pound in a pint of water, saturate a piece of cotton wool and place it over the hole, next day dig up and destroy all the grubs else they will come to maturity and another "flying corps" will follow and you will have the same trouble over again. Should red spider or mildew appear on the trees at this time give a dusting of flowers

of sulphur, but avoid using and spraying with insecticides whilst the fruits are ripening on the trees. *18. 22*

FLOWER GARDEN.

August is, perhaps, the month when the flower garden is at its best, but alas we must start and play havoc with some of the beds in the way of taking cuttings, starting with "Geraniums," the growth this year is poor on account of the dry spell we have had, so that cuttings will be hard to get, care must be taken that the appearance of the beds will not be altogether destroyed, but take two or three cuttings of each plant. Geraniums will root freely in the open in boxes filled with sandy soil, where they can remain until too much rain or frost is near at hand.

Cuttings of Heliotrope, Verbenas and Fuchsias will require a frame to root in, shaded for a few days from the bright sun and kept close.

The present is a good time to cut hedges formed of Holly or Yews.

LAVENDER.—Flowers of Lavender that are required for use indoors should be cut before they are too far advanced and dried in an open shed or a viney.

If not done, attend to the transplanting into nursery rows of spring bedding plants, such as Wallflowers, Myosotis, &c.

HERBACEOUS BORDERS.—The chief work will be the cutting back of withered foliage and flower stems. Remove the flower spikes of Delphiniums, but don't cut them right down to the ground until the bottom leaves decay. Save any seeds of any special colour of Delphiniums, as you can soon raise a big stock by sowing outside as soon as the seeds are ripe. (There are some grand colours in the Delphiniums.) Peustemons are a very useful showy plant in the front of herbaceous borders, they flower so persistently, any cutting should be taken now and inserted into a cold frame and given the same treatment as Calceolarias.

Continue to trim edges of beds and borders and walks, mow grass, scuffle and rake gravel paths, so that a tidy appearance is maintained.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Barrymore, Fota.

POTATOES.—During the month the crops of second earlies and possibly the maincrop varieties will be ready for lifting, and I am strongly in favour of getting them out of the ground at the first opportunity, when it is seen that growth is finished, as, in the event of a wet, sunless autumn or an attack of Potato disease, the tubers, when under control, can be much better dealt with to combat the spread of disease. It is not necessary to let the crop remain until the skins get perfectly hard, and should a little rubbing occur, even with careful handling, new skins will be formed. If the haulm is diseased, and for any reason it is not possible to lift the crop, then go over the plot and cut with a hook or pull out the stalks entirely and remove them to the fire, or in any case this facilitates the work of lifting and removing the crop without delay. Though everyone has not the convenience of a shed for storing

where a suitable place does exist it is preferable to clamping them in the open, as the crop can be examined in comfort when other outside work is at a standstill and made more secure against rats with a good saving of labour. A cool shed under a north wall, or one with a fairly equable temperature and preferably an earth bottom, will, I think, keep the crop in fine order, with a good thickness on top of straw or mats. A light covering only for the first week or two to exclude light will allow the crop to dry thoroughly. A handful of slacked lime dusted through the heap when storing or turning will, by reason of its absorbent qualities, act as a preventive of the spread of disease, and also improve their eating qualities. Seed for next season may be selected at lifting time or sorted later when there is less pressure of work and stored in trays in a light place.

ONIONS.—From the beginning to the middle of the month a sowing of Tripoli or winter Onions may be made for planting out in the spring. Sow on ground that has been brought down to a good seed bed and made firm in drills one foot apart. A sprinkling of lime or sifted lime rubbish and wood ashes put on and raked down with the soil will be of great benefit. I recently saw a very fine bed of autumn sown Onions that had been treated in every way similarly to spring sown and not sown too thickly were providing excellent material for the kitchen from the thinnings at the same time allowing those to remain for summer use a better chance to mature. It is imperative that only varieties specially suited for autumn sowing be used, otherwise much trouble from bolting will ensue. White Leviathan, though a bad keeper, is frequently grown, also those of the Rocca type. Encourage the growth of spring sown and transplanted Onions by keeping the lines free from weeds and loosening the soil between the rows with the Dutch hoe to prevent the surface from caking and holding the moisture. Shallots, if not already lifted, should be laid out thinly to dry and when properly ripened off stored away.

TURNIPS.—Much will depend upon the weather as to which batch will provide the best returns for winter use, but from the middle of the present month until the early part of September a few sowings may be made on good ground and the plants allowed to develop freely by early attention to thinning. A good sprinkling of wood ashes at the time of sowing and a dusting after thinning will greatly assist in the formation of good root.

CARROTS.—Attend to the thinning of latest sown batches and dust freely with soot. Earlier sown ones of the stump rooted kinds that are not required for immediate consumption should be lifted before the roots split and stored in sand or ashes in a cool shed and used as required.

CABBAGE.—Make another sowing early in the month to supplement the earliest supplies of a larger variety.

TOMATOES.—Those growing out of doors should have the point of the leading growth removed, so as to induce the trusses to swell to their best and ripen up. Plants growing under glass must not suffer for want of nourishment if they have space to make further growth. Should there be any trouble with the fruits splitting, as sometimes happens, and especially where other plants

are accommodated in the same structure, pick the fruits when partly coloured and finish off in a box in the fruit room. Shortening back of the leaves where too thick will be an advantage.

CELERY.—Towards the end of the month the earliest row will, in all probability, require a first earthing. In the meantime, encourage the free formation of leaf and stem by plentiful waterings and manual assistance, and water freely on the eve of moulding. Remove any side growths and yellow or other leaves not required. Run a line down on either side of the row and break up the soil as finely as possible, so that it works freely between the plants. If three men can be spared for this work it will be profitable, one to work backwards and support the plants and hold up the leaves together, and the other two supplying the earth, one on each side. See that the foliage is perfectly dry and avoid over-earthing the plants.

VEGETABLE MARROWS.—Water freely and assist with sewage water, excepting those growing on rich manure heaps, as this will assist in the formation of fruit. Cut these as soon as large enough, as if allowed to remain and ripen seed seriously taxes the plant. Leaves showing any sign of mildew should be cut off and burnt.

SPINACH.—Towards the end of the month make a sowing of Victoria Spinach to stand the winter. As with Turnips, it is impossible to say which batch will do the best, and sometimes the later sown, well into September, will prove the best.

HARDY FRUIT GARDEN.

Raspberries, after fruiting, should have the old canes cut away from the base, and if the young growths made this season are too thick some of these also should be removed to allow the remaining ones a better chance to ripen. Continue to thin crops of fruit where too thick and assist trees, if possible, by heavy waterings and supplies of manure, failing that keep the ground loosened and apply a light mulch. Grape scissors will be found very useful in thinning plums. Net Morello Cherries as soon as they commence to colour. Peaches and Nectarines will need a final tying and regulating of the growths and before the fruits get too large extra fine colour and quality will be gained if the fruits can be elevated by placing five-inch labels at the back of them and under the growth; also removing an odd leaf or two if heavily shaded. Water freely whilst swelling and feed liberally. Fowl manure is excellent for this purpose. If time can be found many other kinds of fruit may also be improved in quality by similar treatment to the above, especially on cordon trained trees.

THE FLOWER GARDEN.

Cut away the flowering growths of Rambler Roses upon the completion of flowering, and secure this year's basal growths by loose ties to prevent injury from the wind. Encourage the display of summer bedding by removing dead flowers, and damping of an evening after a hot day, pegging down any plants that require it. Clip Yew hedges and other trained specimens.

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Contents

	PAGE		PAGE
The Vegetable Harvest	129	Pentstemon secundiflorus	134
Planting Bulbs (Illustrated)	131	Convolvulus cantabrica	134
Henbane (Illustrated)	132	Potatoes	135
Rhododendron Sphæranthum (Illustrated)	133	Plants and the Winter	136
Prostranthera lasianthos (Illustrated)	133	Allotments as a Permanent Institution	141
Onion Mildew	133	Allotments	142
Caterpillars	133	The Month's Work—	
Trees and Shrubs	134	Midland and Northern Counties	142
Trollius asiaticus	134	Southern and Western Counties	143



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EDITOR—J. W. BESANT

The Vegetable Harvest.

Root Storing.

THE storing of roots is as important an operation as the growing of them. Carelessness in this may lead to quite a big loss, and, as there are thousands of allotment holders in Ireland obviously ignorant of the various methods of storing, a few seasonable hints may prove helpful to the novice. By roots I mean the edible fleshy stem of all vegetables, be they bulbous like the Onion or tuberous as in the Potato.

The Potato, rich in nourishing matter, probably takes first place in vegetable roots, and maincrop varieties will be ripening now, the dying down of the haulm and the fully finished ripe growth of the tuber will denote the proper time to lift. Choose a fine day for lifting, when the soil is free and dry; under these conditions the Potatoes will turn up clean and can easily be sorted into their different classes—small and diseased to be used at once for pig or poultry food, greened and seed size to be saved in boxes for next year's seed supply, and the large sound ones stored in pit or shed for human food: where a dry, dark shed with earthen floor is available this may prove the best means of storing, as the tubers can be turned and kept clean at any time during the winter, and in all weathers; but everyone has not got such a store, and a pit or clamp is then necessary. Proceed by cutting to the depth of one spade spit a space of 3 feet to 4 feet wide by whatever length you find necessary for your quantity. Gather the Potatoes in baskets, after they have thoroughly dried in the open air, and only when dry place them carefully into the pit, making sure that none are bruised in the operation; raise them to a sharp ridge and cover with straw—wheaten preferred—to the depth of 9 inches or more. Cover with soil taken out from a trench running parallel with the pit itself, leaving a ridge of

straw uncovered, to permit of the Potatoes drying out, as when placed together a certain sweating or heating takes place. The covering may be fully completed in a week or so to a total depth of 18 inches; finish smoothly by clapping with the spade. A line of turf with the grass side down makes a nice finished ridge besides being thoroughly weatherproof. If several varieties are pitted in one pit they may be separated by layers of straw. The Potatoes stored in a dry, well-drained site under a deep non-conducting layer of material, such as straw, bracken, leaves or peat moss, covered by an outer coat of earth, will keep well into the spring months without any need for examination, until the growing season, when they should be overhauled periodically and the pushing growths removed carefully. Storing for food naturally applies to maincrop varieties, but I have known early and second early sorts, such as Sir John Llewellyn and British Queen respectively, to come out as a perfect food in March, April and May.

The Onion, an equally favoured and valuable food, must be treated in a different way. By September the crop will have ripened completely, and of all the methods I know, stringing is the best. This can be best done by taking a strong piece of cord, three or as many feet long as one cares to have it, sort out the coarse thick necked or split bulbs for immediate use, keeping the fine thin-necked ones for late keeping; these are generally better finished and ripened, and, if strung together quite closely, will form a neat rope of Onions, which can be cut from as required without disturbing the other bulbs. Hang the rope by a nail in a dry shed, lumber room, coal cellar or scullery even, or if these places cannot be had, then under a board, to keep the rain off, against a wall will be found

good keeping quarters. The Onions with necks too short for stringing may be placed thinly in trays and kept dry. The essential requirement in storing Onions is to have them properly dried, and, if the weather be wet at harvesting, I would counsel a thorough drying over the kitchen fire, taking care not to roast them, of course. If a garden frame is available it will afford means for drying quite a large quantity. When spring approaches many of the bulbs will get soft and signs of growth take place, use these bulbs before they become unfit, and, if too many run in, one can plant out with a chance of their splitting into several growths ere sending up their flower heads. These growths will make useful flavouring for soups, stews, &c., and may save the younger autumn sown ones from a premature drawing.

The Carrot need not be lifted until the autumn days become frosty. These roots may be stored in pits or sheds, like Potatoes, the difference in storing is, however, great; Carrots are laid in layers with sand under and overlying each layer, the leaves are removed about an inch above the root, and all split or deformed Carrots selected for early use. They require a nice protective covering of soil over them only where placed in the open, but in a shed or proper root storing room sand is all that is needed. Should a supply of sand not be easily obtained, then fine soil, sifted coal ashes or peat moss will be equally suitable to cover them with.

Beetroot requires great care in lifting, and must be dug up with a fork. Should the smallest part of the taproot or skin be broken the Beet will bleed, and when cooked will have lost all its beautiful red colouring besides much of the flavour. The leaves must be wrung off by hand, not cut by knife, and the central rosette of leaves should be left without injury. Store

exactly as the Carrot, taking care to have the taproot facing inward for fear of injury by pressure from outside. Some growers have advocated leaving Beetroots in the growing quarters during winter, but I, although living in a mild part of Ireland, cannot agree with that advice; experience has taught me to store carefully and in a frost-proof place.

Turnips are comparatively easily kept through the winter in either shed or pit with enough covering to exclude frost, while the July and August sown ones will grow on through the hardest of winters. Swedes may stand till December.

Parsnips are best preserved where they have been growing, and to make sure of easy lifting during the hardest of frost, a light ridge of leaf soil may be spread over the crowns to keep the soil soft.

Salsify and Scorzonera are both roots not generally grown and require little comment. Treatment similar to Parsnip will suit them, as all roots have a fuller and fresher flavour when stored as near to nature's way as possible; every grower should not attempt new-fangled ideas. Celery, if properly earthed, should be left in the trench, but given protection

in frosty weather. Dry bracken or straw will serve to ward off frost, and a weekly supply may be lifted during frosty weather and kept in a box of sand to save breaking the frosty crust daily.

Artichoke (Jerusalem) can be lifted and stored in sand or used from the open as found most convenient; the ripe stems must, of course, be cut down to within a foot of the ground.

The Leek, as every one knows, can take care of itself in the hardest weather and, although not classed among the roots proper, it is a health-giving, blood-enriching vegetable, which ought to be more widely grown. A. F. PEARSON.



GROUP OF EREMURI.
Roots may be planted now

Planting Bulbs.

DESPITE the still urgent need to devote as much space as possible to food crops, it is more than likely that some portion of our larger gardens may still be available for planting bulbs and other so called "roots," though on a much-restricted scale and strictly with a view of keeping stock. There are often situations which it would not pay to labour sufficiently to produce good crops of vegetables, but which with little preparation may be rendered suitable for growing of bulbs in view of better times ahead.

as *A. nemorosa* and its numerous varieties, *A. appennina* and *A. blanda*, the Wood Ginger, *A. ranunculoides*, may be planted now in woods and shrubberies where they will not interfere with production.

The stately and beautiful *Eremuri*, while requiring good treatment in the way of deep, well-drained soil, may be easily accommodated by preparing suitable stations among dwarf shrubs in a sunny position.

Muscari, too, or, as they are commonly called, Grape Hyacinths, are beautiful naturalised under trees and on grassy banks. The popular



CROCUS IMPERATI ALBIDUS.

Practically all the well known bulbous and tuberous plants are better got in as early as possible, and with some it is imperative that this should be done. Autumn and winter-flowering species of Crocuses should not be longer delayed, as some of the earlier kinds are due to flower soon, such as the beautiful *Crocus speciosus* and others which flower in autumn. *Colchicums*, too, so often erroneously called autumn Crocuses, should be got in at once. Among the most attractive of these are *Colchicum speciosum rubrum*, *C. giganteum*, *C. Bormuelleri*, *C. speciosum album*, *C. autumnale album plenum*, &c.

The lovely spring-flowering *Anemones*, such

variety called Heavenly Blue is probably the best for general purposes. It makes a delightful edging to a shrub bed, and can be used effectively in all sorts of places not suitable for more utilitarian things; so, too, the Winter Aconites, *Eranthis hyemalis* and *Eranthis cilicicus*, are beautiful, coming up in odd corners under shrubs very early in the new year. Snowdrops cannot be omitted, so welcome are they peeping forth in the still cold days of February and March; under trees and shrubs they often find a congenial home, or they may be planted among hardy Ferns, and will look charming among the brown fronds of the Ferns, which should be left on through the winter. If Spanish Squills—

Scilla hispanica—be planted with them there will be a display from March till May, the Squills flowering beautifully when the young fronds of the Ferns are pushing forth. There are other Squills, of course, which flower earlier—viz., *Scilla sibirica* and *S. bifolia*—which come in March and light up many a corner with their sparkling blue flowers. They are suitable for the rock-garden, but in gardens where they have been grown for years they are found coming up in all sorts of places. For small gardens they are extremely useful, as a few groups may be grown under the windows or other situation near the house, where they will gladden all with their pretty flowers in early spring.

Tulips are among the most beautiful of hardy bulbs, and make a brave show in many parts of the garden. Many of the wild species are suitably placed on the rock garden, and rival in beauty the garden-raised forms. Tulips generally are not suitable for naturalising in grass, though *T. sylvestris* may be induced to flourish under trees which do not throw too dense a shade. The Cottage and Darwin varieties of robust habit may, however, be grown in the open spaces in shrubberies by simply loosening the soil and adding a spadeful of sand. They are mostly tall growers, and look very attractive in April and May. It is unlikely that anyone will wish to fill beds with these or other bulbs at the present time, but those who have stocks on hand, or who desire to have flowers for sending to hospitals and Fêtes for our fighting men, should endeavour to find old corners where sufficient may be grown to keep alive the national love of flowers. Last on our list, but perhaps most important of all, we place the "Dancing Daffodil." Of all bulbous plants there is none so well adapted for growing in grass and for naturalising in all sorts of places. They do not care for a dry, hot soil, at least the larger growers, but there are few soils that will not grow Daffodils of some kind. Very many of them increase rapidly, and though some of the finer new varieties are too dear for extensive planting in these times, yet there are scores of beautiful varieties of the various sections procurable at very low rates as a rule. Those, therefore, who would have quantities of flowers for early cutting should consult a bulb merchant at the earliest opportunity with a view to acquiring early such bulbs as may be wanted, and which may be had at a reasonable price.

It will be necessary to write for catalogues, as they cannot be sent out unless asked for.

B.

August 1917.

G. N. KELLER.

Henbane.

HYOSCYAMUS NIGER, L.

THE information which is available at present regarding the characteristics, culture, &c., of medicinal herbs is often vague and inaccurate. For instance, *Hyoscyamus niger* has been endowed by recent writers with a degree of capriciousness amounting almost to self-will, and even learned botanists disagree as to whether it is primarily an annual or a biennial.

With reference to Henbane, the writer has made rather extensive inquiries, observations and experiments during this season and last, with results that are surprisingly consistent. An hypothesis based on these results may stimulate interested readers to help in solving this riddle.

Hyoscyamus niger, in the wild state, probably exists normally as a biennial in localities where conditions are sufficiently favourable to permit of the roots surviving the winter. The species is, however, very much inclined to produce "sports" which seed the first year. Through the agency of natural selection these sports may have enabled the species to persist as an annual under natural conditions which were fatal to the biennial. The foregoing is a probable explanation of the fact that the species has been found persisting as a biennial in the West of Ireland and as an annual along the eastern coast. (See illustration at page 134.) Competent observers have similarly reported that Henbane is an annual in parts of Suffolk and a biennial in Cornwall.

In the first year of growth the annual and biennial varieties display differences in appearance which are so wide as to be almost specific, but the biennial closely resembles the annual variety in the second year of growth. The two varieties might easily be confused by collectors of seed from wild plants, and this circumstance may have given rise to the prevalent idea that the plant may become either an annual or biennial on the slightest provocation.

The writer's experience is that the two varieties breed practically true in Ireland. In fact it is considered rather fortunate that two plants out of several thousand plants having the characteristics of true biennials have shown a tendency to produce seed in the first year. If this seed should ripen, it will afford material for further interesting experiments.

Notes.

Rhododendron Sphæranthum.

THIS interesting new Chinese Rhododendron was discovered by Mr. George Forrest in the mountains west of the Fengkon Valley. It belongs to the dwarf shrubby species already represented in our gardens by *R. intricatum*. The evergreen narrowly lanceolate leaves are $\frac{1}{2}$ to $\frac{3}{4}$ inch long and $\frac{1}{4}$ inch wide, glabrous above, scaly on the underside. It has a very small calyx and a white or rose corolla reflexed to half an inch in diameter.

Mr. Forrest's specimen, No. 12505, collected in June, 1914, at 12-13,000 feet elevation, suggests that *R. sphæranthum* is a very free flowering species which should prove a valuable addition to the rock garden and borders of Ericaceæ shrubs.

Prostranthera lasianthos.

THIS beautiful flowering shrub is a member of the Nat. Ord. Labiatae, and comes from Australia. That it is fairly hardy is proved by the fact that it came safely through the late severe winter and spring at Rostrevor House, Co. Down, where Sir John Ross of Bladensburg grows so many plants successfully, but, nevertheless, lost a number during the winter and spring. In July the fine specimen at Rostrevor was a mass of flowers, our illustration being of a number of sprays cut at that time.

Sir John Ross has kindly communicated the following particulars:—"Prostranthera lasianthos, as you know, is a very desirable flowering shrub, and not as well known as it deserves to be. It may not be hardy in every district in Ireland, but it has stood out untouched here for several years, and it was uninjured last cold winter and spring, so it ought to do in many parts in these islands. I got it about ten years ago, and at first put it against a wall, but finding it hardier than I expected I planted it out in the open under shelter of some large Laurels, which, as it grew, were gradually all cut away, so that now it stands clear as you saw it the other day, though in a sheltered position. It is evergreen, with sweet-smelling leaves; the flowers in panicles composed of many white blossoms, each a third of an inch or more across, with purple throat. It flowers in July, and is very floriferous, in fact it is a sheet of bloom. It now stands about 14 feet high, some 9 feet through, and the butt at the ground is some $5\frac{1}{2}$ inches in diameter."

Onion Mildew.

THIS pest has appeared to a considerable extent, during August, on spring-sown Onions. Fortunately, Onions sown fairly early—say in April—had attained a fair size before being attacked, consequently the damage will not be so great. The leaves are the part first attacked, and if badly affected they soon collapse, thereby putting an end to the swelling of the bulbs. In the June number of IRISH GARDENING a timely article appeared under the heading Garden Pests. In this mention was made of Onion Mildew with the object of warning inexperienced growers to be on their guard. It was recommended to dust affected plants with a mixture of 2 parts of Lime to 1 of Sulphur, and where this has been done no doubt the attack would be at least checked and the Onion bulbs enabled to continue swelling for some time longer. Growers will be well advised to avoid growing Onions near the same place next season. If on an Allotment the opposite end, or as far away as possible, should be chosen for the Onion bed. Trenching the ground is also an advantage, throwing the top spit of soil in the bottom of the open trench, so that any spores lying about are buried. If the ground is to be cropped at once, and the subsoil is not in condition to bring to the surface, at least shovel off 2 or 3 inches of the surface soil and bury as deeply as possible; apply lime freely to the soil and dig it in, as it helps to destroy the spores and mitigate attack the following season.

PRACTICE.

Caterpillars.

THERE seems to have been a plague of Caterpillars in many districts this season, and complaints are rife anent the destruction of Cabbages, Cauliflowers, &c. It is not easy to suggest a remedy when the plants are at the stage of being fit for cooking. Poisonous or otherwise objectionable applications which would soon get rid of the Caterpillars render the Cabbages unfit for food, and so "the cure is as bad as the disease."

A friend lately recommended the following plan as being in his experience effectual in saving the crop:—Take a handful of light flexible twigs and go over the plot and lightly switch over the Cabbages, thereby knocking off the Caterpillars without doing any damage to the plants. Then use the Scuffle freely between the rows, and by so doing most of the pests will be killed. Our friend avers that he has seen considerable areas treated in this way with the best results. It is well worth trying.



PROSTRANTHERA LASIANTHOS.
Photo by R. M. Pollock

Trees and Shrubs.

HYDRANGEA ARBORESCENS GRANDIFLORA.

THIS handsome shrub flowered very freely in August, and is certainly the most showy shrub in flower at that time. The huge inflorescences are composed entirely of sterile flowers—that is to say, the bracts are highly developed at the expense of the essential parts. A large specimen is an object of much beauty and interest. Unlike the common *Hydrangea*, this species should be pruned back in spring, whereas the common *Hydrangea hortensis* and its varieties should not have the growths cut back in spring, as the flowers are produced at the ends of the previous year's shoots.

H. paniculata and the variety *grandiflora* are also autumn flowerers, and will make a good succession to *H. arborescens*. These autumn-flowering species are very valuable and add much interest to the gardens.



Trollius asiaticus.

FLOWERING long after the most of the Globe Flowers are over this handsome plant make a fine show in July. At the time of writing—viz., the 11th of the month—it is full of rich yellow flowers carried on long stalks well above the foliage. In rich, fairly retentive soil it would make a handsome border plant, but in dry districts it is best in the bog garden, where it looks well in conjunction with the various forms of *Iris spuria*, *Astilbes* and *Spireas*. It is easily raised from seeds.

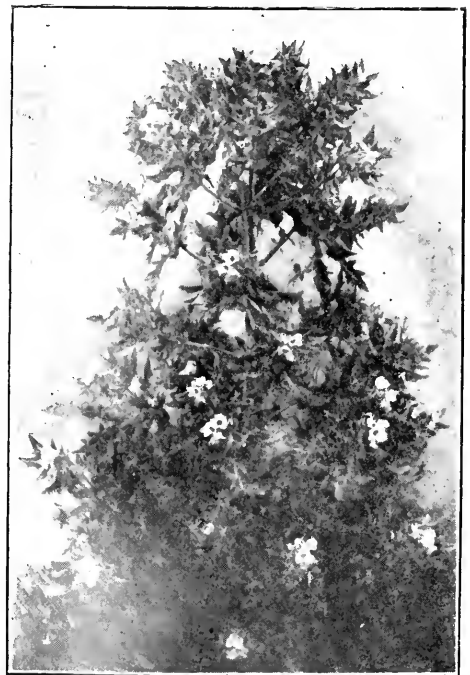
Pentstemon secundiflorus.

THIS little known species is well suited for the rock garden, where it flowers finely in July, and thus helps considerably to prolong the display in this section of the garden. The flowers are produced in a close one-sided spike and are pale rosy-lilac in colour, very pleasing when seen in a group; the leaves are smooth and shining. The plant is a biennial, or best treated as such, seeds being freely produced. Sown in August or earlier if procurable they will provide good plants for putting out next spring.

Convolvulus cantabrica.

A MOST attractive "Bindweed" with nothing of the weed about it, but not always surviving the winter in this district. It has lived for some years, however, in a sunny, dry position, and is delightful in August and September, when the trailing shoots are furnished with pretty rosy-pink flowers. The stems and leaves are furnished with hairs, which give the plant a greyish appearance. The leaves are quite narrow, almost linear, and it has not the leafy appearance of *C. mauritanicus*, to which it forms a good companion.

DUBLIN.



BIENNIAL HENBANE.
From a photo at the Herb Grounds, Adare Manor

Potatoes.

THE year 1917 may well be remembered as the "potato growing year." The most casual observers cannot fail to be impressed by the thriving plots all over the country. Amateurs and novices have become expert enthusiasts in the culture of the valuable tuber, and much old lore is being related daily as newly discovered matter. Although every-day growers may be inclined to treat this newly-found enthusiasm as a joke, I personally think it worthy of the fullest encouragement: indeed it is so refreshing that to suppress the ardour of these amateurs by cold criticism might be termed sinful.

A lady some months old in potato culture told me the other day she had discovered the secret of keeping disease away, and detailed the well-known spraying mixture: in addition she informed me that the flowering of the Potato had not been so profuse since some year in the middle of last century, and that year proved one of the greatest of potato crops. All this might amuse some, but it was of great interest to me, and I have just looked up some old records, so far the abnormal flowering year has not come under my notice, but I have noted very much that is interesting and a good deal that we have been led to believe the modern scientist has discovered. In 1857 one cultivator relates his work in combating the then virulent disease: his *modus operandi* was to dust the potato haulms with quicklime while the dew was on them. This was done at three stated intervals, much as we now spray with sulphate of copper and lime; the results were eminently satisfactory. The progress of the disease was particularly noticeable, as it is still, during wet muggy weather.

Leaving the disease behind we come to the question of boxing *versus* pitting potatoes for seed purposes, and many records are found clearly emphasising the benefits of boxing the seed at lifting time. The old men plainly knew what our young experts are teaching now with regard to sprouting.

Cultural details were then, I think, judging from these old gardeners' writings, quite as well, if not better, understood in the middle of last century than they are to-day, and one cannot read the old messages without feeling the utmost pride and respect for those past sages; indeed but for their teachings both practice and science would cut a sorry figure in the present emergency, and much of what we are now told is new would be still unknown, and we should still be groping in the clouds of doubtfulness.

One great evolution has, however, taken place in the potato—that is, the change in named varieties; most of the older generation will exclaim "to the detriment of flavour!" Let us

be charitable and attribute this flavour matter to the change of taste from the boy to the manhood stage, and still we hanker after the Dalmahoy's and Blue Regents our grandmothers used to set before us in their torn jackets with the flour literally bursting from every rent. To take a list given in *The Garden*, March 23, 1872, we have in earlier times: Myatt's Ashleaf, Royal Ashtop, Gloucester Kidney, Alma, Harry Kidney. I know only one of these by name—viz., Myatt's Ashleaf. Next is given for succession Web's Imperial, Sutton's King of Potatoes and King of Flukes; for



RHODODENDRON SPHERANTHUM GROWING IN CHINA.

Photo by Mr. Geo. Forrest.

long keeping, Yorkshire Hero, Rixton Pippin, Belgian Kidney, and Yorkshire Hybrid are recommended. Then follows a list of varieties to suit different purposes, in which figure Turner's Union, Hogg's Coldstream, Scotch Blue, Dalmahoy, Carter's Maincrop, Alexandra, Wellington, Victoria, &c., few of which I feel sure will be remembered by present-day gardeners.

The judging of tubers in those days appears to have been on the same lines as we still work, and fine regular specimens were favoured before large coarse ones; much of this may appear superfluous, but it proves that we are advancing every year, and still benefiting by the work of the early pioneers we may go on to unknown limits improving the cropping and disease-resisting properties, but let us not be unmindful of the question of flavour. Venturing an opinion

I should be inclined to award the old Champion the premier place in that category, but it has not the cropping powers of many of the newer sorts, and accordingly I presume it must sooner or later pay the penalty of being left behind in the race.

My intention in starting this note was to state a few short facts, but I have got out of bounds, and I recommend all growers of potatoes, whether novice or expert, to select their seed tubers for next year's work as they dig their crop. A more perfect seed cannot be bought than the one boxed now, and kept in a subdued light during winter. A frost-proof house is the place to store the boxes.

A. F. P.

Plants and the Winter.

IN our April number we published a letter from Sir Frederick Moore commenting on the injury done to many plants during the late severe winter and spring. Sir Frederick ventured to appeal to readers to "make a list of the injured plants in their district during the period April 25th to May 5th, so that the lists may be made under approximately similar conditions."

As it happened, the latter date proved rather early, as the full extent of the damage done was not determinable until later on in summer, and even now the actual results cannot be accurately stated, as some of the lists received show. Some plants which seemed on the verge of perishing subsequently made a remarkable recovery, and, as reports both from Ireland and Scotland show, have made more luxuriant growth than ever before, the severe "pruning" by frost seemingly having been beneficial. It may, however, require another winter to determine which of the badly injured plants will ultimately survive. Those plants which made a wonderful recovery, producing new vigorous soft growths, may not become sufficiently ripened to withstand even a normal winter; again, some shrubs not entirely killed remained dormant for nearly half the summer ere venturing to "break" again, and it remains to be seen whether these new shoots will live or perish.

During the interval since the publication of Sir Frederick Moore's letter a considerable number of lists have been received, many of them of some size. Clearly it was impossible to publish all the lists together, and indeed no useful purpose would be served in doing so, as in many cases the same plants occur through nearly all the lists.

In the meantime, we have chosen four representing the north, south, east and midlands. No list was received from a really western garden, but some indication of the conditions there was given by Mr. Murray Hornibrook in his notes on the gardens of Ballynahinch Castle, Co. Galway, in our August issue.

With reference to the four lists published this month, that from Sir John Ross of Bladensburg may be taken as typical of a mild locality in the north of Ireland. Favoured by a well-wooded hill giving great shelter, Sir John has formed at Rostrevor House a veritable gallery of rare and beautiful trees and shrubs, and has ventured out many plants usually grown in greenhouses, and some of them rare even there. The results will be seen in the lists he kindly sends.

Fota in the south may be regarded as corre-

sponding in some degree to Rostrevor in the north. Long famous as one of the finest collections in Ireland, it will be seen that the past winter took its toll, yet the damage does not seem irretrievable.

In the colder climate and heavier soil of County Meath, Lord Headfort has for some years been building up a fine arboretum at Headfort House. This list may be taken as a fair indication of the hardiness of many trees and shrubs in the colder inland counties.

The list compiled by Sir Frederick Moore from the national collection at Glasnevin indicates the results in what may be called intermediate climatic conditions. Normally Glasnevin is not so mild in winter as Fota or Rostrevor, but is warmer than Meath and some of the more inland counties, so that plants which have proved hardy at Glasnevin may be considered fairly safe for average conditions in most parts of Ireland. To be strictly correct, we ought, doubtless, to state the height above sea level, nature of the soil, exposure, &c., in each case, but, as it is, intending planters may now or in the future be able to gain an idea of "which plants can be depended on for permanent effect and which are to be avoided." In beginning a collection of trees and shrubs and other plants it will be possible, with the help of the lists, to lay the foundation with reliable plants, experimenting later with those doubtfully hardy, but which might flourish and give much pleasure for many years, let us hope, ere again we are subjected to such a disastrous winter and spring as that of 1916-17.

In addition to the lists published in the present number we have to acknowledge, with very many thanks, others from the following:—

E. H. Walpole, Esq., Mount Usher, Co. Wicklow; Murray Hornibrook, Esq., Knapton, Abbey-leix, Queen's Co.; A. V. Montgomery, Esq., Trim, Co. Meath; Mr. Patrick Schofield, gardener to W. B. Purefoy, Esq., Greenfields, Tipperary; Mr. S. E. Colvin, gardener to Mr. Pack Beresford, Fenagh House, Co. Carlow; H. Leslie Ellis, Esq., Magherymore, Wicklow; Robert Anderson, Esq., Supt., Phoenix Park, Dublin; Mr. Henry Hall, Shankill Castle Gardens, Co. Kilkenny; Miss F. E. Butler, Lavinstown House, Kilkenny; Mr. Garner, head gardener, Castletown, Carrick-on-Suir, per G. E. Villiers Stuart, Esq.; Messrs. Wm. Watson & Sons, Clontarf Nurseries, Dublin, and Walter Willoughby, Esq., Haddon, Dartmouth Row, Blackheath, S.E.

REPORT RECEIVED FROM THE MARQUIS OF HEADFORT, HEADFORT HOUSE, CO. MEATH.

Gardener—MR. W. E. TREVITHICK.

IN his report to Lord Headfort, Mr. Trevithick says:— "It is very difficult to convey a true idea of the damage done by the frost and cold winds succeeding it, for some of the same kinds of plants in different situations have not suffered alike. . . . In the plantation of *Cupressus lusitanica*, out of 45 plants, 5 are dead, 5 are injured, while the others do not show the slightest trace of injury. Again, 2 plants of *Genista madrense* by the Heath House are killed, while one plant on the south corner of the same island is uninjured. Many of the trees that show signs of distress now were to all appearance only slightly injured by the mid-winter frosts, but the frosts in late March and

1st April (11°)—when probably there was a movement of sap—did the greater injury, and now for the last 3 weeks we have had sunny days and N.E. wind, and the trees are showing how badly they have been injured.” (May 7th.)

PLANTS KILLED.

Acacia—
calamifolia. urnigera (two plants survived).
Dietrichiana. viminalis.
linifolia. of 60 plants, from 4 to 8 feet, planted out of pots in June 1916. only the two plants mentioned are alive.
Whanii.
Callistemon—
coccineus. Genista—
lanceolatus. elegans.
Callitris robusta. ferox.
Carmichaelia australis. monosperma.
Cassia— maderense.
corymbosa. Glyptostrobos heterophyllus.
tomentosa. Grevillea rosmarinifolia.
Casuarina glauca. Juniperus—
Cistus— Bermudiana.
albidus. scopulorum.
ereticus. Lagunaria Patersonii.
salvifolius. Lavendula dentata.
villosus. Leptospermum—
Clianthus puniceus. bullatum.
Cordyline australis. ericoides.
Coronilla— scoparium.
glauca. Libocedrus macrolepis.
valentina. Olearia argophylla.
Corynocarpus laevigatus. Pinus—
Cytisus— canariensis.
filipes. halepensis.
linifolius. osteosperma.
Cupressus— Pittosporum—
Bermudiana. tenuifolium.
thurifera (probably Funebri). undulatum.
Daerydium cupressinum. Plagianthus pulchellus.
Dodonaea tenuifolia. Polygala myrtifolia.
Eucalyptus— Raphiolepis ovata.
amygdalina. Rhamnus alaternus.
cordifolia. Rosmarinus officinalis.
coriacea. Senecio eleagnifolia.
gigantea. Stranvaesia glaucescens.
Mulleri. Vitis sempervirens.

PLANTS INJURED.

b = badly. *s* = slightly.

Abutilon vitifolium, *b*. Habrothamnus—
Anthyllis, Barba Javis, *b*. fascicularis, *b*.
Buddleia Colvillei, *b*. Newelli, *b*.
Ceanothus Indigofera floribunda, *b*.
divaricatus, *b*. Jasminum primulinum, *s*.
Veitcheanus, *b*. Juniperus—
Calceolaria violacea, *b*. excelsa, *s*.
Choisya ternata, *b*. littoralis, *s*.
Cupressus— procera, *s*.
Benthamii elegans, *s*. procumbens, *s*.
Formosensis, *s*. tamariscifolia, *b*.
Macnabiana, *s*. venusta, *s*.
Distylum racemosum, *s*. Keteleeria fortunei, *s*.
Edwardsia— Laurus camphora, *s*.
tetraptera, *b*. Lomatia ferruginea, *s*.
microphylla, *b*. Myrtus—
Escallonia— Luma, *b*.
maerantha, *b*. communis, *s*.
montevidensis, *b*. Olearia nitida, *b*.

Passiflora corulea, *b*. leucodermis, *s*.
Pentstemon cordifolius, *b*. pseudo-strobus, *s*.
Phormium—
Colensoi, *b*. Triacspidaria—
tenax, *b*. dependens, *s*.
Pinus— lanceolata, *s*.
densiflora, *b*. Tsuga Brunoniana, *s*.
patula, *b*. Viburnum Awafuki, *b*.
Sabiniana, *b*. Veronica Hulkeana, *b*. Also
Armandi, *s*. all the shrubby Veronicas,
Lambertiana, *s*. excepting Traversii.

REPORT FROM SIR JOHN ROSS OF BIADENS-BURG, K.C.B., K.C.V.O., ROSTREVOR HOUSE, CO. DOWN.

THE autumn of 1916 was unusually harsh and wet, and plants failed to ripen their wood properly; they were therefore ill-prepared to resist the cold that followed. Then came the winter, which in this district was severe and long, when the frost lasted, with only two breaks, from early in December until nearly the middle of April. There was a short break for a few days in the beginning of January and another for some two weeks—end of February and beginning of March. But during the rest of the time the thermometer stood generally from 28° to 31°; occasionally the mercury dropped to 21° or 22° for one night only, and the lowest reading was 19° one night in Easter week. There were also periods of cold icy winds, and in February they continued without any change for nearly ten days, thermometer at 28° or 29°. End of March the first fall of snow took place, and another in April with a blizzard, temperature 31°.

Of the half-hardy plants many, of course, have been destroyed; but there are others which resisted the cold very well and are uninjured. The following list, showing the killed, injured, and uninjured, in the gardens of Rostrevor House, may be of interest. Only those species are included among the *killed* which had already successfully stood out a winter; many of them had been out for several years, and some had grown well and were quite large plants. Among the *injured*, *s* is put after the name of a plant when only slightly damaged, and *b* when badly hurt.

KILLED.

Acacia—
calamifolia. Cordyline hyb. "van Groot"
cyclops. (doucetti × indivisa).
eburnea. Correa—
longifolia. alba.
pulehella. magnifica.
pyenantha. Corynocarpus laevigata.
Araujia sericefera. Cryptocarya australis.
Arundinaria spathiflora. Cytisus—
Astroloma pinifolia. filipes.
Banksia— linifolius.
marginata. Dendromecon rigidum.
spinulosa. Diosma ericoides.
Berberis arguta. Dodonaea viscosa.
Brachylena dentata. Eucalyptus—
Callandrinia umbellata. alpina.
Callitris australis. delegatensis.
Casuarina— Genista ephedroides.
cunninghamiana. Gnida carinata.
distyla. Grevillea—
glauca. alpina.
lepidophloia. hilliana.
suberosa. Hakea (unnamed from
Cranbrook, Australia).
Cinnamomum officinale. Hymenoporum flavum.
Cistus vaginatus. Isopogon latifolia

KILLED—*continued*.

Juniperus procera.	Pinus longifolia.
Ligustrum massalongianum.	Rhabdothermus solandri
Malvastrum capense	Rhododendron—
Melaleuca—	cilicalyx.
hypericifolia.	oxyphyllum.
beissiana.	Rhus integrifolia.
nesophila.	Senecio perdicoides.
one other, unnamed.	Sollya heterophylla.
Myoporum laetum.	Sphaecle campanulata.
Nierembergia frutescens.	Sphaeralea munroana.
Olearia—	Stillingia sebifera.
angustifolia.	Zanthoxylum acantha-
Chathamica.	podicus.
ramulosa.	

INJURED.

Glyptostrobos heterophyl-	Eupatorium—
lus, s.	deltoideum, b.
Juniperus bermudiana, s.	Purpusii, b.
Podocarpus elongata, s.	weinmannianum, s.
Taxodium mucronatum, s.	Euphorbia—
Tetraclinis articulata.	biglandulosa.
Acacia—	mellifera, s.
alata, b.	Genista elegans.
armata, s.	Grevillea robusta, b.
baileyana, b.	Greyia Sutherlandii, b.
neriifolia, b.	Hakea—
verticillata, b (some killed).	florida, b.
Acer Hookeri.	pugioniformis, s.
Arbutus furiens.	Haloragis alata.
Aristolochia altissima, s.	Hoheria populnea, s.
Astelia Banksii.	Ilex fragilis, s.
Banksia integrifolia, b (some	Laurus canariensis, s.
killed).	Lavatera maritima bicolor, b
littoralis, b.	(a large plant killed).
Bowkeria triphylla (one	Leptosepernum Bosea-
killed).	wenii, s.
Brachyglottis repanda, b.	Leucopogon Richei.
Bursaria spinosa, s.	Melaleuca armillaris, b
Calceolaria—	Melia Azederach, b.
Sinclairii.	Mesembryanthemum inton-
violacea.	sum, b.
Calystegia macrostegia.	Metrosideros—
Cantua dependens, b.	diffusa.
Cassinia leptophylla, s.	hypericifolia.
Casuarina equisetifolia, b.	Mimulus glutinosus.
Carmichaelia flagelliformis, s.	Mitraria cocinea, s.
Cestrum—	Moræa Macleayi, b.
elegans, b.	Mutisia—
fasciculatum.	Clematis, b.
Newellii, s.	decurrens, s.
Parqui.	Myoporum acuminatum.
Chilianthus oleaceus, b.	Myrica cerifera, b.
Citharexylon reticulatum, s	Myrsine—
Clethra arborea, b.	salicina, b.
Clianthus puniceus, b (some	semiserrata.
killed).	Urvillei.
Coprosma serrulata.	Myrtus—
Crossosoma californica, b.	bullata, s.
Cytisus proliferus.	communis var. bætica, s.
Dais cotinifolia, b.	obcordata, s.
Diplorrhena Moræa, b.	Nesæa salicifolia.
Erica cerinthoides, b.	Nothofagus cliffortioides, s.
Escallonia montevidensis.	Nothopanax arborea.
Eucalyptus—	Olearia argophylla, b, hyb
acervula, s.	(self-sown, argophylla ×
leucoxydon, b.	maerodonta ?), s.
obliqua, s (one killed).	Peumus Boldus, b.
resinifera, b.	

Pistacia—	Salvia—
atlantica, b.	aurea, b.
Lentiscus, s.	Grahamii.
Pittosporum coriaceum, s.	Sedum prealtum, s.
Plumbago capensis.	Semele androgynæ.
Polypodium Billardieri.	Smodingium argutum.
Pomaderris apetala, b.	Stenocarpus salignum, s.
Potentilla vimoriniana, s.	Styphelia fasciculata, s.
Prostanthera violacea, s.	Sutherlandia frutescens, s.
Proustia pyrifolia, b.	(some killed).
Prunus caroliniana.	Swainsonia coronillifolia,
Pseudopanax Lessonii, b.	var. alba.
Pteris serrulata, b.	Veronica, hyb. (large leaf
Quercus—	rod flower).
agrifolia, s.	Viburnum odoratissimum, s.
Suber.	Visnea moeanera, s.
Restio subverticillata.	Vitis striata.
Rhus lancea, b.	Westringia rosmarini-
Romneya—	formis, b.
Coulterii.	Zizyphus Gizardi, s.
trichocarpa, b.	

UNINJURED.

Callitris—	Bursaria Pantoni.
oblonga.	Calceolaria—
robusta.	alba (one slightly injured).
verrucosa (one killed).	integrifolia (several killed).
Cineraria—	Callistemon—
Heritieri (some killed).	coccineus.
Cunninghamia lanceolata.	lanceolatus.
Cupressus cashmiriana (one	rigidus.
slightly injured).	rugulosus.
Daerydium—	salignus.
Colensoi.	sanguineus.
Franklinii.	Sieberi.
cupressinum.	Calycotome—
Juniperus cedrus.	infesta.
Keteleeria Davidii.	spinosa.
Libocedrus—	Carmichaelia—
chilensis.	australis.
donana.	Enysii.
maerolepis.	odorata.
Phyllocladus trichomanoides	Carpodetus serratus.
Pinus—	Cassinia retorta.
canariensis.	Cinnamomum Camphora.
patula.	Citharexylon bessonianum.
Podocarpus Nageia.	Clematis—
Tsuga Brunonian.	indivisa.
Acacia—	lobata.
dealbata.	Colquhounia vestita.
decurrens.	Coprosma—
melanoxydon.	Cunninghamii.
Adenocarpus frankenioides	lucida.
(one killed).	Petriei.
Agave—	propinqua.
Franzosi.	Cordyline —
Salmaniana (one died).	australis.
Anopterus glandulosus.	Banksii.
Anthyllis Barba Jovis (some	indivisa.
killed or injured).	Corokia—
Arbutus—	Cotoncaster.
canariensis.	macrocarpa.
espinosa.	virgata, s.
Berberis Fremonti.	Cotyledon—
Billardiera—	agavoides.
fruticosa.	farinosa.
longiflora.	roseata.

Cyathodes robusta.
Cytisus racemosus.
Dammacanthus indicus.
Dendropanax japonica.

Dianella—
cerulea.
tasmanica.

Dieksonia antarctica.
Dienanthe bifida.
Drimys colorata.
Dryandra formosa.
Embothrium coccineum.
Ephedra altissima.

Eucalyptus—
amygdalina.
cinerea.
coccifera.
cordata.
globulus.
hæmastoma (some injured)
MacArthurii.
Maidenii (one killed).
Muellerii.
paniciflora.
stellulata.
urnigera.
vernica.

Eucryphia Billardierii.
Eugenia myrtifolia.
Feijoa sellowiana.
Fremontia californica.
Genista ferox (two larger
plants killed).
Gordonia anomala.
Guevina avellana.

Hakea—
glabella.
rugosa.
ulicina.

Hibbertia Readii.
Hymenandra dentata var.
angustifolia. Novæ-
Zelandiæ.

Ilex—
insignis.
platyphlla.
Jacobinia floribunda.
Juglans boliviensis.
Lapageria rosea.
Lagerstrœmia indica.
Laurelia serrata.
Leitneria floridana.

Leptospermum—
australis.
Chapmanni.
ericoides.
lævigatum.
Nairni.
Nicholi.
pubescens.
scoparium.
stellatum.
Ligustrum Walkeri.
Litsœa japonica.

Lomatia—
ferruginea.
longifolia.
tinctoria.
Maytenus ilicifolia.

Melicoytus ramiflorus.
Metrosideros lucida.
Musa basjoo.
Mutisia ilicifolia.
Myrsine africana.
Nertera depressa.

Nothofagus—
antartica.
betuloides.
Cunninghamii.
fusca.
Menziesii.
obliqua.
procera.
Notospartium Carmichaeliæ.

Olea—
arborea.
europea.

Olearia—
insignis.
semidentata.

Panax—
arborea.
Colensoi.
Parsonia albiflora.
Pentstemon cordifolius.
Philesia buxifolia.
Pimelea longiflora.

Pitcairnia—
cerulea.
spathacea.
Pittosporum patulum.
Prostanthera lasianthos.

Pseudopanax—
crassifolium.
ferox.
Punica Granatum.
Puya chilensis.

Quercus—
alnifolia.
chrysolepis densiflora.
incana.

Rhododendron—
Dalhusiæ.
Edgewardii.
lanatum.

Rhodostachys pitcairniæ-
folia.

Sarracenia purpurea.
Senecio

Hectori.
rotundifolius (one slightly
injured).

Tapiscia sinensis.
Teucrium fruticans (some
badly injured).

Teucrium brevifolium (one
killed).

Tricuspidaria dependens (one
slightly injured).

Umbellularia californica.
Veronica diosmafolia, self-
sown seedlings (the larger
plants injured).

Whipplea modesta.
Weinmannia racemosa.
Xylosma racemosum ; var.
pubescens.
Yucca baccata.

RÉPORT RECEIVED FROM FOTA, THE RESIDENCE
OF LORD BARRYMORE, CO. CORK.

Gardener—MR. ERNEST BECKETT.

* Signifies growing on a wall.

KILLED.

Aristolelia racemosa. Pinus—
Brachysema lanceolata. Teocote.
Broussonetia papyrifera. Lumboltzii.
*Cassia corymbosa. pseudo-strobus.
Celtis faber. Phoenix canariensis.
*Ceanothus azureus. *Poinciana Gilliesii.
Diosma ericoides. Pittosporum crassifolia.
Erythrina Crista-Gallii. Senecio compactus.
*Lavatera assurgentiflora. *Sollya heterophylla.
*Lavatera maritima bicolor. Taxodium mexicanum.

INJURED.

Abelia rupestris, slightly. Escallonia—
*Abutilon vexillarium varie- Montevidensis, slightly.
gatum, hit rather hard, pterocladon, slightly.
but breaking. Eucalyptus globulus,
Acacia melanoxylon, badly breaking.
browned. Eupatorium riparium,
*Aloysia citrodora, killed to slightly.
ground level. Euphorbia mellifera, hit
Arundinaria Faleonerii, rather hard.
badly browned. Fejoia Sellowiana, slightly.
Arundo donax, disfigured, Ficus repens, growing on
but breaking freely. outside wall of cool
*Asparagus retrofractus, house and frames ;
killed to ground. slightly injured.
Buddleia— Garrya—
Colvillei, bush in open elliptica, quite disfigured
badly cut. where sun's rays
salicifolia, varying ac- caught.
cording to position. Thuretii.
Calceolaria— Grevillea rosmarinifolia,
*violacea, suffered. badly in places.
integrifolia, killed to Habrothamnus—
ground level. *elegans, breaking behind
*Carpentaria Californica, freely.
slightly. *Newellii, breaking behind
Cassinia fulvida, slightly. freely.
Cassia corymbosa, breaking Hakea saligna, badly in
from ground. places.
*Ceanothus Gloire de Ver- Indigofera Gerardiana,
sailles, slightly. slightly.
*Ceanthus puniceus, badly Itea virginica, breaking from
in places. base ; very small plant.
Coprosma repens, slightly. *Jasminum primulinum,
Cordylina— proved fairly hardy.
Banksii, slightly. Juniperus—
indivisa vera, slightly. Bermudiana, slightly.
Coroeka buddleioides, hit procera, very slight.
rather hard. Laurus—
Cotoneaster augustifolia, Camphora, proved fairly
hit rather hard. hardy.
Cupressus— nobilis, browned in
Kashmiriana, slightly. places.
macrocarpa, slightly dam- nobilis var. salicifolia,
aged in exposed site. badly browned.
*Cytisus fragrans, hit hard. Leptospermum lanigerum.
but breaking freely. certain branches
Daphniphyllum glauceseens badly.
slightly. Ligustrum coriaceum.
Dieksonia Antarctica, last Mandevillea suaveoleus,
season's fronds injured, breaking freely.
but breaking as usual. Metrosideros florida, rather
Erica Mediterranea, slightly, bad.

INJURED—*continued.*

Mitraria coccinea, very slight.	Rhaphithamnus cyanocarpus.
Myrsine Urvillei.	Rubus australis.
Ozothamnus rosmaifolius, slightly.	Ruscus Androgynus, killed to the ground.
*Passiflora cœrulea.	Salvia Grahami.
*Constance Elliot.	*Smilax aspera mauretanica, slightly.
Phoenix Senegalensis, badly.	*Solanum jasminoides, killed to the ground.
Phormiums, slightly.	Sophora—microphylla, vicifolia.
Photinia serrulata, slightly.	Veronica—Andersonii, and varieties.
Phygadeuon Capensis, badly disfigured.	salicifolia, according to position.
Pinus canariensis, several growths disfigured.	
Restio subverticillatus, slightly.	

UNINJURED.

Abutilifolium vitifolium album.	coriacea, viminialis.
Acacia dealbata.	Eucommia ulmoides.
Aciphylla Colensoi.	Eucyphia pinnatifolia.
Azara—microphylla, integrifolia, serrata.	Eugenia—apiculata, Ugni.
Baccharis patagonica.	Fagus—Cunninghamii, obliqua.
Benthania fragifera.	Fabiana imbricata.
Berberis, in variety.	Fitzroya patagonica.
Buddleia—variabilis, globosa.	*Fremontia—Californica, newly planted.
Cesalpinia japonica.	Veronica Hulkeana, newly planted.
*Chimonanthus fragrans.	Fuchsia Riccartonii.
Carmichaelia australis.	Grevillea—sulphurea, rosmarinifolia, one bush uninjured.
Camellias, in variety.	*Gordonia anomala.
Castanopsis chrysophylla.	Gunnera manicata, unprotected, by water.
Ceroarpus betulafolius.	Gymnocladus canadensis.
Choisya tenuata.	Hakka pugioniformis.
*Citrus Citrange, trifoliata.	Hoherca populnea lanceolata.
Clerodendron—trichotomum, fetidum. Breaking as usual.	Hymenanthera crassifolia.
Colletia—cruciata, horrida.	Lagerstromia indica.
Cordylina australis.	*Lapageria.
Crinodendron—dependens.	Leptospermum—Chapmanii, Nicholii, grandiflorum.
Hookerianum.	Lomatia ferruginca.
Dacrydium Franklinii.	Musa Basjoo, stems protected and growth as usual.
Datura sanguinea, breaking from the base as usual.	Nandina domestica.
Davidia involucreta.	Notospartium Carmichaeliae
Decaisnea Fargesii.	Olearia—Forsterii, macrodonta, furfuracea, nummulariaefolia, stellulata, virgata.
Desfontainea spinosa.	
*Diospyros Kaki.	
Drimys—aromatica, Winterii.	
Embothrium coccineum.	
Eukianthus campanulatus.	
Eriobotrya japonica.	
Eucalyptus—coccifera.	

Osmanthus Delavayii.	*jasminoides.
Pinus Greggii.	* „ variegatum.
Pittosporum, in variety.	Ribes laurifolium.
Plagianthus Lyallii.	Ruscus.
Podocarpus—afinis, Chilianus, daerydioides.	*Schizophragma hydrangeoides.
Totara.	Sterculia platanæfolia.
Prumnopitys elegans.	Taxodium imbricatum.
Rhodotypos Kerrioides.	Ternierium fructicans.
*Rhynchospermum—	Torreya Californica.
	Veronica Traversii.
	Viburnums, in variety.

REPORT COMPILED AT THE BOTANIC GARDENS, GLASNEVIN, FROM PLANTS GROWING IN THE OPEN.

KILLED.

Adenocarpus foliolosus.	Juniperus—Bermudiana, proœra.
Arbutus diversifolia.	Lavatera albia.
Buddleia auriculata.	Leptospermum—scoparium, Nicholi.
Convolvulus œneorum.	Libocedrus Chilensis, young, moved.
Cestrum Parqui.	Myrsine—urvillei, semiserrata, africana.
Calceolaria integrifolia.	Mallotus japonicus.
Calycotome spinosa.	Olearia—Solandri, rotundifolia.
Correa—magnifica, speciosa.	Pittosporum—Mayii, eugenoides, Fairchildi, coriaceum.
Ceanothus—arborescens, spinosus.	Phlomis fruticosa.
Coprosma lucida.	Photinia—serrulata, var. rotundifolia.
Cupressus Kashmiriana.	Benthamiana.
Clematis cirrhosa.	Pinus—Ayacahuite, Mitis.
Cydonia sinensis.	Rubus bambusarum.
Carmichaelia odorata.	Sphacela campanulata.
Cordylina—lentiginosa, australis.	Senecio perdicoides.
Doryenium hirsutum.	Salvia Grahami.
Dichroa febrifuga.	Veronica Veitchii.
Eucalyptus—rubida, paniculata, Smithii.	
Fabiana imbricata, killed in shade, safe in sun.	
Fuchsia fulgens.	
Fagus proœra.	
Hypericum—fragile, olympicum.	
Hookerianum, balearicum.	

KILLED TO THE GROUND.

Andrachne racemosa.	Smithii, stuartiana, punctatis.
Abies religiosa.	Eupatorium Weinmannianum.
Buddleia—officinalis, Forresti.	Euphorbia mellifera.
Clematis brachiata.	Evodia Bodineri.
Cordylina australis.	Enonymus Hamiltonianus.
Dabœcia polifolia.	Escallonia—revoluta, montevidense, illinita.
Deutzia staminea.	Eugenia Ugni.
Eucalyptus—citriodora, resinifera, viminalis.	

Fuchsia riccartoni
Hypericum—
chinense.
Kalmianum.
Ilex intricata.
Juniperus.
Lycium afrum.
Leucopogon Richei.
Myrtus—
variegata.
Ugni.
Marlea begoniæfolia.
Magnolia macrophylla.
Olearia—
Traversii.
Fosteri.
macrocephala
Pentstemon cordifolius.

BADLY INJURED.

Abelia floribunda.
Azara—
serrata.
dentata.
microphylla.
Atriplex halimus.
Aristolelia Macqui.
Arbutus—
canariensis.
Unedo.
Berberis levis.
Baccharis patagonica.
Choisya ternata.
Citheroxyton Bessoniana.
Ceanothus—
thyrsiflorus var. griseus.
Veitchii.
Celtis labilis.
Coroëka cotoneaster.
Cupressus—
MacNabiana.
funebris.
torulosa.
Benthamiana.
lusitanica.
Cornus capitata.
Clematis splendens.
Cotoneaster angustifolius.
Cordylina australis (some killed).
Coriaria—
myrtifolia.
ruscifolia.
Desmodium tiliaefolia.
Deutzia—
corymbosa.
setchuenensis.
Eucalyptus MacArthurii.
Eueryphia cordifolia.
Embothrium coccineum.
Erica—
mediterranea (tall forms).
Veitchii.
Scoparia.
arboëra.
Escallonia—
rubra.
organensis.
pulverulenta
viscosa.
all others slightly.

Phormium atropurpureum.
Plagianthus pulchellus.
Prunus pumila.
Philadelphus—
rosceus.
uniflorus.
Coulteri.
Rubus ichangensis.
Sedum præatum.
Senecio—
Hectori.
Munroi.
Veronica—
Dieffenbachii.
Balfouriana.
Weinmannia sylvicola.
Xylosma racemosa.

Eucalyptus—
viminalis.
Gunnii.
Fagus Cunninghamii.
Fuchsia Riccartoni.
Fig (old plant.)
Garrya elliptica.
Helianthemum ocymoides (in places.)
Hypericum—
uralum.
Henryi.
Iberis sempervirens.
Ligustrum Henryi.
Myrica californica.
Myrtus Luma.
Myrtle.
Mitraria coccinea.
Olearia—
insignis.
nitida.
myrsinoides.
macrodonata.
Pittosporum—
Mayii.
undulatum.
Phormium Colensoi.
Podocarpus—
Hallii.
Totara.
Photinia Davidsoniana.
(All Photinias bad).
Prunus Mira.
Pinus—
Brutia.
patula.
Rhodo sublancoletatum.
Rubus—
flagelliformis.
Parkeri.
australis.
Senecio—
laxiflorus.
Grayi.
Tsuga Brunoniana.
Torreya tenuifolia.
Tricuspidaria lanceolata
Veronica—
Canterburyensis.
Hulkeana.
parviflora.
Autumn Glory.
epacridea.

SLIGHTLY INJURED.

Abutilon vitifolium.
Anthyllis Hermannæ.
Asimina triloba.
Ailanthus—
Vilmoriniana.
Giraldii.
Arbutus—
Rollisonii.
Unedo magnifica.
Acer—
sinensis concolor.
catalpifolia.
longipes
Berberis Sargentiana.
Cordylina indivisa.
Carpentaria californica.
Ceanothus Russellianus.
Callicarpa japonica.
Cneorum tricocum.
Carmichaelia australis.
Colletia horrida.
Chinese Oaks, generally
tender, such as Q. glandulifera, spathulata, &c.
Discaria serratifolia.
Drimys Winteri.
Deutzia scabra.
Eriolobus Delavayi.
Erica mediterranea,
compact forms.
Encalyptus—
coceifera.
Whittinghamensis.
urnigera.
Erica lusitanica.
Fagus cliffortii; des.
Gleditschia caspica.
Genista pilosa (old plant).
Leycesteria formosa.
Lagerstrœmia indica.
Mahonia fascicularis.
Magnolia grandiflora.
Olearia—
avicenniæfolia.
ilicifolia.
Osmanthus Fortunei.
Plagianthus Lyallii
Phormium Hookeri
Punica granata.
Pittosporum nigrescens.
Perowskia atriplicifolia.
Pinus—
cembroides
Montezumæ.
Raphiolepis japonica.
Quercus Suber.
Stranvsæjia undulata.
Tricuspidaria lanceolata.
Viburnum macrocephalum.

Allotments as a Permanent Institution.

THE importance of the question of allotments is a matter which ought to receive the earnest attention of all municipal authorities. That allotments will be desired by working men after the war there can be no doubt about whatever. The ideal allotment or garden plot is the one which is at the back of one's house, and, while at first it might be considered a bad speculation if housing authorities were to insist that at least one-sixteenth of an acre of ground should be laid out adjoining each house, in the long run, when happiness, health, morality, temperance, child welfare, &c., are considered, the value of gardens, allotments and open spaces would prove of greater financial value to the towns, counties and countries than the crowded brick and mortar boxes found in most towns and cities at present.

I tried to point out at the Civic Exhibition Congress in Dublin during August, 1914, that those men who had learned of the value of allotments were the men who would be the first to demand that gardens should form an adjunct of their house and living rooms, signs are not wanting, more especially in England, that those who have realised the benefit to be obtained by cultivating an allotment and by being in the fresh air after working in stuffy factories, &c., have developed a divine discontent with the sordid nature of their surroundings, which they have tried to improve by means of window boxes, &c., and have begun to ask for scientific town planning, which will take into consideration the real needs of the human family. That allotments in Ireland are considered to be necessary after the war as well as during the war is foreshadowed by the recent Irish Allotment Act, an Act which has not come before its due time.

W. H. J.

Allotments.

Work on the allotment this month will consist mainly in harvesting the crops, in generally cleaning out accumulating rubbish—yellowing Cabbage and Sprout leaves and other foliage—along with weeds, &c.

Potatoes which have only been sprayed once or not at all will probably be showing signs of blight, which has developed rather alarmingly on some of the Dublin allotments. All mid-season varieties, such as British Queen and Windsor Castle, &c., should be dug as soon as possible, as, apart from the danger of blight (with the ground as moist as it is at present), these have a tendency to commence growing anew, forming baby Potatoes and useless shoots, with a resulting loss of food material. Where there is a large quantity of such varieties the tubers should be partially dried, by exposure to wind and sun, for a few hours only, and then stored in boxes or bags in a dark, airy shed. If the late kinds are not badly blighted they should be again sprayed, but if the foliage has died down they should be lifted immediately and stored, as recommended above, or in a clamp made by marking off a space about three feet wide on a high part of the ground and placing the Potatoes on it to form a ridge about three feet high and sloping upwards like the roof of a house: a trench should be then dug around the heap at about 12 inches from it, taking out sufficient soil (which should be comparatively dry and free from manure) to form a layer about eight inches deep all over the heap. This can be thatched with straw if a severe winter is anticipated. It will be advisable to examine the heap occasionally, more especially when disease has been present, to see that the tubers are in good condition. In gathering the tubers for storing purposes all bruised, damaged or diseased specimens should be placed aside, and where "seed" is required tubers about the size of eggs—weight from 2–2½ ozs.—should be reserved for sprouting later on.

Proceed to harvest the spring sown Onions as recommended last month, also dig out carefully Beetroot and Carrots which have reached maturity; twist off the tops of the former, leaving about two inches of the stems above the roots, and cut the foliage of the latter quite close to the root; store in layers in slightly moist sand in an airy shed.

Seeds of Cabbages, Cauliflowers, Winter Spinach, Lettuce and Scallions or Onions for early summer use can still be sown, also Brussels Sprouts, Red Dutch and Savoy Cabbage, these latter will provide large and early specimens for next autumn (1918) if such are wanted.

Celery and Leeks should be again earthed-up as directed previously, at least six inches of the stem being covered at this season; also hoe the ground around Cabbages, &c., and draw a little of the soil against the stems of the plants. Plant out early in the month in rows two feet apart, with the individual plants at 12 inches (alternate plants to be cut out very early in spring), on well manured and limed ground, a quantity of Cabbages from the early or first sowing, and late in the month a second batch should be planted.

FLOWERS.—Transplant as soon as possible flowering plants sown in the early summer. If early Sweet Peas are desired for next season, make a small sowing of suitable varieties about the second week in September. Prepare a trench

by digging out to the depth of two feet or more, and placing at the bottom Potato tops and other vegetable refuse, then adding a little soil and straw horse manure, towards the top place a little rotted manure, and mix in with the surface soil any wood ashes and lime rubble which may be available (from 4–8 ozs. per square yard), also a dressing of basic slag, about 4 ozs. to the square yard. The seeds should be sown a little thicker than usually recommended for the spring sowing, on account of the greater danger of damage by means of pests, weather conditions, &c., and at a depth of 1–2 inches. Bulbs for indoor cultivation, such as Daffodils, Tulips and Hyacinths, should be potted towards the end of the month or the beginning of October.

W. H. J.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill,
Shane's Castle, Antrim.

KITCHEN GARDEN.

POTATOES.—Mid-season varieties should be lifted, and the tubers stored as soon as possible. Unless there is a good potato house, the tubers are better stored in pits in the open; see that they are perfectly dry before the final covering of soil is placed over them; a layer on top, of fine mesh net wire will prevent rats making their way into the pit, for it is not alone what they eat, but the injury generally starts a rot inside, which affects the whole pit. If it is necessary to save seed tubers, they are better exposed to the sun for a few days, then placed in a dry shed where they will get plenty of air.

If the haulm of late varieties is still green the tubers are better left in the ground until thoroughly ripe. Potatoes, on the whole, in the North are looking remarkably well, and the early varieties are digging well.

LETTUCE.—Plants raised from seeds sown in August are ready for transplanting on an early border, where protection may be afforded them through the winter.

The same remarks apply to Endive.

SPRING CABBAGES.—A very important crop in the early spring, and the earlier they are the more their value—the seeds sown in July should be planted this month on an early border; if possible, if the border is dry, plant them on the level, if wet soil, plant on raised drills, as damp is what kills them through the winter.

CAULIFLOWERS.—Prick out seedlings to stand the winter in frames, and avoid coddling them too much; give them plenty of air.

ONIONS.—Let the bulbs that have reached maturity be pulled and laid out on the ground or walk where they will get plenty of sun, afterwards finish and clean off in an open shed where they can be hanked or laid out on shelves; or an old hay loft is an ideal place to store onions.

CELERY.—Early in the month earth up main crop. The rain we have had lately has greatly improved the main crop, and it looks well. Before earthing up remove all side shoots and decayed leaves, dust plenty of soot and lime round them;

choose, if possible, a fine day, when the soil is fairly dry.

TURNIPS AND SPINACH, &c., sown last month will require to be kept clean and scuffled regular; thin Turnips six inches apart.

Another sowing of Spinach may still be made early this month if ground was not available before.

PARSLEY.—A small planting should be made in a frame for winter and spring use, or, where it can be afforded, the protection of a light.

LEEKS.—The blanching of these should be continued as long as growth proceeds. Clear the ground of all spent crops and weeds, draw up soil round stems of late Broccoli, Sprouts and Curly Kale. It will prevent them blowing about and getting a puddle hole round the base of the stem, which is very injurious to the welfare of the plant.

FRUIT GARDEN.

The fruit room, if not already cleaned, should have a thorough clean out, walls whitewashed, and shelves scrubbed with warm water and black soap; afterwards rinse with clean water, and dry well.

Some of the early Apples and Pears will require short storage about the end of the month, such as Lady Dudley, Early Victoria, Lord Suffield, Lord Grosvenor, Grenadier, Ecklinville Seedling, &c. Such varieties as these are better, if possible, to be used at once or sold, as they soon lose their sap and flavour. When picking Apples they should be handled like eggs, they are so easily bruised.

STRAWBERRIES.—Continue to make new plantations. Plantations made last month should be kept hoed. A dusting of soot over them will help them along.

RASPBERRIES.—All the fruiting canes of this year should be cut away, and any surplus growth not required for next year removed. This will enable the fruiting canes for next year to ripen and finish better.

SUMMER PRUNING.—If this work is not yet completed it should be finished off without delay.

PEACHES swelling will require plenty of stimulant to help them to finish off. Expose the fruits to the sun as much as possible; pinch off late lateral shoots at the first or second leaf.

Taken all round, the fruit crop for 1917 has been very good. The Apples are swelling fast and are very clean.

Pears are a big crop; but that is the general result of a very poor crop the previous year. It is very gratifying to see such a good report from all over Ireland in last month's IRISH GARDENING. I do not think we in Ireland have much cause to grumble.

FLOWER GARDEN.

September in Ireland is sometimes one of the best months of the year as regards weather. Most of the hurry and bustle is over, and one gets time to think and learn, either from his failures or his successes—that bed might be improved by such and such, or that bed is just “it.” The war-time beds of Carrots and Beetroots have been a great success, the Carrots especially have done extra well on the raised flower beds.

Continue the propagating of Calceolarias, Pentstemons, and Violas; select cuttings from young

sappy growths. Keep the frame shaded and fairly close till rooting takes place; then ventilate freely during the winter, on fine days.

VIOLETS.—Keep the beds clean and the runners cut off; water them when necessary with manure water. If violets in frames are contemplated, this is the best month to plant therein; make up the frame with cow manure and good loamy soil; lift the plants with a good ball of soil, and plant six inches apart each way; give them a good watering, and shade for a few days, then give as much air as possible by taking lights off altogether on fine days; never close down tight except in very severe weather.

If annuals are required to flower early next season sow seeds now.

Carnations layered during the end of July will now be rooted, and may either be boxed and put into cold frame or planted into their permanent quarters, so that they may be established before severe weather sets in. Herbaceous borders are now past their best; remove all dead blooms and maintain as tidy an appearance as possible. Many varieties of Asters are still good, and for cut flowers nothing is better at this season.

Cuttings of shrubs and rambling roses may be inserted this month in cold frame or under bell-glasses. Climbing Roses.—Cut out all useless spray growths, give moisture at the roots when required. If young shoots are attacked with mildew syringe with a specific. Sometimes at this season of the year one has more time to relay box edgings, if that is necessary, than in the spring, and I consider this month the best for that work.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Barrymore, Fota.

THE KITCHEN GARDEN.

WITH the exception of the first four or five days of the month of August up till the time of writing on the 20th, the weather has been anything but genial for the ripening of fruit and growth in this neighbourhood; and in the hardy fruit garden Plums and Morelli Cherries in particular have split badly, and owing to the persistent cold and wet weather many of them have gone bad.

ONIONS.—The spring sown and transplanted ones with me have been a disappointing crop this year for some reason or another. In the case of the former the seed germinated regularly and well, and then the plants seemed to make but little growth for some time, and mildew also made an early appearance and checked growth again in both instances. When growth has ceased the tops may be bent over, taking every two rows and bending them towards the middle. This will allow room to get on the bed and lift them of a fine day, and if one has the convenience of a cool, airy shed or an open fruit house the bulk can be brought in and laid out thinly to dry for a few weeks, turning them occasionally before being stored away for the winter. Large Onions that have been grown on exhibition lines, and which are excellent for boiling purposes, need careful handling, otherwise their keeping qualities are impaired.

CABBAGE.—The weather of late has been ideal for the growth of the plants, and those raised from seed sown the latter end of July are making good plants, and will be ready for transference to their permanent quarters this month. Ground that has been cropped with early Potatoes and well worked will need only forking over and levelling after giving a good dressing of wood-ashes and soot. Two feet between the lines and a foot between each plant will be sufficient for the earliest maturing varieties. Ground that is not in such good condition as the above-mentioned should be well dug and liberally manured. The site occupied by Onions is an ideal one for this crop.

CARROTS.—These have done remarkably well this year contrary to expectations, due largely to the frequent showers causing a quick growth, and in our own case the crop has been entirely free from the damaging effects of the Carrot fly. Choose a fine day for rising the main crop before the roots begin to split. Cut off the tops and store in a cool root shed in sand or ashes and protect from rats.

TURNIPS.—These may be lifted and stored similarly to Carrots or pitted in the open ground and used as required.

TRIPOLI ONIONS.—A sowing may still be made if necessary in the early part of the month with every chance of success, but choose a site on a south border.

BEETROOT.—Roots of the Globe variety may be lifted and stored, and the ground utilised for another crop. Avoid damaging the roots in any way, and remove the tops by twisting off. There is no need to hasten the lifting of the main crop until growth is properly finished, as the crop will take no harm.

CAULIFLOWERS.—Where autumn sowing is practised seed should be sown during this month and afterwards pricked out in skeleton frames at four inches apart and in soil that is not too rich.

CELERY.—The main crop at present is looking well, the frequent rains having suited it immensely. A frequent dusting of manure or soot during such periods will help it to make plenty of growth. Keep the trench free from weeds.

POTATOES.—Take every opportunity of examining these, and especially if any disease is suspected, and reject any showing the slightest trace, and do not hesitate to dust with slaked lime, and by frequent turnings the whole of the tubers will become evenly coated.

BRUSSELS SPROUTS.—The plants from the earliest sowings have by now made good specimens, and will be improved by having any of the lower leaves removed that are showing signs of decay, which will serve to admit more air and encourage freedom of growth of the sprouts. Support the plants if necessary with stout sticks or by moulding up soil to the lower part of the stems.

BROCCOLI.—Where these were planted on such sites as old strawberry beds without much preparation the plot will be much improved and benefited if the whole can be forked over when the pressure of work slackens, merely pointing the surface of the ground to admit a freer pas-

sage of rains, and if the plants were at all leggy at planting time, which will, I think, be a common occurrence this season, the plants may be steadied in the same way as other Brassicas by drawing up soil to their base.

Other work in the Kitchen Garden will consist of the eradication of seedling weeds at every opportunity and generally attending to appearance by the removal of all rubbish to the smother fire. Towards the end of the month be on the look out for a touch of frost, which might put an end to such tender subjects as Runner Beans and Vegetable Marrows, and if these can be protected for one night only their yield is often continued for some time afterwards. Late Peas showing any signs of mildew should be syringed at once.

THE HARDY FRUIT GARDEN.

The fruit room, if not already attended to, should be got in readiness for the storage of fruits as they become ready to pick. A thin layer of clean straw placed on the shelves just sufficient to steady and keep them in position is as good as anything I know, and will allow of the air circulating through. Avoid picking too early or the fruits will shrivel before their season of cooking or eating arrives; but pick when they part easily from the fruiting spurs, or else, in the event of a wind, the greater part will be blown down and rendered more or less useless. Choose fine weather and the middle part of the day when the fruit is perfectly dry, and handle as carefully as possible, having a good supply of suitable baskets from which the fruits may be easily transferred from the trees to the fruit room with the minimum amount of handling. Examine Peaches daily for ripe fruit, carefully placing them in boxes lined with soft wood-wool. Woodlice and earwigs have been very troublesome here this season. As soon as the trees are cleared syringe them again freely, and especially if spider is troublesome, or if infested with scale use a good insecticide as per the maker's directions. I prefer to leave the pruning of these till the winter, though no doubt the loosening of the growths is conducive to their better ripening, but unless tied up again, which means a good deal of extra labour, the growths are liable to injury by wind.

THE FLOWER GARDEN.

For earliest flowering sow Sweet Peas and grow as coolly and sturdily as possible, as then the plants will not be harmed later if exposed to frosts. Propagate Violas by spreading out the growths, after cutting off the flower heads and placing some finely-sifted soil about the base of the plant when plenty of rooted cuttings may be obtained later. If not already attended to, push on the work of propagating the stock, for next season, of bedding plants.

Calceolarias, Marguerites, Pentstemons, Veronicas may be struck in cold frames, and Geraniums, after allowing them to wilt in the sun, in boxes and stood out of doors. Propagate sufficient of such subjects as Ageratum, Iresine, Alternanthera, Salvia, Heliotrope, &c., as well as provide stock plants for producing cuttings in the spring.

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Irish Gardening

Contents

	PAGE		PAGE
Roses	145	Suburban and Allotment Gardens	155
Herbs at Abbeyleix House (Illustrated)	148	Native Dogwood	155
Notes	148	Irish School of Gardening for Women Meeanee, Terenure	156
Plants and the Winter	150	<i>Drimys aromatica</i>	156
<i>Hydrangea paniculata</i>	151	Glasgow Flower Show	157
Cherry Laurels	151	<i>Astelia Cunninghamii</i>	157
The Comfrey Field Allotments, Glasnevin	151		
Autumn Flowers	152	The Month's Work—	
Large Potatoes (Illustrated)	152	Midland and Northern Counties	158
The Walnut Tree and the Pecan Nut Tree	153	Southern and Western Counties	159
Dublin Plotolders	154	Answers to Correspondents	160



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No. 140

ARBORICULTURE IN IRELAND

1917

EDITOR—J. W. BESANT.

Roses.

Wichuraiana Ramblers.

ALTHOUGH barely known at the beginning of the century, this class of ramblers now occupies so prominent a place in our gardens that it would require a considerable effort to imagine what it would mean to be without them. Should it ever be the fashion to erect statues to horticulturists, the introducer of "Dorothy Perkins" should be one of the first to be so honoured.

Wichuraiana Roses occupy the forefront amongst ramblers for many reasons. They flourish with very little care in almost any soil or situation. Their beautiful foliage alone renders them worth growing even if they never flowered, and, with the possible exception of a few of the early flowering sorts, they clothe themselves from tip to base with their charming leaves. Very few varieties are liable to mildew, and none is very subject to other pests. Their flexible stems enable us to grow them in all sorts of ways, and the lavish profusion of their flowers decks the garden throughout the most enjoyable three months of the year.

The varieties are now numerous, and I propose to deal only with a selection of the best. The early kinds flower in June and early July, followed immediately by the late kinds, which continue during the greater part of August in this part of Ireland.

1. EARLY SORTS.—Chiefly R. wichuraiana crossed with Tea, H. T. and H. P. Roses. The individual flowers of some are very large, and most are borne in small trusses. Some are good on walls, as, for example, François Juranville, Alberic Barbier, and American Pillar.

Alberic Barbier.—Golden yellow buds, opening to fully double flowers of creamy white, and of good size and form. Small trusses but in great profusion

Alex. Girault.—Bright carmine, with salmon-yellow at base of petals; a good grower,

with a great profusion of medium-sized double blooms.

American Pillar.—Some one has described this as a Rose for any backyard. It is a tremendous grower, with dense leafage and big trusses of single flowers of large size standing out boldly from the plant. The colour is a very vivid shade of rose or deep pink, and the variety is very popular; mildew-proof.

Ariel.—A very pretty single, with copper buds opening to large flowers of a bright amaranth-pink.

Elise Robichon.—This is a lovely Rose, not at all sufficiently well known. It flowers in the utmost profusion for a month or more, and none is more charming as a standard weeper, or on a pillar, tripod or trellis. Salmon buds opening to pink shaded with copper.

Evangeline.—Softest pink single flowers with golden anthers; very charming and deliciously fragrant.

François Foucard.—Yellow, fading to cream; very pretty in the bud.

François Guillot.—Cream buds, opening to extra large double white flowers; very handsome indeed, and with beautiful foliage.

François Juranville.—None is more desirable than this. The flowers are of a delightful clear salmon-pink shade, are of extra large size, and very strongly Tea-perfumed; the stems and foliage are beautifully tinted and glossy.

Gerbe Rose.—Handsome double flowers of large size, soft pink in colour, and opening well. One of the sweetest of Roses, and will do on a North wall.

Leontine Gervais.—A most beautifully coloured Rose with coppery buds, the open flowers in shades of salmon, copper and yellow; extremely profuse and decorative. Everyone should have it. Tea-scented.



THE BLESSED THISTLE.
Carbenia benedicta, p. 148.

Miss Hellyett.—Large full flowers, rosy-pink with salmon centre ; slightly scented.

René André.—Coppery-red buds, opening to saffron-yellow, tinted with orange pink ; loosely double flowers ; Tea-scented.

Ruby Queen.—Glowing carmine. This is one of the most distinct and beautiful, the colour being remarkably lively and pleasing. Blooms of fair size in good trusses, and double ; mildew-proof.

Shower of Gold.—Although this is very pretty, it is too generously named. It has probably the most beautiful foliage of all ; bronzy-green, very glossy, and mildew-proof. Buds deep golden-yellow, paling slightly when open, but nearly the shade of William Allen Richardson. The best yellow yet raised, but not recommended for weeping standards, and not so hardy as others.

2, LATE SORTS.—The popular Dorothy Perkins may be taken as the type of most of the varieties in this section. In common with some of the early sorts it may be said that all the late kinds prefer a freer circulation of air than is obtainable on a wall, but they flourish on poles and tripods, trellis, arch, pergola or bower. For growing as weeping standards or "Shower" Roses the following are amongst the best :—*Excelsa*, *Dorothy Perkins*, *White Dorothy*, *Dorothy Dennison*, *Sander's White*, *Lady Gay*, *Toubadour*, *Coronation* and *Hiawatha*. All those to which I refer are double-flowered except *Hiawatha*.

Coronation.—A rampant grower and very free-flowering. Fine trusses of semi-double flowers of a very vivid crimson, with white streaks which are unobserved till close to the plant. In the distance the colour effect is bright scarlet, and the variety is therefore most valuable.

Dorothy Dennison.—Soft shell—or carnation-pink. Considered to be identical with *Christian Curle* and *Lady Godiva*. Quite indispensable.

Dorothy Perkins.—The well-known vivid pink variety, of perfect quality, with which everyone begins.

Excelsa.—Many like this best of all. Perhaps best described as a crimson *Dorothy Perkins*, which is high praise. But its more flexible stems render it ideal as a weeping standard, grown without any support save the necessary centre stake. The fine rich scarlet-erimson colour is splendid.

Flame.—Brilliant salmon-pink, with a considerable dash of scarlet. One of the prettiest of all the shades in this class and quite distinct.

Hiawatha.—Very bright single crimson flowers with golden anthers. It flowers all over the plant in most effective trusses. Some have an unaccountable dislike to it because single-flowered, but none is more effective or more lasting in bloom.

Lady Gay.—Similar to *Dorothy Perkins*, but with more flexible stems, which I find produce a very pretty effect when cut for some forms of decoration. The colour is also, if anything, a shade deeper than *Dorothy*.

Minnehaha.—Of this there is more than one form which leads one to think that it sports. The best form is beautiful, with splendid upright pyramidal trusses of a true pink shade. I think it is the best real pink.

Mrs. M. H. Walsh.—This sends out a large number of very slender stems similar to the type. Flat rosette-shaped double flowers in large clusters ; pure white.

Sander's White.—The best white. Flowers very white and very shapely, with lovely smooth petals and curious old-rose scent.

Sodenia.—Here we have an exceptionally good Rose which deserves to be better known. It is one of the very best red ramblers. The colour is pure brilliant carmine ; the flowers produced in even greater profusion and in larger trusses than on *Dorothy Perkins*. It is the earliest of the Perkins type to flower, coming in early in July. The trusses are better displayed, right out from the foliage, than any other.

Troubadour.—An excellent double crimson, perhaps a shade darker than *Excelsa*, which it much resembles.

White Dorothy.—A white sport of *Dorothy Perkins*, occasionally producing blooms partly pink. It seems to be specially good as a standard, the arching of the stems throwing the flowers well out from the foliage.

Paul's Scarlet Climber is the latest addition to the Hybrid *wichuraianas*, and created a sensation in London, sweeping all before it by winning the Gold Medal of the N.R.S., the Award of Merit, R.H.S., and also the Cory Cup for the best new British-raised climber. As it was only distributed in 1916 I do not include it amongst the varieties tried over many years, but I can vouch for its vigour and for its brilliant colour as flowered here this summer on the lines of maiden plants budded last year. The blooms are of medium size, semi-double, vivid scarlet shaded with crimson, and as the maiden plants have flowered it must be a profuse bloomer. It is considered to surpass any other climbing *Rose* for brilliancy of colour.

PRUNING.—If not already done, the pruning of *Wichuraiana* *Roses* should be attended to immediately, and I will conclude with a brief reference to this subject, which, although the most important part of their culture, is, nevertheless, frequently neglected or only half done. It is very simple, but must be rigidly carried out if the best results are to be obtained. If planted in the autumn, in the March following all growths should be cut hard back, leaving only one or two of the strongest shoots as much as a foot long, and reducing the weaker ones almost to the ground. If planted in Spring, prune as above in March or April. Such a pruning is the only fair start for the plant, and by its means a number of vigorous shoots will be formed during the summer to produce flowers the second year. The next pruning will not be required until about seventeen months after the first was done, and in late August or early September of the second year all the shoots which have flowered should be cut right away to the base. During the second summer the plant should again have put forth an adequate supply of strong young shoots from the base, and these should be carefully tied up to take the place of the wood which has flowered and been removed by pruning. When there are insufficient new shoots to clothe the pillar or other structure, it is desirable to leave some of the previous

year's growths, choosing for this purpose the freshest shoots and those which have sent out strong new lateral growths. In succeeding years pruning as described should be carried out each autumn as early as the plants are done flowering, as the removal of the old wood at this time enables the plant to ripen properly the young growths, and to devote its whole energy to maturing these. On the young shoots depends the future of the plant, and as these shoots come from the base and sprawl about the ground, care must be taken during the summer months to ensure their safety from injury. This can be effected by tying them up loosely to prevent the tips being broken off by passers by.

In the case of weeping standards the first pruning should be done at the same time and in the same manner as the first pruning described above. In succeeding years the pruning should be done in early autumn immediately the flowers fade, and when there are sufficient young shoots of the current year's growth, all the older growths should be cut hard back as near to the head of the stock as possible. If it be necessary to retain a few of the older shoots to preserve the symmetry of the tree, care should be taken to cut away the twiggy pieces of flower stems remaining on these. New growths which are so long as to be liable to trail on the ground when weighted with the following year's flowers should be shortened.

Clontarf Nurseries.

J. M. WATSON.



HERB WALK AT ABBEYLEIX, p. 148.

Herbs at Abbeyleix House.

ABOUT the cultivation of Medicinal Herbs, there is almost an "odour of sanctity" and an influence of far gone times, therefore, in the Church Walk of the Abbeyleix House gardens they seem most suitably placed.

There is a very interesting collection of a great many kinds (of which I give a list), and, in addition, a good collection of the culinary and sweet herbs. Each variety of herb is planted in a triangular-shaped patch, and the whole effect is very pleasing. On a bright August morning the contrast of Borage and Margiold was very charming, but herbs, as a rule, are not gay in blossom and their foliage is rather of the more greyish green type. In the Blue Garden, the two most valuable herbs have been interned—*Atropa Belladonna*, and *Hyoscyamus Niger* (Henbane). The former has done very well and yielded a reasonable first crop of leaves for this season.

The Henbane has not yet appeared, but no herb-grower would be daunted by that, knowing that the seed has lain dormant in some cases for over 50 years.

On the Terrace, some of the beds are filled with Camomile, Marigold, Mullein, Aconite, Black Pansies, Thyme, Marjoram, &c.; and its sunny open situation should suit most herbs well. There are two field crops in the demesne—*Datura* and Blessed Thistle. The former—with everyone—suffered in the early part of the year from slugs and snails, and had in many instances to be replanted; but now, though late, it promises to be a good crop. The Blessed Thistle, also, saw trouble in its early days, and a great proportion of it was grubbed up and eaten by mice, pheasants and pigeons, and a portion of the field is quite bare, but where it has taken hold, the Thistle grows fiercely—plant jostling plant for elbow room.

As will be seen in the picture, the individual plants are very large, and are, I should think, 2½ feet high, or more, and about 3 feet from tip to tip of the branches.

Mr. McGlashan has taken a great interest in this new line of horticulture, and has now in his care a very large and representative collection, which should prove of much use to students.

He also has careful notes of sowings and germination, and of any difficulties he has had.

One most useful thing he has discovered is that *Belladonna* leaves can be quite successfully dried without heat.

This of course needs care and time, but some of his dried stuff was examined by Miss Geoghagan, the Leinster Herb Association Drying Export, and she said that it was *excellent*,

both in colour and texture, and was quite as good as some that she had dried at a high temperature.

Though the herbs in the garden are more pleasing, the field crops are in a way more instructive and helpful, as so few people have had the courage to grow a large quantity of herbs. It is undoubtedly that form of herb culture which may be made profitable, and we owe a debt of gratitude to anyone who will pioneer a new industry in this way, hoping meantime that those who have started on the larger lines will continue to help, and show us the way.

The following is a list of the herbs grown in field and garden at Abbeyleix House:—*Belladonna*, *Henbane* (sown), *Hyssop*, *Camomile*, *Artemisia*, *Thyme*, *Pennyroyal*, *Hollyhock*, *Mallow*, *Solanum nigrum*, *Lavender* (*Vera*), *Coriander*, *Rampion*, *Poison Hemlock*, *Inula Helenium*, *Balm*, *Horehound*, *Catmint*, *Rue*, *White Dead Nettle*, *Parsley*, *Teucrium Chamædris*, *Aconite*, *Fennel*, *Dill*, *Aniseed*, *Angelica*, *Datura*, *Blessed Thistle*, *Verbena*, *Mullein*, *Borage*, *Nicotiana*

August, 1917.

MURIEL E. BLAND.

Notes.

A Good Apple.

THERE is probably not a finer flavoured dessert Apple in existence than Cox's Orange Pippin; the pity is, therefore, that it cannot be grown everywhere in the open. It is useless on heavy cold soils, for although it will grow, the crop will be wretched and the few apples of miserable quality. On warm light soils, however, it does well, the fruit being of medium size, colouring well, and the flavour unique. The object of this note, however, is to suggest to private growers, who love a Cox's and who cannot grow it in the open, to obtain horizontal or fan-shaped specimens and plant against a wall, facing south or west. There, with shelter from north and east, and comparatively dry warm soil at the base of the wall, splendid fruit for home consumption can be grown.

Crab Apples.

PYRUS MALUS NEIDWETZKIANA is this year fruiting for the first time in my recollection on trees fully a dozen years planted. This variety has very dark wood, foliage and flowers; the fruit is very dark purple-brown, of larger size than any other Crab Apple, but sparsely produced, only a few fruits on each tree. Other varieties are very heavily loaded with fruit this

year, Dartmouth is fine and John Downie studded thickly with fruit on every branch. They will be a fine sight when the fruit attains mature colouring. It would be interesting to know if any other reader has fruit on *Neidwetziana*.
J. M. W.

Hardy Yuccas.

IN these days when food production loom largely in our minds we are apt to forget the beauties of nature until some happy chance brings to our notice some beautiful flower or charming colour combination. Such a chance occurred when Mr. E. H. Walpole sent the beautiful photograph of a *Yucca*, herewith reproduced. Delightful in itself, the picture teaches us the value of having permanent occupants of our gardens which can be relied on to go on increasing in vigour and beauty year by year without troublesome planting and propagating annually.

The *Yuccas* came through last winter magnificently, and are interesting at all times, even when not in flower; their handsome sword-like leaves show up distinctly amongst the surrounding vegetation, and the plants are effective either as isolated specimens or in groups. Practically all the hardy species, numbering about seven, with as many varieties, come from the southern States of America.

A fuller account of the genus appeared in our issue of October, 1915, p. 149.

Rhododendron Auriculatum.

AMONG the new species of *Rhododendrons* introduced by Mr. E. H. Wilson from China this is one of the most distinct and striking. The long, leathery evergreen leaves, up to 13 inches long and 2 to 5 inches wide arrest attention at any time, while its late season of growth and flowering, the end of July and early August, give the plant a distinct value of which in happier times our hybridists will, no doubt, take full advantage.

R. auriculatum was introduced from Western Hupeh by Mr. Wilson in 1901 when collecting for Messrs. Veitch, while Mr. Augustine Henry, now Professor Henry, collected specimens earlier in the Patung district of Hupeh. It forms a large shrub or small tree up to 30 feet high. The species is allied to *Fortunei*, *decorum*, and *discolor*, and has six to eight large funnel-shaped flowers in a truss, usually seven-lobed, occasionally with six or eight.

A plant recently flowering in the Rhododen-

dron cell at Kew attracted considerable attention. Its behaviour suggests partial shade for successful culture. The white or pink flowers have a distinct fragrance. The Wilson-Veitch seed number is 920 W.
A. D.

Lilium Regale.

IN his note upon this Lily, at page 119 of the August issue of IRISH GARDENING, "Anon." certainly does not overrate its quality. Having regard to its hardihood, its immunity from disease, the ease with which it may be raised from seed and its superlative beauty and perfume, I consider it the most desirable of the genus which has been introduced to this country. "Anon." says that it may be grown from seed to flowering size in about five years. One need not wait so long. Seed was saved and sown here in the autumn of 1915; some of the seedlings have flowered in the open this summer—that is, in less than two years. I enclose a photograph of one of a group planted three years ago. It was 5 feet 4 inches high, bore eleven blooms, and grew in loam with lime added, and a liberal admixture of wood ashes.

The string, which appears so prominently in the photograph, was attached to steady the plant while its portrait was taken on a breezy morning, not to support it; for it is one of the merits of this Lily that it requires no staking, the stem being strong and wiry.

L. regale has a formidable rival in beauty in *L. Sargentæ*, which, however, is not so hardy, at least we have not yet hit upon the nature of its requirements. We have lost several old bulbs during the winter, although two-year-old plants raised from stem-bulbils, which this Lily produces in great profusion, came through unhurt, and several of them are flowering this autumn. It is much to be hoped that it will prove amenable to the conditions of our soil and climate, for it is a splendid flower, and blooms three weeks or a month later than *L. regale*.
HERBERT MAXWELL;

Monreith.

Oenothera missouriensis.

THIS "Evening Primrose" has the advantage of flowering by day as well as in the evening. The large handsome yellow flowers are attractive at all times and are well set off by the reddish prostrate stems clothed with narrow grey-white leaves. A sunny position in well drained soil is best where it is a welcome addition to the rock garden in autumn.

Lilium pseudo-tigrinum.

THIS new Chinese species bids fair to oust our old favourite, *L. tigrinum*, from its place in the garden. The new comer grows tall, reaching quite five feet in a peat bed among Camellias and other peat-loving shrubs. The stems are thickly clothed with long, almost linear, leaves of a dark glossy green and surmounted by a spike of from eight to nine flowers, but probably far more when the plant reaches its maximum strength. The flowers are large, with reflexed segments of a deep orange-red, the lower half of each segment spotted with dark brown spots. Already comparatively cheap, it is likely *L. pseudo-tigrinum* will soon become popular in gardens and will be a great acquisition to our early autumn flowers.

Lilium Biondi.

SOMEWHAT similar to *L. pseudo-tigrinum*, but with apparently smaller flowers, the exact position of this Lily seems rather obscure. The plant under observation here has the curious habit of producing a fasciated stem every year, and for this reason perhaps the flowers are smaller than they normally would be. It has also the peculiarity of giving off numerous slender side shoots from the base and produced at some distance from the main stem; none of these has shown any flowers. It would be interesting to have other growers' experience of this Lily.

J. W. B.

Corydalis thalictrifolia.

THIS pretty Chinese Fumitory is one of the prettiest plants for the rock garden flowering for many months in succession. The spikes of clear yellow flowers carried over the prettily cut foliage are attractive at all times, and especially in autumn when other flowers are not plentiful on the rockery.

Unfortunately it cannot be regarded as absolutely hardy and succumbs to severe frost. A sheltered, sunny spot, protected by an overhanging stone, is best, and the position should be dry in winter. Seeds are freely produced, and a stock of young plants is easily raised. It is a good plan to sow seeds as early as they can be collected in autumn, and good young plants should be available for putting out in spring. These will soon come into flower and will continue well into autumn, which is a great advantage. The total height is not more than about nine inches.

Allium cyaneum.

THIS pretty little Chinese "Onion" is a useful ornament to the rock garden. Of tufted habit, producing slender grass-like leaves, it is dainty in appearance and has nothing coarse about it, as is the case with many Alliums. The flowers, produced in heads on slender stems just beyond the leaves, are dark blue in colour. As an interesting contrast to the above, *Allium yunnanense* can be recommended. Of similar habit and slender leaves, the flowers in this case are pale pink. Though not quite so attractive as *A. cyaneum*, it is nevertheless a pretty little plant for August flowering.

Campanula × *Fergusonii.*

THIS is a hybrid between *C. carpatica* and *C. pyramidalis alba* sent out a dozen or more years ago. It is intermediate between the parents, and grows about two feet high when doing well. It seems best suited on the rock garden, where the soil is well drained; it is apt to perish in winter in the heavier soil of the herbaceous border, inheriting perhaps something of the nature of *C. pyramidalis*, which, though fairly hardy, does not enjoy a cold, wet soil. The flowers of *C. Fergusonii* are pale blue.

Gentiana Freyniana.

THIS is one of the most satisfactory of the larger flowered Gentians, flowering freely annually. It flourishes in any well drained soil, and apparently has no objection to lime. It is similar to *G. septemfida*, the large flowers borne in clusters at the ends of the shoots, being wider and not so prominently crested between the corolla segments. Seeds are usually formed in abundance and germinate fairly well, but irregularly. The young plants require a few years to become well established and gradually get stronger, until ultimately the shoots are nine inches to a foot long when flowering.

Plants and the Winter.

THE list below, compiled at the Royal Botanic Gardens, Glasnevin, comprises the choicest and least common of those which came through last winter with comparatively little injury. It may be of use to planters who are just beginning to make a collection.

<i>Abelia triflora</i> (18-20 ft.).	<i>Arthrotaxis cupressoides</i> .
<i>Aciphyllas</i> .	<i>Arctostaphylos Manzanita</i> .
<i>Arundinaria japonica</i> .	<i>Abelia Craebneriana</i> .
<i>Atrophaxis frutescens</i> .	<i>Agapanthus</i> in variety.
<i>Acer palmata</i> .	<i>Buddleias</i> .

Corylopsis Wilmottiae.
 Cercocarpus—
 intricatus.
 tenuifolius.
 Carpentaria californica.
 Ceanothus—
 rigidus.
 Gloire de Versailles.
 Azureus.
 Russellianus.
 delilianus.
 papillosus.
 Caryopteris mastacanthus.
 Cystisus Dallimorei.
 Camellias (all safe).
 Cupressus arizonica.
 Coprosma propinqua.
 Cistus—
 Cyprius.
 ladaniferus.
 laurifolius.
 all others practically
 killed.
 Clematis, except *C. cirrhosa*.
 of which old plants died.
 Calceolaria violacea.
 Diostea juncea.
 Desfontainea spinosa.
 Davidia involuerata.
 Drimys aromatica.
 Euonymus fimbriatus.
 Eucalyptus—
 pulverulenta.
 resinifera.
 cinerea.
 urnigera.
 verniciosa.
 Eucryphia pinnatifolia.
 Eucommia ulmoides.
 Ephedras.
 Fuchsia thymifolia.
 Fendlera rupicola.
 Fabiana imbricata (safe in
 sun, killed in shade).
 Fothergilla Gardeni.
 Fagus—
 antarctica.
 obliqua.
 Grevillea—
 rosmarinifolia.
 thyrsoides.
 Grewia parviflora.
 Genista actnensis.
 Hydrangea Sargentii.
 Hypericum patulum (others
 injured).
 Hibiscus syriacus.
 Ilex dipyrrena.
 Jasminum revolutum.
 Kniphofia Northiae (old
 leaves only injured).
 Ketelercia davidiana.
 Ligustrum Prattii.
 Magnolia—
 Delavayi.
 parviflora.
 salicifolia, and all others.
 Medicago arborea.
 Olearia—
 oleifolia.
 nummularifolia.

Osteomeles anthyllidifolia.
 Osmanthus Delavayi.
 Ononis aragonensis.
 Plagianthus betulinus.
 Photinia serrulata.
 Pittosporum—
 Buchanani.
 rigidum.
 crassifolium.
 tenuifolium.
 Colensoi.
 Ralphii.
 daphniphyloides.
 Phlomis chrysophyllus.
 Prinsepia sp.
 Potentilla—
 Veitchii.
 Vilmoriniana, and others.
 Phyllocladus alpinus (in
 shelter).
 Photinia serrulata (most
 species killed or badly
 injured).
 Phyllostachys nitida.
 Phormium —
 alpinum.
 Veitchii.
 Cookianum.
 Lord Ventry's var.
 Podocarpus—
 chilina.
 nivalis.
 Pinus—
 Hartwegii.
 insignis.
 Prunus—
 Mira.
 Davidiana.
 Rosa species all safe, some
 H. T. and T. badly injured.
 Rhus vernicifera.
 Styxax Wilsoni.
 Senecio Buchanani (safe only
 in shelter).
 Sophora—
 tetraptera.
 McNabiana.
 Salix magnifica.
 Stranvæsia undulata.
 Spiræas (all safe).
 Solanum crispum.
 Thubergia natalensis.
 Torreya.
 Vella—
 pseudocytisus.
 spinosa.
 Veronica—
 pimelioides.
 decumbens.
 Traversii.
 Lindsayi.
 Godfreyana.
 Haastii.
 subalpina.
 Autumn Glory.
 Lewisii.
 glaucophylla.
 Darwiniana.
 parviflora.
 Viburnum Carlesii.
 Xanthoerac sorbifolia.

Hydrangea paniculata.

THIS is a beautiful autumn shrub: in fact for September flowering I do not know a better. The variety *grandiflora* is more favoured by some, but blooming a month earlier there is room for both, though the species is more valuable flowering when there are fewer showy shrubs in the pleasure grounds.

H. paniculata is a native of China and Japan, forming with age a large deciduous shrub, or it can be pruned to assume a tree-like character. To secure the best results the plants should be grown in a trenched and well-manured loamy soil. Fairly hard pruning is necessary annually in early spring to secure the large pyramidal panicles of white flowers. The pruning encourages an abundance of young shoots, which it is an advantage to thin when they are one to two inches long. Cuttings of the young shoots may be inserted in a cold frame at the present time, or a month earlier in a slightly-heated, propagating frame.

Cherry Laurels.

Two interesting small-leaved varieties of *Prunus Laurocerasus* (*Laurocerasus officinalis*) flower during September, in addition to which they are useful evergreen shrubs, and hardier than the large-leaved forms. *P. Laurocerasus var. schipkaensis* has dark green narrow leaves up to about 4 inches in length, and long elegant, slender racemes of white flowers. It is a native of the Shipka Pass. The variety *Zabeliana* is a rather smaller bush than the foregoing in all its parts, and a very useful dwarf evergreen shrub for the front of shrubbery borders. Both are readily increased by cuttings. A. O.

The Comfrey Field Allotments, Glasnevin.

IN connection with a fete in aid of the funds of the Irish Counties War Hospital, Glasnevin, the above society held a most successful exhibition of produce in the grounds of the Clarendon Institution, Glasnevin, on Saturday, the 15th September.

Consisting entirely of vegetables, the exhibition was highly creditable, and reflected great credit on those responsible for the organisation of the show and on the numerous competitors who enthusiastically came forward with their entries. Potatoes were an excellent show, and bore evidence to clean, careful cultivation, which augurs well for a good supply of the popular tuber through the winter. The collections of vegetables were most promising, and displayed considerable taste in setting up as well as in the selection of varieties. Celery, Parsnips, Carrots, Onions, Beetroot, Cabbages, Marrows and such like crops of food value were most favoured, and one hopes that such an admirable institution will be continued in the future and long after the war is over.

We will be very glad if the Secretaries of other Allotment Societies will kindly favour us with a report of any shows or other competitions in connection with the Allotment Movement.

Autumn Flowers.

As with early spring flowers, there is a peculiar attraction about many of our autumn flowers. As if to compensate for the fast passing glories of the flower season they seem to take on warmer and richer hues as the summer wanes and autumn passes into winter. Just now, in the latter half of September, the garden is a blaze of colour, which, if the weather continues at all favourable, will carry on into October. Many annuals are still beautiful, notably the *Lavateras*, of which the variety *Loveliness* is one of the best. *Phlox Drummondii*, in various colours, is still brilliant, and so, too, is *Zinnia Haageana*, a most useful half-hardy annual which gives much useful colour in autumn, and is nice for cutting. Ten Week Stocks were never finer than this year, and flowered for an abnormally long time, even yet being quite bright.

Many of the perennial herbaceous plants are now at their best, and prove conclusively that well grown and judiciously selected there is nothing to beat hardy plants for a display. Despite war-time economy, and consequently less attention than usual, the borders are a great attraction. Masses of perennial Sunflowers, *Rudbeckias*, *Heleniums*, *Anemone japonica*, *Aconitum Wilsoni*, *Michaelmas Daisies*, *Kniphofias*, *Gladiolus brechenleyensis*, *Gentiana asclepiadea*, especially Perry's variety, all combine to make the herbaceous garden a source of much pleasure in autumn.

Border *Chrysanthemums* and *Dahlias*, too, though requiring propagation annually, are less trouble than many tender bedding plants, and yield a glorious display as well as abundant material for cutting.

The colours of many of the *Michaelmas Daisies* are difficult to describe, but they range through white, pale blue, mauve, lilac and pink, and make a lovely display; some of the best now flowering are *F. W. Burbidge*, *Piccolo*, *R. C. Pulling*, *Lady Lloyd*, *Saturn*, *Nancy Ballard*, *cordifolius Diana*, *cordifolius magnificus*, *Mirifique*, *Glory of Colwall*, *Corona*, &c.

Of border *Chrysanthemums* now flowering and full of buds the following are good:—*Well's Massie*, creamy white; *Ethel Blades*, crimson; *Tottie*,

orange and yellow; *Horace Martin*, deep yellow; *Climax*, double yellow; *Betty Sparks*, double pink; *Cranford White*; *Cecil Wells*, reddish buds opening deep yellow; *Alice*, semi-double bronzy crimson; *J. J. Hart*, dwarf bright yellow; *Amber Gem*; *Goacher's Bronze*, and *Yvette Richardson*, single crimson.

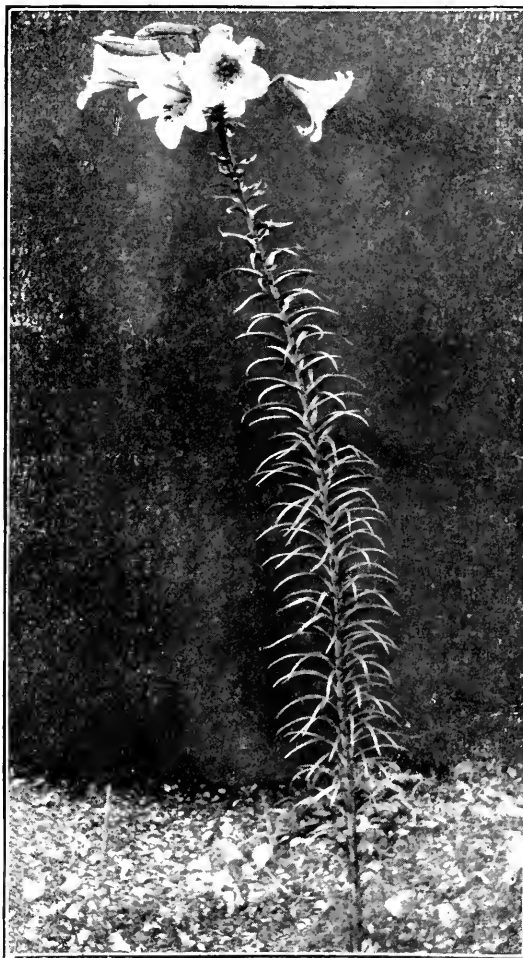
Some noteworthy perennials are *Helium autumnale rubrum*, bearing masses of deep crimson flowers; *H. Riverton Gem*, golden yellow with dark centre; *Rudbeckia Herbstonne*, growing 6-7 feet high and bearing immense clear yellow flowers; *Helium Gartenonne* has fine large yellow flowers with dark centres.

ANON.

Large Potatoes.

THE present year, which is remarkable for the large number of Potatoes planted, will no doubt produce some records in yield and size. We are indebted to Mr. Angus Slater, of The Gardens, Ballinacor, Rathdrum, Co. Wicklow, for the

opportunity of illustrating some remarkable tubers grown by him, and of which he writes as follows:—"The variety is *Flounder* grown in ordinary garden soil in drills with a light dressing of manure spread in the drills, the "sets" planted on the manure, then a final sprinkling of A1 fertiliser (*Paul & Vincent*). I may say the soil is of poor quality and gravelly. They were planted on February 28th. The largest weighed 2 lbs. 10 ozs. and the four weigh 6 lbs. 2 ozs. I remember reading in a London pictorial paper that a Potato had come under their notice weighing 2 lbs. 8½ ozs., and they wished to know if that were a record. Can the one I have sent you be beaten? In spite of the large size it is a very good cooker in the skin, turning out, as we commonly say, like a ball of flour. We grow other early varieties also, viz.—*New Success*, *Duke of York*, *Sharpe's Victor*, *Beauty of Hebron* and the *Colleen*. We lifted the two first named on the 23rd of June, and a better turn out I have not seen for many a day. *Sharpe's Victor* was a failure, *Beauty of Hebron* very good, and as for the *Colleen*, it is hard to beat for a good second early, a very heavy



LILIUM REGALE AT MONREITH, WIGTOWNSHIRE. p. 149.

cropper and a splendid cooker in the skins."—A. S.

We will be glad to hear from other readers of any remarkable crops. Although there may be no advantage in tubers of large size it is, nevertheless, interesting to know what can be produced from poor soil by good cultivation. Much help would be given to cultivators next year if growers would give their opinion of the merits of planting in drills versus ridges or lazy beds.—ED.

The Walnut Tree and the Pecan Nut Tree.

In the last few years the value of walnut wood has increased from £3 or £4 10s. per cubic yard to £9 or £10 10s. As a result of this rise in price many owners of walnuts have felled their trees in large numbers, so that, in certain districts, there is a considerable decrease. Nevertheless, under suitable conditions, the walnut tree is a profitable investment, even from a point of view of its fruit only. Strong measures should be taken in the different countries to protect these trees, and Switzerland has already shown the way in this respect.

The author proposes that, in the south of France and similar districts, attempts should be made to grow an American tree of the *Juglans* species whose value, during the last few years, has become equal to that of the walnut. This is the pecan nut tree (*Hicoria pecan* Erit. = *Carya olivaeformis* Nutt = *Carya pecan* Engler and Graeb.). This tree grows wild in the following North American States:—Texas, Oklahoma, Louisiana, Mississippi, Alabama, Arkansas, Missouri, Kansas, Tennessee, Kentucky, Indiana, Illinois, Nebraska and Iowa. It has recently been much cultivated in Florida, Virginia, Georgia, Carolina and on the Pacific coast in California and Oregon, and even in the more northern states, Ohio, Michigan, New York, Pennsylvania, Maryland, Delaware and New Jersey.

A century has not yet passed since the Americans began to gather wild pecan nuts, to distinguish between the better and the worse varieties and to graft. It is especially since 1900 that pecan nut plantations have increased. In America these trees suffer from certain fungous diseases and from the attacks of insects which do not exist in Europe, a fact which favours their introduction.

The pecan nut tree is distributed over a very large area, and grows in soils and climates differing greatly one from the other. It grows best in the alluvium of the Mississippi, where it attains a height of 130 feet and a circumference of 19½ feet. Its wood is much in demand, and, from 1905 to 1910, the price rose from 2d. to 7d. per pound.

The pecan nut tree was introduced into Europe a century and a half ago, but has not been propagated. Some isolated pecans are almost sterile: they are not dioecious, but are incapable of self-fertilisation. It is only since the last 15 years or so that the Botanical Department has introduced into France the principal large fruit American varieties and cultivated them. The

results have been decisive, and the author does not hesitate to recommend the growing of the pecan nut on the same ground as the growing of the walnut, which it should replace in southern countries where the walnut suffers from the summer heat.

Although it prefers deep, permeable, fertile soils, where its deep roots may be in touch with the water-bearing stratum, the pecan nut appears to adapt itself easily to various soils and climates. It may be sown on the spot, but is best grown in a nursery. Seeds should be taken as much as possible from vigorous trees which are known to be acclimatised. The nuts should be laid out in layers, or, two days before sowing, placed in a shallow vessel full of water and exposed to the sun. The soil should be light, and sandy rather than loamy. During the first year the young plants develop roots 4 or 5 times as long as the stem.

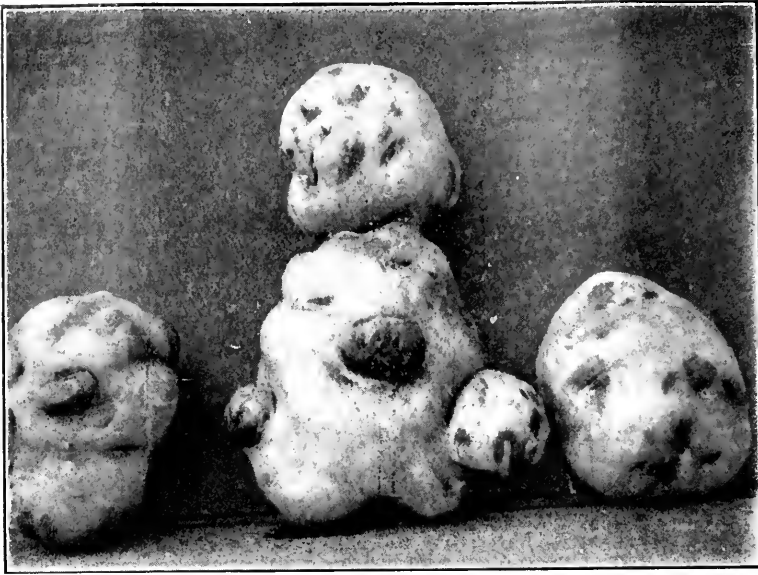
Grafting is now general in all American nurseries. All the different methods of grafting have been adopted successfully, but shield budding is most used, as it is the easiest. Dull, rainy days are best for grafting. Under favourable conditions trees sown in February or March may give suitable subjects for grafting in the following spring. These trees must be transplanted the following year. The nursery can then supply subjects of from 3 to 4 years for planting out: older subjects are difficult to transplant. Planting is usually carried out in January or February. Great precautions must be taken that the roots, which should be 20 inches long, do not dry up during transport. The subjects should be left in water for a night before being planted. The hole should be deep (6 feet). The lower part may be filled with fertiliser, covered with good soil, on the top of which the young tree is placed. Care should be taken that the tree be not planted at a greater depth than it occupied in the nursery. It should be watered before the hole is filled up. It is advisable to fertilise the plantation with green manure. From 8 to 12 years are required before any harvest is obtained.

When ripe the husk opens out into four and the nut falls, or is easily picked. The harvest is gathered in the same way as that of walnuts. The nuts should be placed for about 10 days in shallow layers in a well-ventilated loft, and dried; they are then ready for delivery.

It is necessary to clean nuts that fall and lie on the ground. This is done by means of a cylinder in which they are revolved and polished. Before selling, the fruit should also be sorted as the larger nuts always command a higher price.

The pecan nut greatly resembles the walnut. It is more oily, has a more delicate taste, and does not turn rancid when kept. Its thin shell is very fragile, especially in the improved varieties.

The high prices obtained by pecan nuts have encouraged horticulturists to cultivate them, and, at present, there are over 100 varieties grown in different climates. The most interesting of these are: Cordier, Curtis, Frotseher, Indiana, Major, Mammoth, Mantura, Money Maker, Moore, Schley, Sovereign, Stuart, Success, and van Demen. Many hybrids have been obtained by crossing *Carya olivaeformis* Nutt. with the species *Carya aquatica* Nutt. and *C. laciniosa* Loud. (= *C. sulcata* Nutt.).—*International Review of the Science and Practice of Agriculture*.



POTATO EARLY FLOUNDER, p. 152.

Dublin Plotholders.

INTERESTING FUNCTION AT THE MANSION HOUSE.

As an instance of the popularity and success of the Allotment movement it is interesting to note that under the Land Cultivation Committee of the Dublin Corporation no less than 1,235 plots, each one-eighth of an acre in extent, have this year been brought under the spade. We had an exceptional opportunity of seeing the results obtained in the whole of these plots during a tour of inspection in July, and can testify to the general thoroughness displayed in cultivation, hardly any instances of neglected plots being evident. Some of the areas which had been brought under cultivation bore evidence, even at the time of our visit, of appalling difficulties at the outset. None but men and women of immense grit and determination and inspired by the imperative necessity of producing more food could possibly have kept up the labour necessary to turn fields of bricks and old mortar, tin cans and rusty wire into smiling gardens stocked with wholesome, succulent vegetables. While the Plotholders themselves deserve all possible credit, a mead of praise is due to the Land Cultivation Committee for their enterprise in securing so much land in the short time at their disposal last spring. A word of commendation is also due to those who were entrusted with the setting out of the plots which has been done on an excellent plan, facilitating easy progress through and among the plots. Special thanks are due to Mr. Eyre, the City Treasurer, and his courteous assistant, Mr. Murphy, for their untiring efforts, and particularly for their excellent work in obtaining money for prizes to be offered for the best plots in the various areas.

It was for the purpose of presenting prizes to the successful Plotholders that the meeting in the Mansion House was called on the 11th of September. The Lord Mayor, who presided, was supported on the platform by several Councillors,

Sir T. W. Russell and Mr. Gill of the Department, Mr. T. Furlong, and Miss Harrison, who, in connection with the Vacant Land Cultivation Society, has done an enormous amount of work in stimulating the Allotment movement throughout Ireland.

Previous to the distribution of prizes speeches in favour of Allotments were delivered by several of those accompanying the Lord Mayor on the platform. These have been fully reported in the daily press and need no further comment here.

One subject mentioned by several speakers calls for some notice, however, that is, the acquiring of some part of the Phoenix Park for Allotments. There seems still a hankering after the broad acres of the Park to satisfy the longings of many yet without plots. So far as it lay in the power of IRISH GARDENING we have done our best to support the Allotment movement, and we have spared no trouble to publish the best advice regarding the management of Allotments in order to help the inexperienced, but we say, with all sincerity, spare the Park as long as possible. There is possibly no other public park in the world to equal it: it is the property of the nation and something to be intensely proud of. The Donegal man and the Cork and Kerry man has as much interest in the Phoenix Park as the Dublin resident. Its plantations of rugged Thorns, noble Oaks, tapering Cypresses, beautiful Birches, handsome tree-bordered avenues and broad playing fields are worthy of the most jealous care.

Chambers's Gazetteer of the World says:—"Dublin, as a whole, with its fine bay—often compared to the Bay of Naples—its splendid park . . . and beautiful environs, is one of the handsomest capitals in Europe." Let us then exhaust every other possible area before touching the Park. There must be land in the vicinity of Dublin which could be made available. In another column readers will notice a reference to Allotments in Glasgow, and will note with satisfaction that private owners there did not hesitate to give land for this purpose.

Suburban and Allotment Gardens.

OCTOBER in the garden is perhaps rightly called the month of indecision. Rubbish of various kinds will be accumulating, and the question often arises as to whether time should be spent on cleaning up, or whether digging and trenching should be proceeded with, burying the softer types of refuse in the trenches and burning woody material and perennial weeds.

Where there are weeds beginning to seed there need be no doubt as to what ought to be done, as seeds dropped now will prove extremely troublesome in spring. The lower leaves of Cabbages and Brussels Sprouts should be twisted off as they begin to get yellow.

HARVESTING ROOT CROPS.—Potatoes, if not previously lifted, should be treated as recommended recently. Carrots and Beet Roots should be lifted as soon as there are any signs of frost. The Beet should be lifted carefully with a digging fork, so as not to damage the root in any way, otherwise the sap will escape through the injured part, leaving the root with less food material, and of poor colour. The tops should be twisted off and not cut across close to the root, as in the case of Carrots. If there is a shed, cellar or out-house available in which there is no danger of severe frost entering, place a layer of sand, which should not be wet, about 2 inches deep, on a selected spot, forming a semicircle if near a wall, or a circle if in the centre of the shed. Then place a layer of roots on the sand so that their tips point towards their centre and their crown or leaves on the outside, then place a further layer of sand over the roots, and again, another row of roots, and so on until the heap is about 3 feet high, or the roots are all accommodated: finishing off with a layer of sand about 3 inches deep over the lot. This method is applicable to both Beet and Carrots. Parsnips are best left in the ground until wanted, as they shrivel badly if lifted and stored early.

If no shed or shelter is available the roots can be stored similarly to Potatoes, or by digging a trench about 2 feet deep and piling soil on top of the roots after they have been laid in the trench or clump, putting on sufficient to keep out the frost, and giving further protection by means of straw, bracken leaves, &c., during severe weather. Turnips can be treated similarly. Onions should have been harvested by this time: if not, they should be taken up without further delay and placed in a dry airy room to store, and if not thoroughly ripe, placed where they will get full sunshine—as in a garden frame or greenhouse, or in a warm airy room. Onions which are not properly ripened seldom keep well, commencing to sprout as a rule quite early in the season.

MOULDING OR EARTHING UP.—Celery and Leeks should be earthed up for the last time (choosing a dry day towards the middle or end of the month for this operation). The soil should be placed so as to nearly cover the topmost leaves in those districts where there is any danger of severe frosts, and in other cases to within about 8 inches of the leaf tips in the case of Celery. Leeks need not be earthed up quite as high.

PLANTING.—Continue to plant on well-manured ground, rendered sweet by the use of lime—

which should be applied at the rate of 4 to 6 ozs. per square yard—Cabbages of the July and August sowings, at 1 foot apart in the rows, with the rows 2 feet apart, cutting out alternate plants in the *early spring* months, before they get at all large.

Those who possess frames or other means of protecting plants during severe weather would do well to pot up or plant out Cauliflowers and Lettuces: these will be valuable if all goes well, as they mature earlier than these sown in the spring.

SOIL OPERATIONS.—As soon as the ground becomes vacant dig deeply or trench the soil, leaving it in a rough or lumpy condition: where the subsoil is of a sticky nature or of dubious quality it should be mixed with vegetable refuse and left at the bottom until another season. On heavy lands also it will pay to incorporate the manure with the soil at this season, but in the case of sandy soils it usually pays to wait a few months before putting in the manure, unless unlimited quantities are available.

FLOWERS.—Those who wish to plant out the usual spring bedding plants should do so without delay, so that the plants become rooted before the winter.

FRUITS. such as Apples and Pears, should be harvested as recommended in the last issue. This is a good time to take cuttings of Gooseberries and Currants, and also to plant new plants, trees and bushes (Strawberries, Apples, Pears, Plums, Gooseberries, &c.) commencing about the last week of the month. Loganberry and Raspberry canes which have fruited should be cut out if not done already and this season's shoots tied into position.

W. H. J.

Native Dogwood.

(*CORNUS NUTTALLII*.)

The British Columbia Dogwood—Vancouver's favourite and suggested as her emblematic tree and blossom, by Mr. H. M. Eddie, F.R.H.S.

It is a matter of much surprise to thinking people that this beautiful native tree has been practically overlooked by home beautifiers and street planters alike. Its presence in a garden or boulevard is about as rare a sight as an eclipse of the sun, and while hundreds of miles of native maples have been planted, this immensely more beautiful and very often more suitable tree, has been neglected. The chief reason, perhaps, has been that the tree is hard to detect by the uninitiated when out of flower.

The tree is too well known to require much description here, the compact heads of flowers surrounded by pure white involueral bracts, gives one the impression at first that it is a tree form of white Clematis. The flowers are succeeded by clusters of bright scarlet fruit, and with the orange to scarlet foliage in the fall, the tree produces a most pleasing blend of colours. During favourable falls the tree seldom fails to produce a second crop of flowers in nearly as great abundance as the summer crop.

So many people look upon the Dogwood simply as a wild shrub, because so few specimens have been "civilized" and planted on lawn or boulevard. They do not even regard it as a tree.—*B. C. Fruit and Farm Magazine.*



YUCCA RECURVIFOLIA AT MOUNT USHER, p. 149.

Irish School of Gardening for Women, Meeanee, Terenure.

COPY OF EXAMINER'S REPORT, 1917.

IN a general review of written papers examined, combined with results of oral tests, students of Meeanee show, in my opinion, a good practical grasp of the ethics of horticulture, generally, and those pertaining to economic gardening in particular.

This is to a more or less extent endorsed by practical work revealed by inspection of the plots.

The beneficent results of distinctive rotary vegetable cropping appear to be well understood by the students both in precept by the papers examined and by practical work carried out on the plots.

I was particularly pleased with the obvious attention paid to the cultivation of vegetables possessing under present conditions more than ordinary interest from their relatively high food value, such as Potatoes, Onions, and Parsnips. Several of the papers examined show a more than ordinary intelligent and comprehensive acquaintance with the salient points necessary to obtain the highest possible, particularly so in the case of the Potato.

The science of plant propagation also appears generally to be well understood. So, too, with the pruning and general treatment of fruit

bushes and fruit trees, as far as the season and things generally at the time of examination permitted me to see.

Soil preparation in the way of digging and trenching, with the economical use of both organic and artificial (chemical) manures seem generally to be well understood by the Meeanee students, some of whom have given details of operations relative to these matters in a particularly clear and concise manner.

On the whole, organisers, conductors, teachers, and pupils of the Meeanee School of Gardening are to be congratulated on the success of their combined efforts. These remarks apply to both the professional section and the amateur section, the former of whom appear to be well qualifying themselves for supervision of, and disseminating instruction in, the higher branches of horticulture, while the amateurs are gaining good practical knowledge enabling them to contribute to the betterment of domestic economy, and life generally.

EDWARD KNOWLDIN.

30th August, 1917.

EXAMINATION RESULTS.

Professional Students.

- | | |
|--------------------|-----------------------------|
| 1. S. Kirkpatrick | } First Class Certificates. |
| 2. S. Gwynn | |
| 3. P. McMurdo | |
| 4. F. Gorman | |
| 5. E. Bagnall | |
| 6. P. Schofield | |
| 7. E. M. Deane | } Second Class Certificates |
| 8. E. Rice | |
| 9. E. D. O'Kelly | |
| 10. F. A. Bigger | |
| 11. A. C. Kelly | |
| 12. L. Murphy | |
| 13. I. L. Blackham | |
| 14. K. M. P. Keogh | |
| 15. W. Ryan | |
| 16. M. Leary | ... Pass. |
| 17. E. M. Burke. | |
| 18. M. C. Brennan. | |

Semi-Professional Students.

1. I. Denning ... First Class Certificate.
2. K. L. Davis ... Second Class Certificate.
3. N. McC. Lynch.

Amateur Students.

- | | |
|---------------------|-----------------------------|
| 1. Mrs. Hackett | } First Class Certificates. |
| 2. Mrs. Gordon | |
| 3. Miss W. M. Seeds | |
| 4. Mrs. Baker | } Second Class Certificates |
| 5. Mrs. Dryhurst | |
| 6. Miss H. A. Cox | |
| 7. Miss E. Eames. | Pass |

Drimys aromatica.

Two fine pieces of the above are now fairly well studded with their bunches of black fruits, somewhat resembling Privet berries at first sight. They form graceful evergreen bushes, the foliage emitting a pleasant aroma and are totally different in appearance from *D. Winterii*.

E. R. (Foto),

Glasgow Flower Show.

OVER £500 OBTAINED FOR THE RED CROSS.

ON September 5th and 6th a most successful show was held in the St. Andrew's Halls, Glasgow. The entries were well up to previous years, and the quality all that could be desired in spite of the difficulties to be surmounted at the present time. Fruit and vegetables were prominent in view of the necessity for producing as much food as possible. In connection with the show a sale was organised to increase the funds, and many gifts of flowers, fruits and vegetables, as well as farm produce, were received: the Corporation also sent surplus plants.

The opening ceremony was performed by Lady Stirling Maxwell. The Lord Provost, Sir Thomas Dunlop, Bart., presided, and was accompanied on the platform by many prominent public men. The Lord Provost remarked that "visitors would be specially interested in the vegetable section. At this time of stress we were all anxious to know how we stood for our future food supplies, and he was delighted to see that, at any rate, there was an abundance of vegetables in the country."

In proposing a vote of thanks to Lady Stirling Maxwell, Sir John Ure Primrose said that in the present period of our national history gardening promised to become more a common possession of the community. Sir John Stirling Maxwell had done a great deal for afforestation, and *on his estate had given many sites for allotments*, and he (Sir John Ure Primrose) thought it was *the duty of every patriotic citizen and of the Corporation to see that allotment plots for the people became a permanent institution in the city.*"

In this connection it is interesting to note that the Glasgow Corporation Allotments number 4,500: much private ground also has been given for the same purpose, and it is estimated that

there are about 8,000 plots in and around the city.

Prominent among the prizewinners in the fruit section we were glad to note Alderman Bewley, of Danum, Rathgar, whose gardener, Mr. Donald McIntosh, is well known in Ireland as an able cultivator. Considering the long journey from Dublin it was no small achievement to secure 2nd prize in the competition for 12 dishes of fruit, 2nd for 6 dishes of fruit, 1st for a collection of Pears, 1st for two Melons, 1st for 12 Figs, 1st for a collection of Apples, and 2nd for twelve dessert Apples.

Astelia Cunninghamii.

THIS plant is now rather attractive, as it is carrying an upright branched spike of thickly set berries about eighteen inches high, each fruit resembling a miniature apple in shape, being conical, of a cherry-red colour, and darker on the apex. The fruits are borne on a cup, much the same as an acorn, but the latter is more flattened.

The plant in habit resembles somewhat a Pineapple or *Pandanus Veitchii*, though the leaves are not variegated and less rigid. The underside is covered with a buff-coloured tomentum, and also the upper margins to about a quarter of an inch, which, as the leaves become older, changes to a silver shade.

The margins of the leaves, which are a yard or more in length, are not toothed, and the plant is apparently quite hardy here, having passed through last winter without protection and growing as an isolated specimen on the lawn. It is a native of New Zealand. Each fruit is about half an inch in length.

E. R. (Fota).



YUCCA FILAMENTOSA IN THE GROUNDS AT HARRISTOWN HOUSE.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill,
Shane's Castle, Antrim.

KITCHEN GARDEN.

AUGUST and September have been, I think, a record for wet weather, the bad and good effects have been pretty well balanced in the kitchen garden. The Brassica family has been growing luxuriantly, also Celery, Leeks, and most of the root crops are doing well, with the exception of Carrots, which are inclined to split with too much wet. Weeds are hard to kill, and hand weeding has to be resorted to.

The ONION crop is going to be difficult to dry, so they should be hung up if possible in an open shed; use up the thick-necked ones first, keeping the nice thin-necked firm bulbs for winter and spring use. Weed and scuffle autumn sown Onions.

CABBAGES.—Examine the rows of Cabbages planted last month and make good any failures. Plant another batch pretty thick, as there are sure to be a few failures.

TURNIPS.—Late sowings are doing very well, the plants should be thinned moderately and the soil scuffled frequently.

CAULIFLOWERS sown last month should be transplanted into a cold frame; they should provide a supply in June and July.

CELERY.—Continue to earth up latest batch; throw plenty of soot in and about them, it will help to keep away slugs, &c.

LEEKs.—Continue to draw the soil up to the stems as they grow, as the more white stem the more the food value of the plant.

BEETROOT.—As the roots are more susceptible to frost, lift them very carefully and store in dry soil in a frost proof shed.

CARROTS ought to be lifted and stored in sand, a layer of Carrots and a layer of sand time about. A pit outside will do, but I prefer a shed, if possible.

SEAKALE.—All decaying foliage should be removed from plants intended for early forcing, in order to expose the crowns to the weather.

TOMATOES.—If green fruit is still hanging on

the out-door plants, the trusses should be cut off and hung up to ripen in a warm house, the flavour won't be so good as naturally ripened fruit, but they will do well for cooking purposes.

RHUBARB.—Plants intended for extra early forcing should be lifted and exposed to the weather for a week before being put into the forcing house.

WINTER SALADS.—Any available space in cold frames or pits should be filled with winter Lettuce and Endive, the latter can be blanched by throwing mats or straw over the lights; keep them on the dry side, as damp is the great enemy.

Trenching Vacant ground may be started if time is available, the sooner it is done the better for the soil.

THE FRUIT GARDEN.

This wet weather and lack of sunshine is not giving fruit the proper finish, and is also liable to cause second growths, especially if summer pruning was done early.

APPLES.—Continue to gather and store according as they ripen; dispose or sell off all varieties that won't keep well. Keep an eye open for varieties that do well and suit your district, for future planting.

PEARS, too, should be picked carefully when the seeds begin to change colour, or when easily pulled off the tree.

PEACHES cleared of fruit should be syringed daily, to ward off attacks of red spider. Prune away strong sappy, useless growths to give the fruiting wood a better chance to ripen.

STRAWBERRIES.—Continue to cut away runners on young plants, and keep the soil regularly scuffled, fill up blanks, and firm plants that have become loosened.

MORELLO CHERRIES at the first opportunity should be pruned, cleaned and trained, so that the work may, if possible, be done before the bad weather sets in. All shoots on young trees may be required for extension, but the shoots on established trees should not be closer than 4 to 6 inches.

FLOWER GARDEN.

Wintering of bedding plants calls now for attention. A nice airy house is the best for wintering bedding stuff, where a little fire heat can be introduced to keep off severe frosts. The chief thing is to keep them all on the dry side, watering only on fine days.

Tuberous Begonias should be lifted and dried

gradually by placing them thinly in a cold frame : later they should be placed in boxes, labelled and stored for the winter. *Lobelia Cardinalis* may be packed closely in boxes.

Old stools of *Pelargoniums* may be cut back and packed in boxes or potted on in case cuttings, may be scarce, and they themselves make fine plants for the centre of the beds next year.

SWEET PEAS.—If it is intended to make a sowing of Sweet Peas this autumn the work should be done without further delay : guard against mice by setting traps along the rows.

As soon as the spring bedding is completed, attention should be given to herbaceous borders and any requiring replanting should be done as soon as weather and time permits, of course a lot depends on the class of stuff : the borders may still be gay with *P. Asters* and *Chrysanthemums*, when, of course, you will leave them till later. Where *Daffodils* and *Narcissus* have been for a number of years in the same place, they should be lifted and replanted thinly in good fresh soil.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Barrymore, Fota.

THE KITCHEN GARDEN.

THE principal work connected with this department will be the completion of the storage of root crops and the removal from quarters of winter greens of all decaying leaves and rubbish, and, on favourable occasions, the destruction of weeds and promotion of growth by the loosening of the soil. Remove old rows of Peas and Beans that are past bearing, and if the supports are worth saving bundle them up and store for another season. If the soil is at all loose where the spring Cabbage plants are set out, carefully firm around them when the soil is dry, as this plant requires a firm soil to encourage a sturdy, hardy growth to stand the winter. All decaying vegetable refuse placed in reserve for mixing with manure should be turned when the opportunity occurs, and the outside turned into the middle.

POTATOES.—Examine the tubers that have been set apart for seed and keep them in a dry, cool, airy position. I have heard of more than one instance where they were left out to green and ripen during the excessive wet and sunless August; of the majority of them rotting. Set

them up in trays, especially those that are intended for earliest supplies, under glass, with the rose end upwards. Now is the time, if any one cares to adopt the practice of obtaining new Potatoes Christmas twelvemonths, to put aside, in a cool, airy place in a subdued light, the largest tubers of a maincrop variety, and in the meantime remove all signs of growth, and in a twelvemonth's time lightly cover with leaf-mould, and new tubers will be formed on the old ones, and as they become large enough removed to allow the smaller ones to mature.

LEEKs.—Keep the plot clean and assist growth by giving a good dressing of wood-ashes or soot or a watering with diluted sewage water.

CELERY.—Continue to earth-up the latest batches, choosing the afternoon of a fine day when the foliage is perfectly dry, having first removed all useless leaves and side shoots. A dusting of lime then before adding the soil will do much to prevent disfigurement to the stalks from slugs, centipedes and other pests. Should a watering be considered necessary, apply the day previous and give a final stimulant.

RHUBARB.—If forced Rhubarb is required for Christmas, lift a few crowns of an early variety and leave exposed on the ground for a week or two before placing inside.

SEAKALE.—If proper facilities are to hand for forcing, the same remarks apply as to Rhubarb. Select the strongest of the crowns and force in total darkness.

CHICORY.—Where winter salads are in demand this is an easily forced plant.

ENDIVE.—Lift and plant closely together in a cold frame and give abundance of air ; whenever possible remove the lights entirely and keep the plants free from damp. The same remarks apply to Lettuce.

PEAS AND BROAD BEANS.—Where autumn sowing is practised these will be got in during the month. Owing to the depredations of pheasants and rats it is impossible in my own instance.

THE HARDY FRUIT GARDEN.

There is a great deal of work that may be accomplished now in this department, and the sooner the work of planting and root-pruning can be put into practice the better chance will the trees have of forming new rootlets whilst the soil is fairly warm and getting established before

winter. Immediately the leaves show signs of ripening, transplanting may be done, and in the case of Peaches and Nectarines whilst the leaves are green, but if this is done under glass shade, from bright sun for a time, and frequent syringings overhead will be beneficial in any case when the trees will in all probability carry a crop of fruit accordingly the following spring. Avoid a free use of manures, which only causes an over vigorous growth at the expense of fruit. A good fertile soil is sufficient with a free use of lime rubble or lime, and especially where this agent is lacking in the natural soil. Especially is this necessary for all stone fruits. A sprinkling of wood-ashes and a dusting of basic slag will also prove helpful. When planting take out a hole considerably larger than the tree requires to allow ample space to thoroughly well firm and also to work round the tree. If drainage is necessary break up the bottom soil and place a good layer of broken brick or other suitable material in the bottom, and on this place some good turves, grass downwards. If there is a tendency for the tree to make taproots place a good strong slate immediately underneath the main stem to encourage surface rooting. When lifting trees carefully preserve all fibrous roots and cut away any that are too gross or damaged, always cutting from the under side in an upward slanting direction. If the roots are cut from the upper side downwards buds will be encouraged afterwards, causing considerable annoyance by sucker growths. Avoid planting too deeply, rather err on the other side, and allow for sinking, and keep the roots as near to the surface as possible, where they will obtain the benefits of the sun and air's warmth, and in low-lying positions especially finish off the planting by having the tree on a good mound. Small quantities of soil at the time, well firmed by the sole of the foot and not the heel, and laying out the roots carefully, will ensure a good firm growth, and finish off by flooding with water, and when this has settled apply a light mulch and just secure the tree lightly for a few days. Small trees of Peaches and Nectarines that are being grown on in reserve may be lifted and replanted if their growth is too excessive, after having shortened back the thickest roots. In any case replanting will be an advantage, as it will cause a freer formation of fibrous roots and bring the tree into better condition when it goes into its final position. See that wall trees of the above, and especially those growing under permanent copings, do not suffer for want of water. At no season of the year does a Peach border want to become thoroughly dry, an evil, I think, that is largely responsible for bud-dropping in

the spring. Continue to store Apples and Pears, and replant Raspberries and bush fruits. Avoid planting the former too closely, and especially when these are transferred to good kitchen garden ground. If in rows, plant five feet apart and allow at least eighteen inches between each plant. Gooseberries six feet between the rows and four to five between each bush, and Currants the same.

THE FLOWER GARDEN.

With an improvement in the weather during the early part of September the formal bedding wonderfully improved and made a good show. Much will depend upon the weather as to how long the display will last, but if it is to be followed by an arrangement for the spring it should be taken up this month, so as to allow of the plants getting established in their new quarters before bad weather sets in and the planting of bulbs not delayed. Very good effects may be produced in some beds, not suited for flowers, by planting small shrubs of evergreen appearance, in variety, such as the various Hollies, Box, Cupressus, Aucubas, &c. Any Hollies that need replanting should be done at once or left till spring, but all deciduous and evergreens may be dealt with this month, which will allow of them getting established before winter. Remove the stock of bedding Geraniums that has stood out of doors into some structure where they will not easily damp, and for that reason keep them as dry as possible, give abundance of air, and when water is required give a good soaking early and on a fine drying day.

Answers to Correspondents.

GRAPES.—The condition of the Grapes is that known as "shanking," from the stalks of the berries having "shanked" or shrivelled. This is generally attributed to defective conditions at the roots. Probably during the continuous rains in August the border became saturated, and consequently sour, thus affecting the root action. The remedy is to examine the border and correct any tendency to defective drainage. If necessary remove at least some of the bad soil and replace with fibry loam mixed with a fair quantity of old mortar rubble. If the roots are much below the surface raise as many of them as possible and encourage them to remain near the surface by top-dressing annually with chopped fibrous loam to which may be added a five-inch pottful of Vine manure to each barrow load. The work of draining should be attended to as soon as most of the leaves have fallen.

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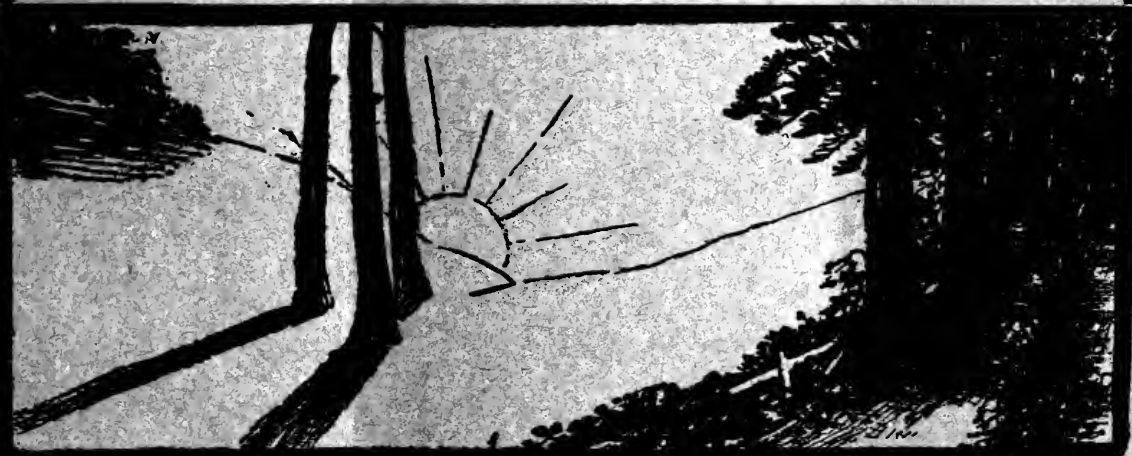
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Irish Gardening

Contents

	PAGE		PAGE
Bush Pear Culture	161	The Making of a Herbaceous Border .	172
Useful Apples for Irish Gardens (Illustrated)	162	Suburban and Allotment Gardens .	173
Some Good Conifers for Present Planting (Illustrated)	166	Allotment Observations	174
Notes	168	The Month's Work—	
The Eradication of Weeds	171	Midland and Northern Counties	174
		Southern and Western Counties	175
		Review	176



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ARBORICULTURE IN IRELAND

VOLUME XII
No. 141

NOVEMBER
1917

EDITOR—J. W. BESANT

Bush Pear Culture.

By D. McINTOSH, Danum Gardens, Rathgar, Co. Dublin.

To achieve success in the cultivation of the Pear there are three factors of primary importance to be considered—namely, the ideal aspect, good drainage, and a thorough preparation of the soil. In the choosing of an aspect, select a piece of land with a gradual slope facing towards the south. With regard to drainage it should be so arranged as to concentrate the water to one main outlet, which can be periodically inspected to ensure it is clear and in working order.

Thorough preparation of the soil can be accomplished in the following way:—Whether the soil be of a heavy or a light texture, it should be trenched at least to the depth of 18 inches. If the soil be heavy, mix in a good supply of well-decayed stable manure and a fair amount of lime rubble, wood ashes and road scrapings. If the soil be light, incorporate a sufficient quantity of heavy farmyard manure as the work of trenching proceeds. No attempt at trenching should be made while the soil remains in a wet and sticky condition, as this would be in all probability fatal to the welfare of the Pear. When the trenching operation has been completed, preferably during the month of October, young bush trees may be ordered from any reliable nurseryman. During the interval the trenched ground will be settling down, and by the first or second week in November the soil should be in a fit condition to plant. In straight lines, at a distance of 9 feet each way, make holes with a spade, 3 feet wide and 3 inches deep. Drive in a strong stake, 2 inches from the centre of the hole, to which affix the tree when planted, in order to make it secure against high winds. Before commencing to plant, trim off with a sharp knife all jagged and broken roots. At this operation, always cut downwards to encourage fibrous roots near the surface. Set

the plant in position against the stake. Spread out the lower roots equally, as far as possible, and cover with the finest of the soil to the depth of 2 inches. Over this spread out another layer of roots, again filling in with fine soil, and so on until the level of the ground is reached. Firm each layer of soil as the filling in proceeds. A thin coating of light litter spread around each tree will complete the planting operation.

Pruning and training of these young trees will be the next consideration. During February begin by cutting away all dead and broken shoots. Cut out all central growths with the object of keeping an open centre. This is very important if the best results are to be obtained. Near the base of the tree, encourage seven or eight shoots to grow out at an equal distance all round, say at 2 feet apart, training these upwards in a sort of cordon fashion. Each year shorten the leaders according to the vigour of the individual tree, until they reach a height of 10 or 12 feet. It may not be possible to force the desired number of shoots the first year, but eventually they will appear by careful attention to pruning. By adopting this form of bush training, the fruits borne on the branches receive an abundant supply of light and air, two very essential elements for imparting colour and flavour to the fruits. As a passing remark, I may mention that many of our bush trees at Danum this year produced enormous crops of splendid fruit, in particular Clapp's Favourite, Conference and Durondeau, each tree making an average of 500 typical fruits. The trees are about twelve years old, and have been pruned and trained in the way I have been trying to describe above. Generally speaking, the pruning of the Pear tree may be performed any time from the beginning of November to the end of February. Shorten all



PICEA PUNGENS GLAUCA

(See page 167).

side growths to within two buds of the base of the current year's wood and cut clean out all surplus spurs. When cutting back the leading shoot, always cut just above a wood bud looking outwards, so that the branches will tend to grow upwards and outwards in a gradual slanting position. The surface soil between the trees should be stirred with a hoe at regular intervals and kept free of weeds. A mulch of farmyard manure laid on in June is beneficial to the trees in so much that it conserves moisture and acts as a stimulant, just at a time when the fruits are commencing to swell. At this stage, if the crop be heavy, thin out all deformed and badly placed fruits. Keep a sharp look out for the caterpillar, which, if left unchecked, will eat and destroy the foliage and very often many of the fruits. When the fruits are swelling fast and the crop is a heavy one, farmyard manure, diluted at the rate of one-third of liquid to two-thirds of water, should be applied to the roots of the trees several times during the growing season. These applications, not only assist the swelling of the fruits, but also have the effect of ensuring good fruit buds for the following year. Trees that are producing wood,

too robust and vigorous, at the expense of fruit buds, must be dealt with by means of root-pruning. This operation is best performed at the end of October, just as the leaves are beginning to fall. It is advisable to deal with one side of the tree only until it is seen if it has brought about the desired effect. With a spade, take out a semi-circle trench, 3 feet from the stem. Then, with a fork work out some of the soil from among the roots. Should a tap-root be found underneath, cut it clean through by means of a spade or hand-saw. Prune off all damaged roots, always bearing in mind to cut downwards. By so doing, fibrous roots are induced to emit upwards, thereby keeping them near the surface, which is an item of paramount importance to the well-being of the Pear. Fill in the trench with the old soil, treading firmly as the work of filling in proceeds. Should the operated tree show any tendency to loosen by the effect of high winds, drive in a strong stake and tie securely. If the above root-pruning does not bring about the desired result, the other side of the tree should be root-pruned the following autumn.

For bush culture the following are a list of the best varieties in their order of ripening:—Clapp's Favourite, William's B. Chétien, Mme. Treyve, Louise B. de Jersey, B. Superfin, B. Hardy, Fondante D'Automne, Triomphe de Vienne, Conference, Durondeau, Conseilleur de la Cœur, Doyenne de Comice, Glout Morceau, Winter Nelis, and Josephine de Malines.

Two of the best stewing pears are Catilla and Uvdale's St. Germain.

Useful Apples for Irish Gardens.

WITHIN recent years much has been accomplished in the improvement and extension of fruit growing in Ireland, especially of Apples, by both private and commercial growers. Guided by statistics published by the Department of Agriculture for Ireland, I note that there is an increase of 1,457 acres under fruit as compared with the area under fruit in 1916. It may reasonably be inferred that a preponderance of this increased area has been devoted to apples, this being a pleasing indication of the soundness of advice frequently put forward by the Horticultural Press, the Department of Agriculture, &c., for the increased production of Apples, though the southern counties, with their superior soil and climatic conditions, have not shared in the increase to the extent that might be expected.

Considering the undisputed high qualifica-

tions of the Apple crop from both a commercial point of view and as a most valuable dietetic and food product, there seems to be little need for extolling the virtues of the Apple (whatever may be said of it in the Garden of old, when its charms led to such a dreadful end), for as "Old as the hills" are such proverbs as "Eat an apple going to bed, and the doctors may beg for bread" (this meant to convey an idea of the dietetic value of Apples, but with no notion that such dire results would befall the doctors). In those strenuous times Apples may well be brought to the fore as a valuable adjunct to the food supply, and used more frequently in various forms of cookery. For instance: stewed Apples may be eaten with bread through the winter months, instead of that dear and scarce commodity, "good sound butter," or at any rate to eke out the supply of butter; stewed Apples with rice, to reduce the consumption of bread, &c., &c (selecting such varieties of Apples as are palatable with little sugar used in the cookery); of course increased demand should go hand in hand with increased supply, so that any means for encouraging more general and increased consumption of the fruit is quite pardonable.

In the present world-wide turmoil, as is generally well known, the import of Apples has been prohibited, and there is much probability that this restriction may be very prolonged.

This would seem to be an incentive to secure for Irish-grown fruit a more extensive hold on the Apple trade throughout Ireland as well as a profitable share in cross-Channel demands. In this matter some cardinal aims to be achieved are such as the increased production of first-class fruits in quantity, of varieties well known in the fruit trade, large size in cooking varieties, and in dessert varieties a good-sized and clean well-coloured fruit is absolutely essential to secure the best financial results. Grow quantities of a limited number of varieties that may be relied on to provide a succession throughout the season, so that an unbroken supply is at hand to meet the requirements of markets and dealers; this latter advice applies specially to dessert varieties, which now realise more profitable prices than cooking Apples. In private gardens there is a pronounced tendency to grow a great number of varieties (and in recent years there is a fascinating list of varieties put forward by nurserymen to select from), and I should say quite a pardonable desire. Many beautiful and useful varieties may be grown for home consumption which are, however, not well suited for market purposes. A fruit room filled with well grown and highly-coloured fruits constitutes quite a miniature fruit show, and is useful in many ways, and stimulative, as with public exhibitions or fruit shows, which constitute such admirable object lessons in fruit



A WELL-PRUNED APPLE TREE.

culture; and though for a time in abeyance, their revival, after these most lamentable war conditions have passed away, is most probable, it behoves both private and market growers to keep up varieties to meet the practical and friendly rivalry created by such exhibitions.

In the appended list of varieties I have only named such as are well suited in all ways for general cultivation, and such as may be grown satisfactorily with the minimum amount of labour as entailed by proper cultivation in all cases. I have purposely omitted some well-known varieties owing to their extreme susceptibility to attacks of "Apple scab" and canker, although three varieties named (*i.e.*, Wellington, Ribston Pippin, Gascoyne's Scarlet) come, in the opinion of many, under this category. The first-named two are very desirable varieties, and practically I find that with a little extra attention in the way of spraying and rooting conditions, both varieties will produce good crops of clean and thoroughly satisfactory fruit. Gascoyne's Scarlet has been discarded by some good cultivators, though its splendid appearance and good qualities render it a very desirable Apple. It is an excellent cooking and exhibition fruit; it succeeds admirably as a bush tree on Paradise stock in light, warm, well-drained soils. In this locality it does well as a cordon on Paradise stock. There is no great amount of special preparation needed for the planting of Apple trees, but conditions essential to success are a naturally well-drained soil or artificially drained areas (stagnant water and heavy retentive subsoils under shallow soils are fatal obstacles); a good fertile soil, a situation well open to sun, but with a reasonable amount of shelter against westerly or prevailing high winds, which, if not guarded against, make sad havoc amongst ripening fruits. Where a situation is good, but soil not up to desired standard, it may be brought into suitable condition by casting in such materials as are available, and deemed suitable. Poor, shallow soils, or land inclined to be boggy, may have added new loam, decayed leaf heaps, ashes from fire heaps, old road scrapings, of which there is usually abundant deposits on country road sides, decayed rubbish heaps, sandy or shell deposits from the shores of tidal rivers, any or all of these materials make useful additions to poor soils, and to which a limited quantity of well decayed farmyard manure may be added as conditions seem to demand. If soils are deficient of lime, a little unslaked lime may be applied biennially, allowing the lime to slake on the land and be dug or ploughed in during winter.

For garden culture, bush trees on Paradise

stocks are most suitable for planting. Horizontal trained trees and cordons in lines by walk sides are highly ornamental and useful, maturing under good cultivation plentiful crops of superior and highly finished fruits. Any of these may now be planted in ordinarily good garden soil, or sites may now be prepared by digging or trenching, and the trees planted from end of January to middle of March. All classes of trees are in recent years most reasonably priced, ranging from maidens, at 10d. or 1s. each, up to fruiting and specimen trees, at 7s. 6d. to 10s. each. Maidens and two or three year old trees are principally used for planting large areas or orchards; what are called fruiting trees are most suitable for garden planting, as these may be allowed to mature a moderate crop of fruit the second summer after planting; whereas with young trees, three or four years must elapse before a crop of fruit may be gathered. As these trees advance in years, and according to the yield of fruit matured, an annual dressing of good farmyard manure should be lightly dug in after the pruning is completed. This is my practice, and with the addition of a sprinkling of basic slag spread in January under the trees at the rate of 4 to 6 oz. of slag to the square yard. The trees should not be planted while the ground is unduly wet, as the trampling needed to make the roots sufficiently firm causes such soil to become over hardened, and impervious to proper action of sun and air. A guide to proper condition is when the soil may be trampled without sticking to the feet. Before planting shorten coarse roots, and cut away jagged ends of roots, and plant the trees at same depth as they have been grown in nursery. This is indicated by earth mark on stems. Stake the trees as planted, if there is any probability of their being loosened in ground. About the middle of March these trees should be pruned. Trees provided with a good proportion of robust growths should have the side shoots cut back to five or six eyes and the leading growths shortened to about half their length (not more), cutting the shoot at a bud looking outwards. Bushes of varieties naturally making less robust growth may be pruned a little more severely; horizontal trained trees and cordons may be similarly pruned, but reduce the leading shoots to about a third of their length. If, after being two or three years planted, any trees are growing a great profusion of over-robust growths and making few or no fruit buds, they should be lifted to check this over-luxuriant growth—that is, proceed to dig a trench about 2 or 2½ feet from stem all round the tree to the depth of the roots, saving small fibry roots, but cut

away any strong fibreless roots; then with a garden fork remove the ball of earth, working towards the stem, until the ball is sufficiently reduced, and all roots severed to allow of the tree being taken out of its bed. Shorten severely strong fibreless roots that have a tendency to grow straight downwards; those growing horizontally need not be cut back so hard. Clean all jagged ends of roots, level and well trample the site for the tree, and replant very firmly. Spread out all roots evenly, and with a slight inclination upwards. These trees so treated must be staked and subsequently pruned, as advised for new planted trees. This operation should be carried out as soon as possible after leaves show signs of falling. Some varieties—for instance, Bramley's Seedling, Scarlet Bramley, Charles Ross, Newton Wonder, Norfolk Beauty—do not fruit freely until they attain three or four years' more growth. Such varieties need not be lifted unless the growth is particularly gross. Hard and fast rules for future pruning can hardly be presented here. The vigour and habits of different varieties must be a guide to subsequent pruning. Infertility is often brought about by too severe pruning: in such cases the method of pruning must be altered, and over-luxuriant growth checked by lifting young trees, up to, say, ten or twelve years' old, and root pruning of older trees. Roots of trees having penetrated to a bad subsoil will cause the same failing; in these cases the above remedy must also be applied. The foregoing remarks as to preparation of ground may be similarly applied in the formation of orchards. A field, or part of a field, that has been under good cultivation for two or three years growing potatoes, &c., may forthwith be cleaned and levelled, and the trees planted at once; or a good, sound plot of grazing land may be deeply ploughed and planted in the spring. Orchard trees are, of course, planted in lines, at a distance apart that must be regulated by the kind of trees planted, and subsequent intended cultivation of land under and between trees. Orchards may be profitably formed of bush trees on Paradise stocks, though more frequently standard or half standard trees on Crab stocks are employed; but whether it is intended to ultimately form a grass orchard or to continue cropping between trees with small fruits or farm and garden crops, it is most important to future welfare of trees that a space 4 or 5 feet in diameter round each tree should be kept free from weeds and regularly cultivated with an annual application of farmyard or chemical manure after trees commence to mature crops of fruit. If young orchard trees are left to

become overgrown with weeds and rubbish, the result is inevitably stunted, diseased, and profitless trees.

The matter of grass or cultivated orchards is a debateable subject. Many affirm that the Apples in grass orchards compare favourably or equal in size to those from cultivated orchards. My experience is that only on exceptionally favoured soils grass orchard Apples hold their own with cultivated orchards, except in the matter of fine colouring, which constitutes a strong point in dessert apples. It is much less trouble to maintain the trees in grass in a good fruiting condition by annual applications of liquid manure drained from farm buildings, &c.: a good mulching of farmyard manure, or some well recognised artificial manure, than to restore them after being run down, and producing only second or third-rate fruit.

For orchards I would recommend the following varieties, named in the order of their fitness for market, &c.:—Dessert varieties—Mr. Gladstone, Irish Peach, Beauty of Bath, Lady Sudeley, Worcester Pearmain, Jas. Grieve, Ben's Red, Wealthy, Chas. Ross, Ribston Pippin, Cox's Orange Pippin, Allington Pippin, Blenheim Orange, Rival, Christmas, Pearmain, Belle de Boskoop, Braddick's Nonpareil, Barmack Beauty, King's Acre Pippin, Duke of Devonshire. Culinary Apples—Early Victoria, Grenadier, Emperor Alexander, Peasgood's Nonsuch, Norfolk Beauty, Stirling Castle, The Queen, Lord Derby, Royal Jubilee, Beauty of Kent, Bismarck, Bramley's Seedling, Hambling's Seedling, Newton Wonder, Annie Elizabeth, Lane's Prince Albert, Alfriston, Wellington, Encore. This last-named variety is a comparatively new variety, but I find it a free cropper, large, and a very good keeper. We have had it here (stored under ordinary conditions) quite firm and fresh in June, almost to the time when Early Victoria is available, to commence the new season. For ordinary garden culture the following varieties are all good, desirable kind:

Dessert varieties, to the preceding list add Langley Pippin, Coronation, Mother (American), St. Everard, Beauman's Reinette, Adam's Pearmain, Gascoyne's Scarlet, King of Tomkins Co., The Houblon.

To the culinary Apples—Lord Grosvenor, Red Victoria, Loddington, Hoary Morning, Hector MacDonald, Lady Hemicker, Mere de Menage, Baron Wolsley, Edward the Seventh, Rev. W. Wilks. The last-named Apple is spoken well of as a promising market Apple by various authorities, but I consider it too large and soft for market purposes, as also that fine apple, Baron Wolsley.

Some Good Conifers for Present Planting.

ARBORICULTURE is a subject closely akin to—in fact, hardly to be separated from—horticulture, and, now that the planting season has come round once more, space may be found in IRISH GARDENING for a few notes on some of the worthy Conifers that, I am sure, a good many people must be anxious to plant; and in order not to take up too much space in this number, I shall confine my remarks to members of the two great families—Firs (abies) and Spruces (Picea).

Many varieties of both have proved themselves, in different localities, suitable—and desirable—in our Irish soil and climate, more especially in the maritime counties from north-east to south-west.

Of course, there are places where, from its basic formation, such as—for instance—in a limestone district, or one where there is a superabundance of mineral matter—iron, or, again, heavy clay in much depth, that the soil is not so suitable, and one can hardly expect to find such fine specimens as may be seen growing on a naturally cool and well drained soil, made rich at the time of planting by the addition of suitable material.

I think the ideal soil for most, or all, of the great family *Coniferae* is that with a soft gravel subsoil, beneath which again will be found the granite or broken whinstone rock.

Such a soil is, in nearly all cases, naturally drained, cool and moist in summer, and keeps warm, comparatively, in winter, especially when a liberal supply of peat mould has been added to the soil at planting time.

On other soils, not so well adapted to tree growth, one ought to try by artificial means to get it as near to the ideal as possible.

In planting large growing trees that it is desired will grow into fine specimens, furnished with rich, luxuriant foliage from the ground upwards, better success might sometimes be attained if the planter would take a little more time and trouble—first in selecting the site for the tree and afterwards in the careful planting of the same.

First, then, as to site, let me say here that in all cases some shelter (but not at too close quarters) from the storms and cold cutting winds of winter will be found beneficial.

I know of cases where trees have come safely through a spell of severe frost only to get cut back and injured by the withering east winds of early spring.

Consider for a minute the size the tree is likely to grow to in course of time, perhaps sixty feet in height, with a spread of branches that may be anything from ten to thirty feet through, according to variety. Therefore do not select a site too near to a wall, a walk, in the line of a good view, or to another good tree or shrub, where, in the end, both must suffer by overgrowing each other.

When a satisfactory position has been selected, no pains should be spared to make operation of planting as thorough and complete as possible.

Such trees, it is hoped, are going to mark the time of years, and the work of the planter, perhaps long after he has gone beyond the ken of such things. And it is surely a great pleasure to look on the good results of work well done, as, from year to year, the little plant develops into a noble tree.

In proceeding, make a good large hole, according to the size of the ball of earth and roots of the plant—deep and wide enough to give room to work in plenty of good rich soil as the work goes on. Coarse leaf soil, peat mould, and old mushroom dung in equal quantities is a capital and lasting mixture, along with the good soil that comes out in digging the hole. If the soil is shallow it is well to pick and shovel out some of the subsoil, placing a good layer, say six inches to a foot in depth, of the prepared soil in the bottom of the hole, then place in the ball of the plant, keeping it at about the same depth, or a few inches deeper than it had been in its previous position in the nursery, or elsewhere.

There ought to be a clear space of a foot and a half, or two feet, all around for filling up with the good soil, treading all in firmly as the filling up proceeds. Of course, care will be taken to see that the plant is perfectly upright in position, and, if the branches, as often happens, are lighter and more thinly grown on one side of the plant than another, keep the lightest side towards the sun—that is, the south.

I think it is a mistake to put small plants out in permanent positions. It is better to grow them on in nursery quarters for a year or two until they are four or five feet high and have been carefully transplanted once or twice.

Having said so much about planting, I should like to mention some of those Firs and Spruces that have been found to do well in Ireland.

Abies Webbiana, the Indian Silver Fir, in shelter from winds, will grow to about forty feet high, perhaps more, with a fine spread of branches; the foliage is large, of a lovely dark green colour, and when the tree bears cones they are very handsome; the bark on the trunk of

this tree is different in appearance to that of any other fir I know, being coarse and rugged.

A. homolepis, Japan, introduced in 1870, does not appear to be a tall growing tree. I know it as a plant twenty-five feet high, and with a great spread of branches; keeps its lower branches well, and in colour like *A. Webbiana*: the leaves are not so long; bears cones in profusion, that exude a quantity of resinous matter.

Abies firma, another Japanese tree, and one of our finest Silver Firs, especially in mild localities, although I think it will prove hardier than was expected in former years: it puts on good growth yearly, and will probably grow as high as our common Silver Fir (*A. pectinata*): the leaves are sharp pointed, light green in colour, and the spread of branches is not great.

Abies concolor, and its varieties—*Lowiana*, *Waltzii* (?) and *violacea*—are amongst the most useful and ornamental of the Firs, come from Sierra Nevada mountains: beautiful in colour, and with a branch spread of about twenty-five feet. *Abies Waltzii* is something of a rarity, but very beautiful: the leaves, almost white in colour, are apt to get scorched by the summer suns, therefore it ought to have some shade on the sunniest side.

Abies grandis, also from the States of America, is a very vigorous growing sort, great in height and spread of branches, requires plenty of space to develop, and there is no doubt as to its hardiness; it may become in time a valuable forest tree.

A. bracteata is the most remarkable of all the Silver Firs, with massive deep green foliage, sharply pointed, and a noble spread of branches: it is somewhat tender, especially in a young state. Hard to procure at present, but well worth a trial.

Other species that occur to my mind are *A. Veitchii*, *A. Mariesii*, *A. magnifica*, *A. amabilis*, *A. nobilis*, and *A. Nordmanniana*, which is a good thriving tree, especially in peaty soils: but all the foregoing are reliable and may safely be planted in most parts of Ireland, and will well reward any trouble taken to give them a fair start off.

Perhaps I am encroaching on space, so will conclude with a few words on some of the varieties of Spruces (*Picea*).

Of these there are many beautiful and useful sorts, from the pretty little freak *Picea excelsa* var. *Clanbrasiliana* that never grows more than five feet high but spreads over the ground considerably, and is essentially a plant for the rock garden, to the tall *P. sitchensis*: but, generally, the various species of *Picea* do not grow to such great sizes as those of the *Abies* family, and can be accommodated on a smaller space of ground,

Taking the largest growing sorts first, we have *P. ajanensis*, often confused with *P. Alecockiana*: both will grow to a considerable height and the branches spread over a diameter of thirty feet, the silvery green colour of the foliage is pretty and distinct from that of other Conifers.

Picea morinda (*Smithiana*), the Indian Spruce, is a tree that is the better for a good deal of shelter from winds; heavily branched, drooping in habit, dark green in colour, it makes a striking contrast in association with the lighter colours of the others in the family.

P. orientalis, and its golden coloured variety, *aurea*, are beautiful compact plants, and well worth planting in the best of positions, and with them may be grown the fine blue-green coloured sorts *P. pungens glauca* and *Kosteriana*.

Picea polita is one of the most distinct of the Japanese Spruces: light green in colour: branches close growing and rigid: the leaves are short, stiff and prickly. One rarely sees a good specimen of this species, it seems to have the misfortune of continually losing its leading growth.

Three others I will group together as being more or less related, although belonging to different parts of the world, they are—*P. spinulosa*, *P. Breweriana*, and *P. omorica*. These belong to what is known as the flat-leaved or *omorica* group, and have certain botanical characteristics in common.

Picea spinulosa (*syn. morindoides*) is an attractive plant with gracefully drooping branches, medium in spread: the leaves light green in colour. This plant is a Himalayan species.

From what little is known of *P. Breweriana* the same brief description would apply, although the plant belongs to the Siskiyou Mountains of Northern California, and is most difficult to obtain at present.

Picea omorica, the Servian Spruce, is, in my experience, not so fast growing as *P. spinulosa*, more compact in habit, sturdier in every way, and has not the same graceful drooping habit, nevertheless it is a fine species and well worth planting.

These last two varieties have shown a disposition to bear fertile seeds at an early age, and it will be worth the while of anyone who has got plants of them, to secure the cones in order that plants may be available later on, for surely there is coming a time when planting of trees will be carried on in this country to a greater extent than heretofore.

In general practice it will be found that the Spruces thrive in wet heavy soils better than the Silver Firs.

Notes.

Intercropping.

IN an article dealing with intercropping in Belgium *The Journal of the Board of Agriculture*



RHODODENDRON BULLATUM

Photographed in China by Mr. George Forrest.

for September gives the following notes relating to gardens:—

In the market-garden districts of Malines and Louvain intercropping is extensively practised, especially where the soils are light enough not to pack hard with treading. Typical associations are given below:—

1. Early cabbage or cauliflower intersown with spinach or cabbage lettuce, or with radishes and lettuce.
2. Carrots interplanted with cabbage, lettuce, or scorzonera.
3. Early potatoes intersown with radishes, which are cropped before the potatoes are earthed up.
4. Late cabbage interplanted with an early variety which is marketed before the main crop attains full size.

In a general way it may be said that all vegetables which occupy the soil for some time are intercropped with spinach, early carrots, radishes, chervil or lettuce.

Where early peas are grown in beds carrots are sown among the peas, and occupy the ground after the latter crop has been harvested. Peas are often planted in every third or fourth row of a potato crop; a single pea of a dwarf variety is pressed down in the centre of each potato plant; the pea grows up with the potato, and when the pods are ripe it is pulled up bodily. The practice, however, cannot be recommended with green peas, as too much treading of the soil then takes place in picking the crop. Cabbages or Brussels sprouts are sometimes planted between all but the very late varieties of potatoes. They are planted in the furrows after the potatoes have been earthed up and do not in any way interfere with the growth of the potatoes.

Random Notes.

I THINK I wrote you last year about the attraction *Eupatorium Weinmannianum* has for butterflies. I have again been struck by this. Last Saturday, though it was not a very bright day, on one small shrub I counted at least 18 Red Admirals. The Peacocks were plentiful a little earlier, and *Buddleia variabilis* seemed to be their special fancy.

Montbretia Prometheus has been very fine this year, the flowers being well formed and of good colour. A mass of it—some 10 or 12 by 4 ft.—in a sunny position has been and is a feast for the eyes. Another plant that has done exceptionally well this year is *Primula capitata*.

I am afraid I never appreciated *Potentilla Friedrichseni* properly till this year, partly because it was wrongly placed before. Last autumn a plant of it was moved into an open sunny position in sandy soil, and this year we were rewarded with profuse flowers for about three months. The soft yellow flowers are very pleasing, and though not so large or such a good colour as those of *Potentilla rigidus*, I am inclined to think that it is the best of the shrubby *Potentillas* on account of its freedom and length of flowering.

Euonymus latifolius is resplendent with a large crop of its brilliant red seed vessels. The foliage also colours well. Altogether I think it is a very desirable shrub and one that should be more widely grown. Words of mine cannot do justice to *Rosa Moyesii*. In either flower or fruit it is magnificent, but I should like to put in a word for *Rosa setipoda* for autumn effect.

In flower it is not particularly attractive, but the bright vermilion seed vessels hanging in bunches from the arching branches are very beautiful and attractive.

Can you explain why the male plants of *Muttalia cerasiformis* should lose their leaves very much earlier than the female ones?

Sept. 24, 1917.

E. H. WALPOLE.

Vitis Inconstans var. *Lowi*.

THIS is an elegant and beautiful variety of the Vine, better known in gardens as *Ampelopsis Veitchii*. It is of slenderer growth than the type, with smaller and more divided leaves. It forms a delightful wall plant and colours quite as well as the parent. Like the type, it is self-supporting, and is useful for covering unsightly walls and fronts of houses.

Funkia lancifolia tardiflora.

AGAIN this pretty plant has demonstrated its usefulness for late autumn flowering. In the early days of October, mid rain and tempest, it bravely pushed up its spikes of lilac coloured flowers, which, though not brilliant, at once attract attention. It is useful for the rock garden at this season and is quite suitable, being not more than a foot high when in flower. Ordinary garden soil is all it wants, and it is effective in the front of the herbaceous border.

Lonicera pileata.

UNTIL the present season this Chinese Honey-suckle has appeared to be a shrub of average merit. The absence of late spring frosts this

year to damage the flowers has shown it to be a most interesting and attractive bush in fruit. The twigs are at present clothed with fruits the size of Currants, which, if lying on a table, might easily be mistaken for amethyst beads. With the sun shining on the bushes the beauty of the glistening, transparent fruits can better be imagined than described.

In habit *L. pileata* is a low-spreading evergreen bush, or partially evergreen in severe winters. Among the small, dark-green leaves the yellowish-white flowers are noticeable during the month of May. It is, perhaps, seen to the best advantage growing against a wall or fence of moderate height.

Mr. Augustine Henry collected specimens in China, but for its introduction to our gardens we are indebted to Mr. E. H. Wilson, he having sent home seeds to Messrs. James Veitch in 1900.

A. O.

A Neat Privet.

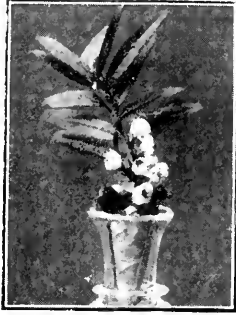
LIGUSTRUM PRATTH, introduced from China some years ago, promises to be a useful shrub in gardens. Of neat habit and nearly evergreen, it is pleasing in appearance at all times. In open positions during severe weather it sheds some of its leaves, but is never wholly bare. The leaves are small, probably not more than half an inch long and a little less in width, densely borne on the branches, giving the shrub a compact, well-furnished appearance. The flowers are interesting, being, as usual in the genus, white borne in numerous short panicles. It has the look of making a useful hedge plant, and, no doubt, nurserymen are holding stock plants against the time when it will be asked for after the war. It is a shrub which ought to be popular in time.



FRUIT-ROOM AT ALDENHAM.

Gaultheria hispida.

THIS interesting and uncommon shrub is another of the rare plants grown by Sir John Ross at Rostrevor. The specimen at Rostrevor is now about 2 feet high, and is described as a very desirable species, with conspicuous white berries.



GAULTHERIA HISPIDA.
Photo by R. M. Pollock.

The following particulars regarding it are taken from the Flora of N. S. Wales:—"An erect, spreading shrub, finally tall, usually hispid, with somewhat reddish hairs. Leaves oblong to narrow, lanceolate, serrate. Racemes usually shorter than the leaves; corolla white, about two lines long. Fruiting calyx depressed globular, white—found on the dividing range at high elevations from New England to Victoria."

The Hardy *Cistuses*.

To those interested in the cultivation of the Rock Roses the behaviour of the genus at Kew during last winter, compared with the Glasnevin results, published in the last issue of IRISH GARDENING, at page 151, may prove of value. In common with Glasnevin, *Cistus Cyprius* and *C. laurifolius* stood unharmed, while to these must be added the hybrid *C. corbariensis* (*C. populifolius* × *C. salvifolius*). The other Glasnevin survival, *C. ladaniferus*, was killed at Kew. There are, however, four others which, though badly shaken, survived, and have now, thanks to the favourable moist weather of the past summer, made excellent growth. These are *C. populifolius*, *C. hirsutus*, *C. monspeliensis*, and *C. Loreti*, a beautiful hybrid (*C. ladaniferus* × *C. monspeliensis*).
A. O.

Storing Fruit.

THIS is a matter of prime importance and deserving of the closest study. A well designed structure is a necessity for the proper preservation of fruit for the longest possible period. Many makeshift buildings are utilised, but

unless the essential conditions of atmosphere and temperature are under control the results are disastrous. Apples and Pears are the chief fruits stored in quantity for winter and spring use, and the former especially might be available in much larger quantities were proper storing better understood. The ideal structure is one in which a temperature of from 45–50 degrees can be maintained. Ventilation is necessary to preserve a buoyant atmosphere, and the ventilators should be arranged as near the roof as possible, say one at each end, so as to cause a circulation of fresh air without having an actual draught playing round the fruit. The structure may be built of wood and thatched with heather or reeds. The sides are often made of match boarding and are also thatched, but it is quite possible that reinforced concrete will be largely used in the future, now that the need for conserving home produce is better realised. Concrete has many advantages in its comparatively easy manipulation and in its lasting properties. Inside shelves of convenient width—say 4 feet—are easily arranged, one above the other, at intervals of 18 inches. They are made generally of 3 inch battens with a space of half-an-inch between them. On these the fruit is laid in single layers and frequently examined for any signs of decay. During summer the fruit room is useful for keeping soft fruits which are ripening faster than they can be used—*i.e.*, Peaches, Nectarines, Apricots, Plums, Figs, Melons and early varieties of Apples and Pears.

In smaller gardens where a fruit room would be too large, Apples may be kept for a long time in barrels, the Apples being packed in peat mould. The mould must be perfectly dry and reduced to a powder. Place a layer of peat mould in the bottom of the barrel and then a single layer of Apples; next another layer of peat, working it well in between the fruits and placing sufficient over them to prevent the next layer from pressing down on the first. In this way a barrel may be filled with Apples, finishing off with a good layer of peat and pressing the whole firm. Needless to say every fruit should be thoroughly sound when placed in the barrel, and they should not be stored in the barrel straight from the tree, but allowed to sweat for a fortnight. Do not wipe the fruits before storing, as this removes the waxy bloom, which itself is a factor in preserving the fruit.

By now all fruits will be gathered, and it is to be hoped that every effort will be made to store all the late keeping varieties for use in winter and spring, whether grown commercially or in private gardens.

The Eradication of Weeds.

By JOHN ADAMS, M.A., Assistant Dominion Botanist; late of the Royal College of Science, Dublin.

ACCORDING to their manner of growth, weeds may be grouped under three heads:—

1. **ANNUAL WEEDS.**—These complete their whole life-history in one year or less. The seed germinates sometimes in the fall, but more often in spring, the plant grows rapidly, produces flowers, ripens and scatters its seeds, and then dies before winter. Wild mustard and wild oats are annuals.

2. **BIENNIAL WEEDS.**—These during the first season of growth produce a tuft of leaves close to the surface of the ground; during the second season a tall stem is produced which bears flowers and ripens seeds, and then the whole plant dies. The life-history is thus comprised inside two years. Biennial wormwood and burdock are examples.

3. **PERENNIAL WEEDS.**—These produce flowers and seeds, but after ripening the seeds only those parts of the plant above ground die down, while the underground parts live on for many years. Three types:—

(a) *Spot-bound.*—Weeds of this class do not spread readily in the ground beyond the spot where they first take root. Their seeds may, of course, be distributed over a wide area. Examples are dock and dandelion.

(b) *Creeping on the surface.*—The parent plant sends out runners in all directions along the surface of the ground, which eventually take root. Examples are silverweed and orange hawkweed.

(c) *Creeping below the surface.*—The parent plant sends out shoots or, in some cases, roots, which travel horizontally at a considerable depth below the surface of the ground. New shoots grow up from these above the surface of the soil and eventually become independent plants. Likewise, a small piece of the underground shoot an inch or two long is capable of producing a new plant. Field bindweed and Canada thistle are examples.

HOW WEEDS SUREAD.—Weeds may gain entrance to the farm or, if already there, may be dispersed over a wider area in one of the following ways:—

1. *As impurities in the seed sown.*—Most samples of agricultural seeds contain weed seeds in greater or less amount, which are sown with the useful seeds and thus the weeds may, quite unknown to the farmer, gain an entrance on to his land. The seed sown should be absolutely free from weeds of all kinds—a condition of things which is seldom realized.

2. *By the agency of threshing machines.*—The threshing machine should be thoroughly cleaned before it is allowed to begin operations on the farm.

3. *In stable manure and feeding stuffs.*—Hay and feeding stuffs often contain weed seeds, some of which are liable to find their way into the manure heap and eventually on to the land.

4. *By the action of wind.*—Many seeds, such as those of dandelion and thistle, are furnished with a tuft of hair which enables them to float in the air for long distances. In other cases the seeds

or even the whole plant may be blown over the frozen surface of the snow.

5. *By the agency of animals.*—The seeds or adjacent parts of some plants, such as blue bur and burdock, are provided with hooks by means of which they become attached to the wool of sheep or the clothing of workers on the farm and in this way may be carried into fields where formerly they did not exist.

6. *By cultivation.*—In some plants, especially those with creeping, underground stems, the broken pieces may be carried all over the field by farm implements and thus dispersed over a much wider area than the parent plants originally occupied.

METHODS OF DESTROYING WEEDS.—1. *By destroying the weed seeds already in the soil.*—

Where the ground has been badly polluted with weed seeds through neglect in former years the surface should be disturbed to a depth of a few inches and the seeds encouraged to germinate either after harvest or in spring. If the land is then plowed deeply the seedlings will be buried and the fresh supply of weed seeds brought up should be encouraged to grow in the same manner and should then be destroyed. A hoed crop should be planted and the spaces between the rows ought to be cultivated regularly throughout the season. When the ground has been badly polluted with weed seeds, some of them may lie dormant for several years and germinate when the soil is again disturbed.

2. *By preventing them from ripening seeds.*—The formation of seeds can be prevented in various ways, such as mowing several times during the season, or cutting the roots with a hoe or spade, or frequent cultivation of the land by horse labour, or by pasturing the ground closely with sheep. Annuals and biennials will eventually die out if the production of seeds is prevented.

3. *By frequent cultivation and destruction of the green parts as often as they appear.*—Prevention of seed-formation will serve somewhat to check the spread of perennial plants, but as they can live for many years, and even continue to occupy new ground by the growth of underground shoots, &c., some more thorough methods are required to get rid of them. The implements employed for this purpose should be such as will loosen the soil to such an extent that the weeds can be readily pulled out and collected into heaps, after which they should be burnt when dry. It is very important that the underground parts of such weeds as field bindweed should not be broken into small pieces difficult to collect and liable to be scattered over a wider area. But, however carefully the work of collecting and burning may be done, some of the weeds are sure to be left in the soil, and, if undisturbed, will grow again. Consequently ground that is badly infested with such weeds will require to have the surface disturbed by frequent cultivation. This can only be done if the land is left without a crop (summer-fallowed) or bears a crop of such a nature that it can be planted in rows with sufficient space between the rows to admit of ready cultivation without injury to the plants. The cultivation should be done sufficiently often to destroy all green parts as quickly as they appear and the implements used should be of such a nature that they will cut all underground stems and roots in the area covered by them

without letting any escape. One of the weed-knife type of implements should be used. The underground parts of a plant are nourished by the green parts above ground, and if the green stems and leaves are destroyed as quickly as they appear the parts below the surface will be starved out and the whole plant will eventually die. This is the only way to eradicate finally such weeds as Canada thistle and field bindweed.

4. *By the use of another crop.*—A vigorous growth of some other crop such as alfalfa tends to crowd out some kinds of weeds, and the cutting of the crop several times during the season prevents the weed from ripening its seeds.

5. *By excluding sunlight.*—This can be done by the use of building paper, or a thick layer of straw or other suitable material, and can only be practised on small areas that are entirely overrun by some very troublesome weed.

6. *By spraying with chemical solutions.*—The substances most commonly used for killing weeds are iron sulphate (copperas or green vitriol), copper sulphate (blue vitriol), common salt and sodium arsenite. Iron sulphate can be used to destroy wild mustard when growing in a grain crop without doing any material damage to the crop. For this purpose a 20 per cent. solution is employed and 100 pounds of the sulphate dissolved in 50 gallons of water will spray one acre. Copper sulphate can be used for the same purpose, a two per cent. solution being employed (10 pounds in 50 gallons of water per acre). Both these sulphates are poisonous. Sodium arsenite if applied at the rate of 2 pounds to 50 gallons of water will blacken the leaves of Canada thistle. It is very poisonous, and cannot safely be applied to the thistles when growing among hay or other crop as it will damage the useful plants as well.

Common salt is a useful weed killer to employ in the case of weeds growing on paths or roadsides or waste ground. It should be applied in dry weather at the rate of 125 pounds in 50 gallons of water per acre. Strong solutions of the other foregoing chemicals may be used for the same purpose.

GENERAL CONCLUSIONS.—The control of weeds on the farm requires in a marked degree the two virtues of thoroughness and perseverance. If a farmer goes about it in a half-hearted way, he will never accomplish their eradication. Constant watchfulness is necessary if progress is to be made. If bare fallow is resorted to it should be possible to get rid of even the worst weeds in a single year. But the practice of bare fallow is not a paying game. It is in most cases better to graze the land or take off a crop of hay or grain early in the season and then leave the land bare for the rest of the year. Shallow plowing should be followed by continuous cultivation throughout the rest of the season, and a hoed crop planted the following year.

It is safe to say that weeds can only be held in check where a suitable rotation of crops is followed. Where the same land is sown with wheat year after year, or where the land is pastured indefinitely, the weed problem is liable to become worse every year. In the former case a bare fallow every few years will be necessary, and it is very doubtful whether the return from the land will be equal to that where rotation of crops is followed.—

British Columbia Fruit and Farm Magazine.

The Making of a Herbaceous Border.

By IRENE F. RYAN.

WITHIN the last 10–15 years wonderful improvements have been brought about in the growing of hardy herbaceous plants. Most of the present generation can recall the time when we were without our present beautiful varieties of Phlox, Pyrethrum, Delphinium, and Pæony, &c., and these are only a sample of the wonderful changes effected during recent years.

Because we call them “hardy” plants, there is no reason that they should be as carelessly treated as they often are. If planted in uncultivated soil and neglected, the most beautiful will lose their character, form and beauty. Place a healthy growing child in uncongenial surroundings, neglect and ill-treat him or her, and the result will be probably dwarfing of character, possibly loss of beauty, and most certainly loss of health. Therefore cultivate your soil thoroughly.

If the front of a shrubby border is the place chosen for growing the plants, deeply trench and manure the ground, and above all rid the border of the roots of shrubs which are impoverishing the soil. Do not plant near Yew or Laurels, as these are very gross feeders, and will leave the ground too poor to afford sufficient nourishment. If the soil is light add cow manure and lime when trenching, as it retains the moisture, sandy soils being usually deficient in this. If heavy, add sand, grit, leaf-mould, and light manure. And weeds and roots from the soil can be burned and the ashes from these can be strewn over the freshly-dug ground.

The second place which may be considered for planting is the kitchen garden border. This will probably be richer in plant food than the shrubbery, and may not require so much manure. If over-rich the soil will require a plentiful supply of lime, which should be added unslaked if the ground is not required for immediate use—1 lb. of lime can be dug into the square yard. This will counteract the acidity caused by the soil being over-rich.

If dealing with new pasture land, this must also be thoroughly trenched and manured; and above all watch for the appearance of wireworm, which is usually found in virgin loam. If detected, the top spit should be removed to the depth of 4 inches and stacked apart, as the wireworm destroys Lilies, Fises, and many other plants. If the soil is a heavy clay one, lime can be added as before mentioned, also soot and wood ashes. It is also beneficial to work a clay soil in windy weather when possible.

The majority of herbaceous plants can be moved in spring and autumn, but it is not well to transplant between the middle of December and the middle of January, as there is no growth during that time.

(To be continued.)

Suburban and Allotment Gardens.

NOVEMBER is a good month for stocktaking on the allotment, as also in the suburban garden; of noting these crops which have been superabundant and of those of which there has not been sufficient to meet the demands. Also as to the scarcity or plenitude during certain *seasons*. It has been said that a fool can have a supply of vegetables during July, but that it takes a gardener to obtain full supplies in January, February and March. This question will need consideration now when drawing up schemes for next year.

I suggested early in the season that these vegetables which were considered necessary should be grown, and of these, where space is limited, those which are dearest to buy at the shops, and arranging the supplies so that they come in at periods of "market scarcity" rather than when vegetables were extremely cheap. I repeat this now, as I have so often found by experience, that allotment holders and amateurs generally grow too many mid-summer vegetables in proportion to the mid-winter ones. In this connection I would like to suggest to Horticultural and Allotment Associations the value of winter shows or competitions, in order to encourage the production of vegetable foods when they are scarce, rather than having classes in the summer shows for varieties or collections of vegetables, in which winter vegetables are often included, and which vegetables having been grown out of season, so to speak, have not the same keeping qualities as those of later development. Writing of competitions reminds me that flowers are often entirely absent from allotment competitions, this is to be deplored.

In Belfast, where special prizes are offered for the flower borders, some remarkable results are obtained, and the whole scheme of allotments presents a far more beautiful and interesting scheme than where there are no flowers. Apart from this it has also been found that those who win prizes with the flowers grow more vegetables than the average plotholder, probably because of the fact that a keener interest is aroused, which interest makes itself felt in every bit of the plot.

ALLOTMENT EXTENSIONS.—This is perhaps the best month to start on new schemes of garden plots, as the ground can then be put into order before the big push of spring comes along. It is claimed by the Dublin factors and shopkeepers that an immense quantity of food has been grown on the allotments this year. The indications at present appear to point out the *absolute necessity* of producing *much more* during the new season. That there is a positive danger of food shortage is not realised by many as it might be. While this is so it seems a calamity that land should be held up by sports of various kind and through other causes when it might be doing really national service. It should not be necessary at this time to appeal to patriotism or to point out that such lands as I have referred to are immensely improved by the deep, thorough cultivation, combined with the heavy manuring and liming which is done by plotholders. (The best thing that could happen to many of these grass plots with their uneven mossy surfaces, is for a group

of allotments to be laid out on them, so that after a few seasons of cultivation they are in a fit state to grow the right type of grasses upon.) Then again the health-giving and social values of allotments are worth while, even if these were all the benefits to be obtained.

SOIL OPERATIONS.—These should be continued, as recommended last month. One operation which is of extreme value—more especially on heavy or sticky soils and in northern districts—is that of ridging, or throwing the soil into long parallel roof-like banks. To do this first of all mark off the ground into parallel strips about 3 feet 6 inches wide, then at one end of the first strip take out a trench about 2 feet wide and from 12–18 inches deep, depending upon the quality of the subsoil. When this first trench of soil has been taken out, a second trench about 18 inches wide should be marked off immediately behind it, and on the same strip. The soil of this trench should be lifted out with a digging fork or spade in large lumps and thrown forward into the *middle* of the first trench in such a way that a *ridge* is gradually formed, having its apex over the middle of the strip and its base extending nearly to the sides of the strip. Proceed in this way trench after trench until the first strip has been ridged, and then complete the ridge over the last trench of the strip with soil from the first trench of the adjoining strip.

This method of cultivating the soil exposes a considerable surface to the varying atmospheric conditions—to frost and heat, wet and dry, &c. As a consequence in spring it breaks down very easily, owing to the weathering it has undergone, has less soil pests—many being killed by frost, others devoured by birds ever on the hunt during winter for animal food, when other food is scarce—is better drained, contains a greater supply of air, and warms up more easily. As a consequence crops are earlier, healthier, and more luxurious in their growth.

MANURING.—Heavy soils should, when possible, be manured in winter while ridging or other operations are in progress. The long or littersy manure being placed along with vegetable refuse at the bottom of the trench, and the short manure near the surface, depending upon the kind of crop to be grown. For Carrots, Parsnips and Beet the manure should not as a general rule be placed nearer than 9 inches to the surface. The sandy soils need not be dug as early as the clays, and on these manure is best applied in February or March, unless quantities are available. Leaves of trees and other moisture-holding matter should be incorporated with such soils at every available opportunity.

LIMING.—Many allotments are established on sour soils. Such soils are immensely improved by the addition of lime, which can be obtained in various forms. Generally speaking, "quick-lime" gives the best results, more especially on heavy soils. It should be powdered by exposure to the air, or by sprinkling with water, and then scattered over the soil—after digging has been done—at the rate of 1 hundred-weight to a $\frac{1}{16}$ acre plot, or more, where finger and toe disease has manifested itself on Cabbages and Turnips, &c. The lime should be mixed with the surface soil by pointing or raking it over with a digging-fork.

Lime washes through the soil to the lower layers fairly quickly, and should be applied annually to get the best possible results.

FLOWERS AND FRUIT.—Continue to complete the work recommended in the last issue of IRISH GARDENING.

Allotment Observations.

By J. HURLEY, Superintendent Dublin Corporation Land Cultivation Committee.

It will, I am sure, be admitted that close observation of allotments would be required throughout the entire year if a correct estimate of the produce raised was to be given. In many cases it must be admitted that the cultivation methods resorted to left much to be desired as the quickest ways of getting through the work were availed of. The lazybed was very much in evidence everywhere, but it is believed that the drill will take its place next year.

Many varieties of Potatoes were to be seen growing on a plot, this perhaps on account of "seed" being so scarce during the earlier months of the year. General satisfaction seems to have been given by "Beauty of Hebron," "British Queen," "Arran Chief," "Leinster Wonder," and "Shamrock" varieties, and in a few instances the quality and quantity of the "Up-to-Date" eclipsed the expectations of many growers.

It is hoped that next year will see much more variety in the vegetables growing on all plots. Beyond Potatoes, Cabbage and Turnips, 85 per cent. of the cultivators did not go.

The scheme for the winter supply of vegetables should be decided on early in the year, and ground well prepared is essential for good healthy crops.

Leeks, which are so suitable to substitute Onions, were rarely to be seen this year, as while the cultivation is simple they survive the winter months in the ground, and can be left there until required for use. The full value of Celery has not yet been realised by the average plot-holder. The few who were fortunate enough to grow some this year can testify to the simple mode of cultivation and to the high quality of the vegetable itself. As a winter vegetable it is worth its place on all plots.

The popular Cabbage known as Savoy was, in most cases, sown too early, and it consequently reached maturity too soon. It is best appreciated when it comes in for use in December.

Parsnips, too, were not very numerous, though they amply repay the trouble of cultivation. Good deep or double digging is universally recommended with the manure deeply buried in the ground, which should be left thrown up as rough as it will remain when it is thrown off the spade in autumn.

Broccoli, or Winter Cauliflower, as they are called, received very little thought from the plot-holder of 1917, considering when the seed has been sown and the plants lined out in July in their permanent places, keeping the ground free from weeds, and drawing a little soil to the stems of the plants, constitute the entire cultivation. A good crop may always be looked forward to if seed is sown in time. A variety may be chosen that will come in for use during any month between October and April.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill, Shane's Castle, Antrim.

KITCHEN GARDEN.

ASPARAGUS.—Now that the "grass" has ripened it may be cut down and burnt, then clean the beds and top-dress with good rich manure, or seaweed, if possible; failing the latter a dressing of salt will prove of great value for next year's growths.

GLOBE ARTICHOKE.—The crowns of these valuable plants should be protected now by putting a layer of ashes over them, later put a layer of dry litter over that, which will be sufficient to protect them from severe frost.

RHUBARB.—Put the first batch of roots into forcing house to have a dish or two for Xmas time. The same applies to Seakale. After a few degrees of frost they force much better.

CELERY.—Give a final earthing up to latest batch, placing the soil up the stems to the fullest extent. Choose a dry day for the work, and break the soil finely.

CAULIFLOWER.—Any heads which are ready for use should be cut and placed in a cool room, where they will keep fresh for some days.

REMARKS.—The principal work for this month is the clearing of all vacant plots, manuring and digging same or, if possible, trenching, leaving the surface as rough as possible, for the frost to have full play on it. Attention and thought should be given to every plot according as it is dug and manured or trenched. *What is it to grow?* That should depend on what was in it this year, for instance, the Brassica family, which includes Turnips, should not be allowed to follow each other, if this can at all be avoided. Good crops of onions may be grown in the same plots provided the ground is trenched and liberally treated. Carrots, Parsnips, and Beetroot should follow crops for which the land has been specially well manured the previous year so that fresh manure need not be added. Any vegetable will follow Celery, as the treatment of Celery brings the ground into good fettle, but every gardener who studies his work tries, if possible, to give each crop a change of ground every year, so that the garden and the crops will be benefiting every year from his labour and forethought, and no delay occur at seedtime in getting a plot ready for its new occupant.

FRUIT GARDEN.

NEW PLANTATIONS of all kinds of bush fruit may now be made, that is, if the soil is in a dry favourable condition. The earlier trees are ordered from the nurseries the better chance you have of getting good stuff. See that the ground is well trenched and manured and allowed to settle before planting proceeds, and on no account plant if the ground is wet and would cake when treaded on. Small bush fruits, such as Currants and Gooseberries, should be planted on good, rich soil, six feet apart each way. Raspberries in lines

six feet apart, and the stools two feet apart in the rows. Apples and Pears, Pyramids and Bushes, 12 feet apart. Horizontal and fan-trained trees on walls or trellis are allowed fifteen to twenty feet apart. Where only single trees are being planted to replace the old ones the most of the old soil should be removed and plenty of good loam should take its place.

When trees arrive from the nursery see that the roots are not too dry. Soak them in water and lay them in a trench until you are ready to plant them into their permanent quarters.

Trees requiring root pruning should be attended to if the weather is dry and favourable, and the wood fairly well manured, for if this operation is done early they should give little or no trouble next season. The pruning and training of wall trees should be proceeded with and pushed on at every favourable opportunity—after the leaves are off the trees. The pruning and training of wall trees depend on the kind, and the space allotted to it; also, some kinds bear on the wood of the previous year, while others bear on spurs attached to the old wood. Examine all the old ties and see if they will stand for another year or not.

FLOWER GARDEN.

The lawns and walks will require a good deal of attention to keep them clean. All leaves collected should be carefully stored, for they are a valuable crop both for mixing with Hot Beds and for keeping for leaf mould.

Granted that spring bedding is finished, Herbaceous Borders will now require attention. If replanting is necessary the plants should be all lifted and the border thoroughly trenched, and all perennial weeds carefully picked out, then replant, using only the outside pieces of the clump for the new border. A few clumps of May flowering Tulips always look well planted at intervals along a herbaceous border.

ROSES.—Where new beds are to be made and planted the sooner it is done the better. Remove all the old soil to the depth of two feet and fill in with good fibrous loam from an old pasture, to which may be added some half-inch bones. When planting avoid planting too deep, spread a few inches of manure litter over the bed after the Roses are planted; this keeps the soil moist and warm and encourages root action early.

BEDDING PLANTS.—Examine boxes and pick all dead leaves and flowers of Zonal cuttings; keep them on the dry side. Cuttings in frames should have plenty of air on fine days. Violets in frames should have the lights removed on bright warm days. Keep the runners pinched off. Chrysanthemums which have not flowered in the border can be lifted and boxed; the flowers will be welcome if there is room inside to house them.

Hardy shrubs may now be pruned into shape and any thinning out done in the shrubberies. It is also a good month to transplant large specimens. On a sheltered border facing east or west cuttings of many trees and shrubs may be inserted. Some kinds propagate more readily from mature wood inserted outside than from half ripe wood in a propagating frame. The best examples are Willows, Poplar and Tamarisk. There are also many common shrubs for which room cannot be spared in frames. These remarks apply to Privets, Ivy, Laurels, Climbing Roses and Ribes.

Southern and Western Counties.

By ERNEST BECKETT, Gardener to Lord Barrymore, Fota.

WHEN I made my *début* with the January Calendar I confessed my intention of dealing as far as I possibly could in the remarks for the Month's Work with the Kitchen Garden section. Never was such interest shown by all persons in all ranks of life as witnessed during the past year; and now that the season has arrived when the constructional work commences on which will be based the efforts for 1918, and that more than ever depends upon our home production, no stone should be left unturned to try and produce better results by a thorough cleansing and cultivation of the ground, and the furtherance of all work which can be done during these coming short days whenever the weather permits. Deep cultivation is undoubtedly the only way to bring about the desired result, and an attempt should be made to treat a portion of the garden each year. As I mentioned in the first number, I am in favour of bringing the sub-soil to the surface, but I know there are a great many who differ and so much depends upon the circumstances and the ways and means at hand, so that it is impossible to write and advise, but to the uninitiated I would suggest that they treat a small portion and lay it up on the surface in as rough a condition as possible and leave it exposed to the elements, and with the majority of cases it will be found possible to grow something on it the first season, if not actually possible to make a seedbed.

I think it was in the *Gardeners' Chronicle* that Mr. G. H. Jenkins gave an excellent hint on the trenching question, and for those who did not see it and to whom it may prove useful I merely repeat it.* Instead of taking out a trench and wheeling to the other end of the plot, which is a serious item, halve the piece of ground by putting down a line, chop out a good mark with the spade, then take out a trench at one end half-way across to the line and throw the soil on to the path, or as near as possible, trench the one half first and on arriving at the end of the first half commence on the return by filling the last trench with soil from the second half, and finish close beside where the start was made without barrowing a spadeful of soil.

Take every advantage of wheeling manure and other refuse for the bottom trench where the ground is being worked to a depth, keeping the richer material closer to the surface, where it will be more readily assimilated, and the coarser material (such as all refuse excepting all obnoxious weeds and seeds of same that will surely grow if brought to the surface again) at the bottom for drainage. Economise time, labour and manure by marking out imaginary or otherwise the positions the crops next year will occupy. South borders and other sites intended for early crops, if vacant, may be dug and left rough. This ground will usually be required to be as rich, and at the same time, as light and friable as possible, and to secure that leave for the time being as rough as possible on the surface.

* A very old practice.—Ed.

ASPARAGUS.—Clear the beds of all stalks and refuse as soon as growth has thoroughly ripened off. This can be quickly done by the scythe. Afterwards clean the surface from weeds as thoroughly as possible, and if nettles and couch grass are present carefully loosen the surface with a fork and remove as many of the roots as possible, and give a dressing of manure or seaweed.

RHUBARB.—Make the beds as tidy as possible. In the majority of cases this vegetable has not been unduly taxed this season so that the usual mulching of manure might, I think, be more profitably used elsewhere.

GLOBE ARTICHOKE.—Clean these and fork up the ground amongst them to admit of a free passage of rain, and then mulch with long strawy litter, which will serve as a protection to the crowns.

TOMATOES.—Hang up any late fruits from the outside plants in a light, airy house to ripen artificially, as these will be very useful for culinary purposes. Winter fruiting plants in pots will need careful watering from this onwards. With a free circulation of air without draughts and a little artificial warmth at night.

Plants in frames such as Lettuce, Cauliflowers, Endive, &c., should have abundance of air, removing the lights entirely during fine days, but protect from heavy rains and keep them free from weeds and loosen the surface soil frequently, at the same time removing any decaying leaves to prevent damping.

THE HARDY FRUIT GARDEN.

Before the trees are denuded of their foliage mark any superfluous branches for removal later on as mentioned in the Calendar for the month of February. Whilst the leaf is on the trees it is much easier to see to what extent thinning can be carried out. The pruning of Morelle Cherries on north walls and retying should be carried out as soon as possible. The less the knife is used the better, but at the same time overcrowding is an evil, as a thickly set tree is difficult to clean and keep clean in the spring of the year from black aphid and other pests. Shoots that are stubborn and will not tie in may be spurred back, but lay in as straightly as possible plenty of young growths and remove older growths. Remove as many old ties as possible, which only harbour insects, and especially those that are tight on the growths. When completed the alleys may be forked over and a dusting of basic slag will prove helpful, or lime. Push on with other pruning and thinning as soon as the leaves have fallen, so that the ground round and about them can be dug up and made tidy. I prefer to leave Currants and Gooseberries till later, as when the latter are left unpruned the birds have greater difficulty in taking the basal buds. Apples, and in fact all kinds of fruit that fail to give good returns, or are otherwise unsuitable to the locality and requirements, should be grubbed up and their places filled with more profitable sorts, or in the case of standard and orchard trees be grafted.

THE FLOWER GARDEN.

The replanting of practically all herbaceous plants may now be undertaken whenever the

ground is in suitable order, and not only will it relieve the pressure of work later on, but also whilst the growth is still on the majority of them the rearranging according to height is much more easily done. With Michaelmas Daisies and such a number of varieties it is difficult unless one has been particularly careful to label them exhaustively to place them correctly and remember their behaviour when once they have been cut down. If the whole of the border is to be replanted carry out the work as well as possible, because a good deal of trouble has to be taken, and when completed with an annual overhaul and top-dressing these should last for years. When splitting up stools of herbaceous plants do so by inserting two strong forks back to back and levering the handles in an outward direction. This is far preferable to chopping with a spade. Select the outer portion of old established clumps, which are usually the most vigorous, and rather plant three smaller pieces triangularly than one large clump. There is a great art in laying out borders to provide a feast of colour at various seasons of the year, and for the plants to harmonise, which recalls to my memory the excellent photograph of the Herbaceous Borders at Glasnevin depicted in IRISH GARDENING last April, and which reflects the greatest credit on all concerned.

CHRISTMAS ROSES should be tidied up and the ground forked around them, and a little stimulant added and hand lights or cloches placed over them when the flowers commence to open. Plant Violets in frames without delay and keep as near the glass as possible, and give abundance of air.

Review.

One Thousand Gardening Hints.

THIS is one of the large number of books published during the war, and primarily designed to afford help to amateurs. The idea of the present volume is excellent. Many amateurs have scant leisure for reading advanced works on gardening, and indeed have not the practical experience to gain much benefit from such. What they want is a handy book of reference to which they can turn in an emergency and find brief directions on the different crops grown in gardens and allotments, and pointed in formation regarding the cultivation of the soil. The inexperienced often long for some advice as to how to make the most of a small area, and "1000 Hints" makes a feature of advising as to the best way of utilising a small garden.

All sorts of crops in garden and greenhouse are briefly alluded to as well as manures, garden pests, garden recipes, &c., and an excellent Vegetable Time Table is included. Amateurs and Allotment Holders might do worse than invest in this little volume, which makes a useful companion to "The Complete Guide to Gardening," by the same author. Both are published at 1s. 3d. net, obtainable from Cassel & Co., Ltd., La Belle Sauvage, London, E.C. 4, and presumably through booksellers.

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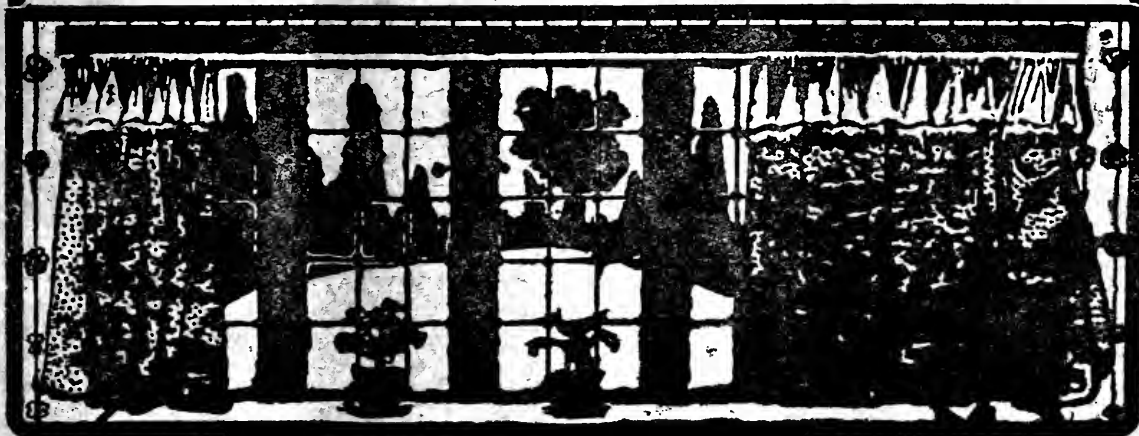
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Irish Gardening

Contents

	PAGE		PAGE
Lectures for Plotolders	177	Honeysuckles and Other Handsome	
Vegetables	179	Fruiting Shrubs	184
Rural Education	179	Suburban and Allotment Gardens	185
Winter Moths	180	The Month's Work—	
Review	181	Midland and Northern Counties	186
Tree Planting in Newry	182	Southern and Western Counties	186
Autumn Tints	183	Correspondence	188
Everlasting Flowers	184	INDEX TO VOL. XII.	189



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IRISH GARDENING

A MONTHLY JOURNAL DEVOTED TO THE

VOLUME XII
No. 142

ADVANCEMENT OF HORTICULTURE AND
ARBORICULTURE IN IRELAND

DECEMBER
1917

EDITOR—J. W. BESANT.

Lectures for Plotholders.

FERTILISERS AND MANURES.

THIS admirable course of lectures was continued in the Dublin Municipal Technical Schools on Friday, the 23rd of November, the lecturer being Mr. J. P. Drew, Manager of the Model Farm, Glasnevin.

The lecturer alluded to the need for analyses of the plant and the soil in arriving at a knowledge of manures or fertilisers required in different instances. Describing the two main divisions into which manures are separated, he pointed out that organic manures are derived from the remains of plants and animals, while inorganic manures are obtained from mineral sources. The chief organic manure is undoubtedly ordinary farmyard manure, which is commonly called "complete," because it contains all the more essential elements of plant food—viz., nitrogen, phosphate, and potash, while its mechanical action on the soil is not the least of its virtues. Given a sufficient supply of farmyard manure, the need for artificial or inorganic manures is reduced to a minimum, though on some soils and for certain crops a combination of organic and inorganic is found profitable.

Proceeding, the lecturer dwelt on the time to apply the various "artificial" according to their degree of solubility. Nitrates, such as the popular nitrate of soda, are best applied as a top-dressing to the growing crop, as, if applied earlier, much of it is washed out of the soil before the crop can use it. Superphosphate and basic slag are examples of phosphatic manures, and being less readily soluble, may be dug into the soil some time before cropping takes place. Superphosphate is more quickly soluble than basic slag, and may be forked or dug into the soil in early spring, and will be

available during the summer. Slag is slower, and may be applied now to any ground being dug over, as there is no fear of it being washed out. It may, however, be applied nearly any-time, as it will certainly become available for a subsequent crop.

Potash manures, which are all imported, are valuable, but at present unobtainable. For allotments, however, where but small quantities are required, some amount of potash may be obtained through burning all rubbish of plant remains which can be got together—weeds, decayed leaves, any woody material, such as useless pea sticks, hedge trimmings, &c. The resulting ashes may be spread over the ground and dug in in the ordinary way.

Lime was referred to as being of great value when applied to soils deficient in it, and which had been heavily manured previously. Heavy, retentive soils, which have had repeated applications of farmyard manure, are apt to become sour, and nothing tends to correct this acidity so much as an application of lime at from 8 to 10 cwts. per acre. If the lime is obtained in the lump form it may be laid down in small heaps and covered with a few inches of soil. When pulverised it may be spread and dug into the soil.

That dread disease, known variously as Club Root, Finger and Toe, &c., and called by botanists *Plasmadiophora brassicae*, is frequently troublesome to Cabbages, Cauliflowers, Turnips, and indeed most members of the Cabbage family, and is best eradicated by using lime in the soil.

Had time permitted, we would have liked to have heard the lecturer say something on the value of two great "manures" which cost nothing—viz., light and air.

Deep working of the soil, too, is of in-



APPLE ALLINGTON PIPPIN

calculable value to crops. Indeed, without manure at all an average soil if deeply worked will produce good crops. Most soils contain plant food, but it is inert for want of air. By deeply working and aerating the soil much of this becomes available, and if, in conjunction with deep tillage, the plants are given sufficient space between them for air and light to play freely on them, then good crops will follow. It cannot be too widely recognised that plants obtain a good deal of their food from the air—that is, carbon. Further, all the food material absorbed by the plant, either by the roots or by the leaves, is in a crude state, and is manufactured into food by the green colouring matter in the leaves. This green colouring matter can only act in light, hence the need for giving the plants sufficient space.

In our March number, discussing Manure for Allotments, we wrote:—"There are other factors, however, which have an enormous effect on production—namely, sunlight, air, and what is familiarly called 'elbow grease.' While by no means scorning the value of manures, we think that far too much overcrowding is practised in cropping, particularly with Potatoes. . . . Experiments by practical men have shown that where the soil has

been deeply tilled and wide planting has been adopted and the surface soil subsequently kept well tilled, better crops have been obtained than where manure was applied in abundance on shallow-tilled soil." Since then we have seen many gardens and allotments, and always the best crops were where there was the greatest evidence of tillage.

Mr. John Weathers, an Irishman who has had a successful career as a grower, lecturer, and author in England, writes in his book, "Commercial Gardening," as follows:—"The soil is talked about and written about, and enormous sums of money are lavished upon it, as if it, and it only, contained ALL the material out of which the crop is to be made. Not a word is said about the air and light, and their absolute necessity to the crop. Perhaps it is because they cost nothing they receive such scant courtesy. And yet the great bulk of the crop—the great weight, after water has been deducted—comes from the carbonic acid-gas which is floating about in small quantities with oxygen and nitrogen of the atmosphere. . . ." In giving advice regarding the soil, he says:—"Dig it deeply, if possible to a depth of 2 feet, and bring the bottom spit to the top at least every third year. In this way the subsoil will become as fertile as the top spit by exposure to the weather, the action of the roots, and the decomposition of *well-rotted manure*. . . . This may seem a dangerous and drastic doctrine to teach, but it will be less costly to carry out than allowing the crops to languish and die for want of moisture at the root in dry summers, or to become water-logged, sodden, and diseased in wet ones."

There is no doubt whatever of the value of manures, farmyard and artificial, used judiciously, but it is folly to suppose that their use in greater quantity can compensate for lack of deep cultivation.

With regard to farmyard manure, it is doubtless true that its manurial properties are richer when it is fresh, and that it loses a considerable amount when kept, but every gardener knows the value of thoroughly rotted, well-decayed manure as opposed to undecayed. The fact is that in its decayed, and therefore milder, state it is more suitable to plants, whose roots seize on it with avidity, and absorb the food material readily. How many gardeners know the dire results of putting out plants on ground recently dressed with fresh manure? Either the young roots are immediately burned or the plants, if they absorb any of it, at once sicken, like a young child who has partaken of too heavy or strong food.

Vegetables.

HOW TO GROW AND EXHIBIT THEM.

THIS was the title of an excellent lecture delivered to Dublin Plottolders by Mr. W. Tyndall in the Technical Schools, on 30th November. Mr. Tyndall is well known as the capable and energetic Horticultural Instructor for Co. Kildare. From start to finish the lecturer maintained the interest of his audience, who were obviously out for all the information they could get—a fact that was demonstrated by the large number of intelligent questions asked at the close of the lecture. Beginning with a general exhortation as to the necessity of thoroughly cultivating the soil, maintaining it at a high pitch of fertility, the lecturer then proceeded to take the principal vegetables *serialim*, emphasising the chief cultural details in each case. Bearing in mind that his object was to instruct plottolders in the growing of vegetables of the highest quality, fit for exhibition, Mr. Tyndall missed nothing that could possibly occur to an old exhibitor like himself. Not only did he give complete cultural details regarding dates of sowing or planting for shows at different dates, but he also advised as to the best methods of exhibiting, pointing out that the largest produce would not necessarily take the judge's eye. As he proceeded the lecturer touched briefly on pests and disease, giving brief directions for dealing with each. A great many questions were asked by members of the audience, who gave the lecturer a very warm ovation, and were obviously delighted with what was certainly a most enjoyable and profitable evening.

Rural Education.

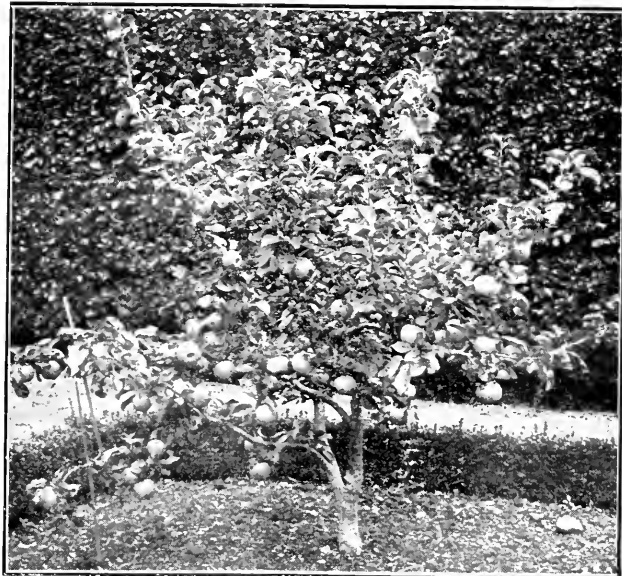
By L. J. HUMPHREY, Organiser, Rural Science and Horticulture.

IN many countries much thought has been given to the problem of retaining in the rural districts labour for the land. Agriculturists have realised that without sufficient labour the industry could not progress, and agricultural countries have seen their hopes of prosperity diminishing as the difficulty of retaining labour increased. It is not the purpose of this article to deal with the causes of the rural exodus or with many of the ways by which the boys and the girls could be induced to remain to reap the harvests the soil supplies to those who understand it. But in that understanding of the soil lies perhaps at least a partial solution of the problem. If by some means the country dwellers could be brought to know the soil as the gardener knows it, more could be produced from the soil, more people could be maintained by its harvests, and fewer boys and girls would need to leave the village for the town. But that is not all that would result. To understand is to become interested and to discover that the soil is a storehouse which yields its supplies only to those who dig and delve in it. Once that interest in the soil and its products is aroused, the attractions of the city would find their chief rival in the real and vital interests of country life: in the flocks and herds, in the crops, the trees and hedges, and in all that makes life in the country one of progress and not stagna-

tion. If that interest in country affairs is not aroused, then no pale reflections of city attractions will keep youth in the country or lure it back when the city has once claimed it.

From time to time the rural schools have been blamed for giving boys and girls an education which neglected the rural outlook and made a gulf between the home life and the school. It is not very surprising if country schools did provide such an education, for education is a training of the mind and not an apprenticeship for a career. A teacher in a primary school has before him the plain duty to lead those minds under his care to the highest level they can reach. He employs the materials which long usage and custom have shown him are of value in developing growing intelligences similar to those with which he has to deal. Reading, writing, arithmetic, history and geography are taught by methods long familiar to teachers. They are the vehicles through which the mental training has been conveyed, but some teachers find that something is needed to add to these lessons which have been taught to successive generations of pupils. They turn to the garden for inspiration.

In the garden, under the teacher's eye, the boy or girl learns to observe, and by and by to reason from his observations. He learns as he digs the soil to enable him to grow the seeds he is studying, to use his brain to direct his muscles. He trains his eyes to see things as they are, estimating and comparing distances, setting out lines and plants, and correcting his judgment by measurement and calculation. After a spring-time of planting and a summer of work under the guiding teacher the boy who has worked in the school garden knows what he can grow in his plot and something of how it grows. So far from the garden interrupting his education, it has been made the means of education. The boy may not know how to grow the heaviest crops,



APPLE, STIRLING CASTLE AT CARRIGORAN, Co. CLARE

See Article by Mr. Barker in November issue.

but he has been working with definite aim, and step by step the teacher has assisted him to discover new truths and to verify old ones. Physically and mentally he is better for the training, and, what is more, he has been using as educational material some of the processes of an industry which surrounds him, and on which the prosperity of his country and of his father's home depend.

When the boy leaves school he takes with him something the garden has taught him. If he becomes a farm worker he brings to the work a mind ready to be interested in the soil. He is no less fitted to be a merchant for having learned how closely in nature cause and effect follow each other. In a profession his work with a developing plant will have shown him the need for patient effort. Should he become merely a townsman he will take with him something which may, on unexpected occasions, develop into a taste for gardening in slum window boxes, in dark back yards, or on garden plots. Whichever path he takes the garden will have helped to make him, in Lord Rosebery's phrase, "a gardener in taste."

It is then not to be wondered at that in Ireland nearly 600 national teachers have given up their leisure to learn as part of an educational method how to manage a school garden and how to teach lessons in science which illustrate the functions of the plant and the work of the soil. It is more to be wondered at that of 8,000 primary schools fewer than 200 have obtained school gardens, and that none of these are girls' schools. But the numbers are growing each year, and they will grow more rapidly when all that a school garden can achieve in the educational, aesthetic or civic sense, apart from the utilitarian and economic aspect of garden work, is more generally realised. Generations of school garden boys and girls when they grow up will want the fruit and the flowers they grew in the school gardens, and they will grow them. They will set out to remove the reproach of untilled plots and half-used gardens. The village will become, to the eye at least, a more attractive place. If to follow this work of the school garden we can find a common interest for the village, which is being brought nearer to the town by science and machinery, we can hope, with improving economic conditions, to keep for the farms the brains and the labour which the land will always need. The school garden is a first link in the long chain which will retain a population on the land, but with all the evidence which is accumulating there is very good reason to regard it as an essential one.

Winter Moths.

THERE are several moths whose wingless females crawl up the stems of fruit trees in the autumn and early winter and spring and deposit eggs in the interstices of the rind of the twigs and branches. From these eggs caterpillars are hatched in the spring which eat the leafage and blossoms, and, in conditions favourable to their development, cause much injury to the fruit crop. Among these moths the Winter Moth (*Chimantobia brumata*), and the Mottled Umber, or Gre

Winter Moth (*Hibernia defoliaria*), and the March Moth (*Anisopteryx aescularia*), are the principal offenders.

About the second week of October, the Winter Moths come from chrysalids in the ground, under and near the trees that were infested with caterpillars in the preceding summer, and the wingless females crawl up the trees for the purpose of egg-laying. The eggs of the Winter Moth are very small, cylindrical, and at first of a light green colour, afterwards becoming red. They are placed in small groups, usually at the base of buds and on pruned surfaces, sometimes in the chinks of the rind of the branches and shoots, and fastened there with a sticky substance. From 150 to 200 eggs are laid by one female. The Great Winter Moth lays larger, rather rusty-coloured, long eggs, and more in quantity (as many as 400), which are placed in lines, or small groups, according to circumstances.

From the eggs the caterpillars come in the early spring, usually about the middle of March, and, as it appears, just before the buds begin to burst. The Winter Moth caterpillars are at first grey, with dark heads, and so small that it is difficult to see them. Later on they become greenish, with white stripes and brown heads, and are finally rather yellow. When full grown they are about three-quarters of an inch long. They, as well as those of the Great Winter Moth, are called "loopers," or "measures," on account of the position they assume when moving. They have six true legs, and only two pairs of prolegs, so that they can easily be told from caterpillars of other moths. These larvae eat the leaf, blossom, and fruit, and spin the blossom heads, and also the leaves, together, and live under their protection. When food fails, or when they are fully fed, they let themselves down to the ground by silken threads and bury themselves in it. The moths of both species begin to appear in the first week in October, and may be seen throughout November and December, and even in January and February, depending on the weather.

The caterpillar of the Great Winter Moth is chestnut-brown in colour, with a tinge of yellow on the under part of the body. It is much larger than the Winter Moth caterpillar, being 1½ inches in length. When the period of pupation arrives the caterpillar descends to the ground and changes to a chrysalis just below the surface.

In some seasons, especially in those when the progress of the leaves and blossoms is arrested by spells of cold weather, great mischief is caused by the caterpillars of these and other moths, the females of which are wingless. Sometimes the trees are left as bare as in winter, and are, besides, seriously injured for another season. The caterpillars attack apple, plum, damson, filbert and cob-nut trees, and occasionally currant and gooseberry bushes that are set under apple and plum trees in fruit plantations. They are also abundant in woods, feeding on hazel, maple, hornbeam, &c.

METHODS OF PREVENTION.—It is very necessary to adopt methods of prevention against these insects. The first and most important of these is to prevent the wingless female moths from crawling up the trees in the autumn and winter months. This can be effected by putting sticky compositions round the stems to entrap the moths.

Cart grease made from fat or oils, and without

tar, is recommended as the best and safest composition to use for banding fruit trees. In all cases the grease must be spread on bands of grease-proof paper. These bands should be half a foot wide, and tightly tied to the tree above and below by a piece of string. The bands are best placed four or five feet above the ground.

Grease-banding must be commenced early in October, and renewed from time to time when the composition has become dry and hard.

It will be necessary to keep the bands in good working order as long as moths are seen about.

In February or March, or as soon as frosty weather has gone, the wingless females of some other species of moths come forth, and ascend the trees for the purpose of laying eggs upon them. These other moths are not nearly so numerous as the Winter Moths but it is necessary to keep the bands in working order for them also in some districts; it is desirable upon the breaking up of winter to watch whether the male moths are flying about the trees in the dusk, and if they are seen to put the bands in working order at once.

In the case of cultivated fruit land, many of the chrysalids might be destroyed by digging or hoeing late in the summer the ground all round trees that were infested in the spring, and by digging or hoeing in lime or gas-lime. In grass orchards, the herbage should be close-fed off by sheep. Poultry should always be kept in orchards for they devour many larvæ, and also the female moths as they escape from the ground. Many fruit growers also recommend pigs, which help to keep the trees in a comparatively clean state by destroying insects in the ground.

REMEDIES AGAINST THE CATERPILLARS.—Spraying trees with arsenites is always necessary. Small apple, plum, and damson trees, filberts, cobs, and fruit bushes can be easily sprayed by means of proper knapsack sprayers. Large trees beyond the reach of hand sprayers can be sprayed with hop-washing machines, but there are machines especially manufactured for this purpose.

Only arsenical washes are of any use against the caterpillars. Two of these are strongly recommended—viz., Paris Green and arsenate of lead. Paris Green costs from 10d. to 1s. per lb. It should be obtained in the form of paste, which is safer than powder, and used at the rate of 1 lb. to from 200 to 280 gallons of soft water, according to the age and conditions of the leafage and the kind of tree sprayed. With it should be mixed a few pounds of lime. It must not be used too strong or the leaves will be burnt. The solution must be kept constantly stirred so that it may be maintained of a uniform strength.

Arsenate of lead is prepared as follows:—Dissolve 1 oz. of arsenate of soda in warm soft water, and add to 16 gallons of soft water. Then dissolve 3 ozs. of acetate of lead in water and add to the 16 gallons of liquid. Add 2 lbs. soft soap. This may be mixed with paraffin emulsion.

It is not advisable to spray with arsenical solutions when the trees are in blossom unless the attack is very severe, as bees may be killed. As the object is not to dislodge the caterpillars but to poison their food, the arsenical solutions should be made to fall like gentle mist upon the leaves, fine spray jets being used for this purpose.

Live stock can be kept in orchards where arsenical compounds have been used. Such compounds must not be used where gooseberries for early picking, and herbs and vegetables for early use, are grown under the trees.—Leaflet No. 4, *Board of Agriculture and Fisheries*.

Review.

How to Collect and Dry Flowering Plants and Ferns.*

In the preface to this very practical little work the author expresses the hope that it may "be found useful to many youthful botanists of both sexes, and especially to those in elementary and private schools who have not, in numerous cases, the advantages offered in some of the best secondary schools." We have no doubt that this hope will find satisfaction: for, in fulness of detail and simplicity of language, this *brochure*, of some fifty pages, leaves nothing to be desired. A short introduction leads up to sections dealing in succession with "Equipment and Collecting," with "Drying," and with "Poisoning and Mounting." Instructions for sending pressed plants by post and a short glossary of technical terms give the last touch of completeness to a treatise which errs rather on the side of exhaustive minuteness than of obscure brevity. This, no doubt, is a pardonable error, though one can hardly suppress a smile when he is informed, on p. 33, that in drying botanical paper, "dry, hot weather greatly helps the collector" and "in wet weather access to a fire or oven or kitchen rack is necessary." Such truths are so solid and indisputable as to soar into the region of truism. But if one who has wrestled with the worries of paper drying in alpine cabanes, where he has been forced to rig up complicated lines of string overnight in his cubicle to serve as clothes lines for his damp sheets, is tempted to smile at the enunciation of these elementary truths, his superior mirth is checked by a recollection of that reference in the preface to "youthful botanists of both sexes." For them such truths may have all the gloss of newness.

It is, perhaps, not quite fair to submit such works as this to literary criticism, yet one cannot help wondering that the author, when he set out to sing the praises of Nature, could hit on nothing better in the way of quotation than the cryptic and affected utterance of Max Pemberton on the subject of *l'éternel féminin*, which he gives us on p. 6. What Pemberton may mean by his query—"When was woman known to qualify the affirmative of her heart's desire?"—is by no means obvious: and we fear that the youthful botanists of both sexes will be puzzled to verify Mr. Thompson's assertion that "the affirmative of one's heart's desire is found in every field and hedgerow."

We must refrain, however, from any attempt

* "How to Collect and Dry Flowering Plants and Ferns." By Harold Stuart Thompson, F.L.S. George Routledge & Sons. Price 7d.

at breaking a butterfly on the wheel. This cheap, unpretentious and exhaustive little treatise may be warmly recommended as most useful to the botanical tyro. Such works have this high value that they lead the young student to the study of the living plant in the open field—to the pursuit of true botany, in fact. For the laboratory study of cell-structure and plant-physiology, however important and absorbing it may be, is quite consistent with total ignorance of the plant as a whole and in its complex relations as a member of the great vegetable commonwealth.

Tree Planting in Newry.

AN interesting ceremony took place in Newry on Saturday, 3rd ult., the occasion being the planting of trees on the left-hand side of Kildare Street and Trevor Hill, between the Town Hall and the Orange Hall. The trees were the gift of Mr. Thomas Smith, of the Daisy Hill Nurseries, and the planting was done under the personal supervision of his son, Mr. George Norman Smith, the sites having been previously laid out under the direction of Mr. Charles Blaney, Town Surveyor of Newry. In all, twenty-four trees were laid down.

Four of the trees were British Columbian Thorn (the one next the Town Hall, one on either side of the Stone Bridge, and one next the Orange Hall), and all the others are Copper Beech. The trees will be an ornament to the thoroughfares in which they are located, and it is hoped that the scheme which was so successfully carried out on Saturday is but the beginning of a larger undertaking in the same direction.

At the Newry Urban Council yesterday, the Chairman said that the latest generous gift of Mr. Thomas Smith, of the Daisy Hill Nursery, to the town, deserved recognition by the Council. Since he had come to Newry Mr. Smith had made Daisy Hill one of the most beautiful spots in Ireland, and he had been most liberal in response to appeals made to him for the good of the town in many ways. On this occasion he had presented twenty-four beautiful trees and sent his men on Saturday to put them down. All the expense that the Council had been at in the matter was that of opening up the roadway. He was also told that Mr. Smith had actually handed over eleven girders for the protection of the trees. That was only in keeping with his previous actions, and it was their duty to pass him a hearty vote of thanks, which he had now great pleasure in moving. They were very sorry that Mr. Smith himself could not be with them on Saturday on the occasion of the planting of the trees, because he had been laid up with a serious illness, from which he was sure they all hoped he would soon recover. But Mr. Smith's son, Mr. George N. Smith, who was a very capable and efficient gentleman, was there, and discharged his father's duties in the most satisfactory manner.

Mr. Dowdall, who cordially seconded the motion, said that Mr. Smith was worthy of all recognition and praise for the manner in which he had helped the town on all occasions, and his

latest gift would, in due course, make the locality in which the trees had been planted one of the beauty spots of the town.

Mr. Willis heartily associated himself with the vote of thanks to Mr. Smith and with the expression of sympathy with him in his illness. Mr. Smith was a well-known figure in the town of Newry, and far beyond it, and they sincerely trusted that he would soon be restored to his usual health and strength. He recollected Mr. Smith for a considerable length of time, and he had done a wonderful work in his lifetime. He had done very much to beautify the town. Daisy Hill was a monument to the ability and application of Mr. Smith. It was well-known throughout the United Kingdom, where it was almost a household word in horticulture, and even in Japan and America. It was certainly an example to the young men of any country. Beginning life without any very great assistance Mr. Smith, by his intelligence and assiduous labour, had built up a magnificent business that would undoubtedly live after him and reflect on him the greatest possible credit. His latest gift would beautify and make an avenue of that portion of the town in which the trees had been planted. This was not the first planting that had been done by Mr. Smith in the town, for he had made a very nice avenue of the roadway in the direction of Daisy Hill. He was sure they were all grateful to Mr. Smith and to his son for the interest he had taken in carrying out the work that his father wished done.

Mr. Ruddy said that they were all very sorry indeed to hear of Mr. Smith's indisposition, and hoped that he would soon be restored to his usual health.

The motion, on being put to the meeting, was passed by acclamation.

Mr. Ruddy raised the question of planting trees in the South Ward of the town, particularly between the Abattoir and Dublin Bridge Station, which, he said, would be a great improvement to that part of the town.

The Surveyor said that since the matter was last before the council it had been discussed by the Street Committee, and he thought the idea was to include something in next year's estimate for extending the scheme of tree-planting.

Mr. Willis: At present it can only be done by contributions on the part of the people. The Local Government Board has advised all councils to economise during the war.

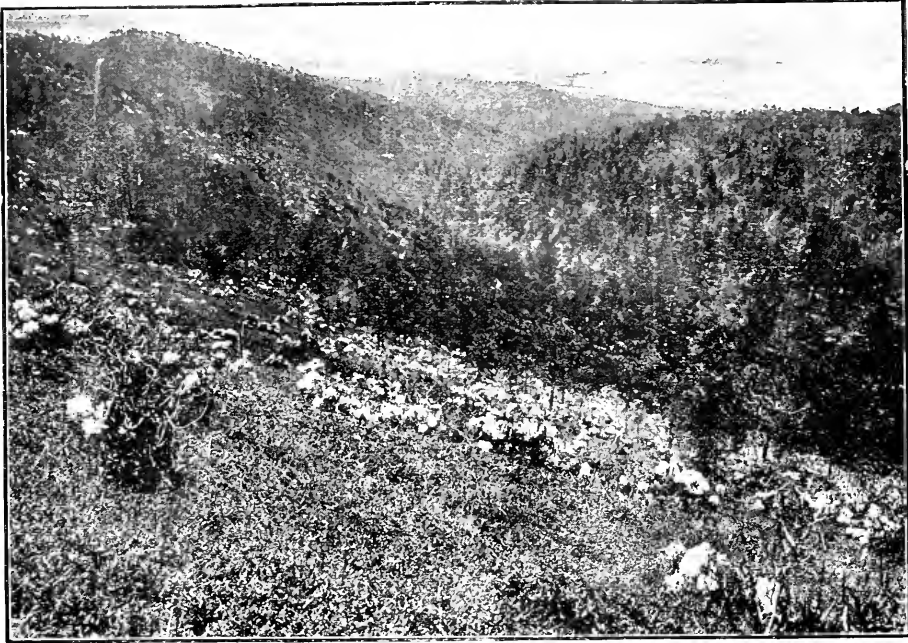
The Surveyor said that he had tried to induce the residents of Kildare Street and Trevor Hill to contribute towards the planting of the other sides of those streets. Some were quite prepared to do so, but others did not view the matter so favourably, and as it did not meet with unanimity he did not push it. One gentleman in the South Ward had offered to bear the cost of planting two or three trees, but he had not approached other residents of that ward on the subject.

It was agreed that the Town Surveyor should submit to the next meeting an estimate of the cost of planting the thoroughfare referred to by Mr. Ruddy, and the hope was expressed that in the meantime any residents of that locality desirous of assisting in the matter would kindly notify their willingness to contribute.

Autumn Tints.

If the summer was short, and the early autumn not all that could be desired, at least there have been some compensations during brief spells of fine weather in late autumn. In Ireland we do not as a rule get the brilliant autumn colour in leaves that they get in the South of England and in some Continental countries, but this year has been exceptional all through. Rarely have the autumn colours been more beautiful. In the Botanic Gardens at Glasnevin during the early part of October one could not but be struck by

beautiful golden shades, the whole forming a glorious combination of colours. Hardly less beautiful were the graceful birches, though here there is no red in the colour scheme. All die off in charming shades of yellow, which in contrast with the white trunks of some and the buff and brown of others made a lovely picture. Many of the Thorns too are beautiful, just before the leaves fall—some yellow, others assuming red tints, and all, this year, bearing an immense crop of fruits. Some of the trees are loaded with large bright scarlet Haws, and on others they are "Black as Sloes"; here and there yellow Haws are noticeable, and even some of a pinkish hue.



CHINESE RHODODENDRONS

Clearing of forest by fire. *R. Fortunei* in the foreground

Photo. by Mr. George Forrest

the many and lovely hues assumed by trees and shrubs, as the leaves having fulfilled their function prepared to part from the branches. The very large number of different species of trees and shrubs cultivated in the Botanic Gardens presents an opportunity of observing the various hues which could hardly be obtained elsewhere. From all the temperate regions of the world—Europe, Asia and America—we find trees and shrubs capable of growing in our climate, and naturally at all seasons of the year they present immense variety in appearance. Among trees one of the most beautiful was the Vine Maple, *Acer circinatum*, from N.W. America, the leaves dying off a beautiful combination of red and yellow, the red appearing first in blotches, and gradually nearly covering the leaf. Lovely too was *Acer rufinerve*, young trees of which were clothed in deep crimson. *A. nikoense* from Japan was not less beautiful, whether by the river-side or higher up on the hill, the beautiful three-parted leaves turning rich red. Many other Maples assumed

Among shrubs nothing excelled *Berberis Thunbergii* in its mantle of brilliant red leaves.

Hardly less beautiful was the shrub commonly known as *Cotoneaster acutifolia*, the leaves becoming a glowing dark crimson before falling.

Some of the Dogwoods colour beautifully, none perhaps being finer than *Cornus sanguinea*. *Euonymus latifolius*, one of the Spindle Trees or Peg-wood, was also remarkable not only for the handsome dark red of the foliage, but also for the bounteous crop of rosy-red fruits hanging in clusters from the branches.

Prominent among other ornamental berry-bearing shrubs are the Barberries, notably *B. Pratii*, *aggregata*, *Wilsonæ*, with beautiful clusters of pink fruits, while the brilliant red berries of *B. vulgaris* and its varieties are not excelled by any new species.

The *Cotoneasters* too are very noticeable at present, not only for the finely coloured foliage of some of the deciduous species, but also for the brilliant red fruits of others. Some of the best

are:—*C. Franchetii*, *C. applanata*, *C. Simonsii*, and the older species, such as *C. rotundifolia*, *C. buxifolia*, &c., while some of the black-fruited species, though not showy from afar, are extremely interesting and attractive at close quarters; among them may be instanced *C. bacillaris*, *C. Lindleyi*, and *C. moupinensis*.

An uncommon genus in gardens is *Eleutherococcus*, now included by Botanists under *Acanthopanax*. Just now some of the species are prominent by reason of the spherical heads of black fruits which show up conspicuously against the foliage: *E. Henryi*, *E. leucorrhizus*, and *E. Simonii* are examples.

Everlasting Flowers.

THROUGHOUT the winter and early spring months, when outdoor flowers are scarce, it becomes a problem how to make rooms cheerful where there are no greenhouses to draw upon and when flowers are dear to buy. At the present time owners of greenhouses in private gardens have reduced flower growing indoors to a minimum, rather devoting the space to the production of food crops for home consumption or for sending to the hospitals or the fleet. This is a laudable and much to be commended work, as not only does it ensure a supply of fresh vegetables to the soldiers and sailors, but it helps in rendering supplies more plentiful in the market for people not fortunate enough to have gardens or allotments. The result is that much more value is now attached to every flower that can be grown outside and which can be cut for the house. All summer there should be no lack of material where a proper selection of perennial herbaceous plants has been grown in the past. Michaelmas Daisies and Border Chrysanthemums will probably finish with October, though with mild weather continuing through November, as it often does, there may be pickings for some time. Generally, however, there will not be much to count on from now onwards. It is all the more necessary then to preserve all we can.

Some of the *Eryngiums* are useful for filling vases during winter; their blue prickly "heads" retain their colour and form for months and are quite attractive. *E. Oliverianum*, *E. amethystinum*, *E. planum* and *E. Zabelii* are good, and look well mixed with the feathery sprays of *Statice latifolia*, which retains its graceful form for a long time.

Gypsophila paniculata, though it loses its colour, nevertheless remains wiry, and preserves its form through the winter. To mix with it the *Helichrysums*, commonly called "Everlastings," are very pretty. These are really half-hardy annuals which may be raised in a cold frame in early spring and planted, where they are to flower, in May; many colours are found in the *Helichrysums*—white, yellow, red and brown—and they retain the colour though placed in the vases without water, but, of course, the leaves dry up and fall.

There are some plants of which the seed vessels are attractive, for instance, "*Honesty*" *Lunaria annua*; in this case the silvery central partition of the seed vessel is quite attractive

and will last through the winter, going well with other "everlasting" flowers.

Some of the grasses are pretty and interesting when cut, kept through the winter, notably the three forms of Quaking Grass—*Briza maxima*, known also as Pearl Grass; *B. media*, and *B. minor*. All three are light and graceful, and make a pretty setting for any other flowers, "everlasting" or not, which may be available. Of course, the giant Pampas Grass, *Cortaderia argentea*, is handsome, but best suited for halls or large rooms.

Other annuals useful for our purpose are the *Helipterums* or *Rhodanthes*, sometimes called "Immortelles," and which come from Australia. They can be sown in the open in April, and are attractive all summer. If cut in the autumn, they will keep attractive for a long time, mixing well with the grasses aforesaid. *Helichrysum arenarium*, a perennial with golden yellow flower heads, is useful. *Helichrysum orientale* is the source of the "Immortelles" so largely used by florists, and which can be purchased in the shops dyed blue, red and other colours, though perhaps quite as pretty in its natural colour of yellow. This species is rather tender for outdoor cultivation in this country, the dried and dyed flowers being in ordinary times largely imported from France.

Xeranthemum annuum is another annual which we can grow outside, sowing in the usual way in April, preferably in a sunny position. The colour varies from white to purplish-violet, and, in addition to being attractive in summer, the flowers are useful for winter decoration.

Ammobium alatum grandiflorum, the Winged Everlasting, so called from the stems being winged, is a rather handsome plant easily raised from seeds. These are better sown in a cold frame in spring, planting out when large enough. Though not strictly an annual, it is better to sow annually, as the plants often perish in winter, no doubt missing the more genial climate of Australia. The flowers are white and last for months after cutting.

It will thus be seen that we have quite a selection of plants which can be grown out of doors all summer and which will provide flowers to brighten our rooms through the winter. It will be well then to preserve all we can now and take note to obtain seeds of as many as possible next spring, with a view to providing against a continued dearth of indoor flowers. ANON.

Honeysuckles and other Handsome Fruiting Shrubs.

How many people have noticed the unusual show of berries on shrubs and plants this autumn? The Hollies are covered already, some of the varieties showing colour. The Honeysuckles are covered with shining berries, most of them scarlet. In other years one may notice an odd one here and there, but nothing remarkable or in the same quantities as they are this season.

Among the Honeysuckles specially noticeable are *Lonicera Henryi*, a climbing evergreen species which has quite unattractive flowers in the summer, but is now covered with clusters of leaden

grey berries with a bloom on them like a grape, which will eventually turn black. As a flowering species in a garden it is not of much interest, but if a show of berries, such as we have this year, could be counted on, it would be well worth having.

L. alpigena.—This is called the "Cherry Woodbine," and it apparently gets its name from the fruit, which is shining red hanging on a stalk just like a cherry.

L. deflexicalyx is a Chinese species with rather a spreading habit. The flowers were in pairs at the axils of the opposite leaves, and these flowers are now replaced with two or four bright orange red berries.

L. trichosantha, another native of China, with bright red berries in pairs on the long slender branches.

L. iberica.—Here again the fruits are red at the ends of the shoots and appear to be resting in a cup formed by two leaves.

L. prostrata, as its name implies, is low growing and, like *trichosantha*, its berries are in pairs along the spreading branches.

L. orientalis has black berries on very short stalks, and *L. translucens* has transparent white berries. It is a free growing bush some ten feet high, in habit and general appearance like *deflexicalyx*, but the white berries make it very distinct.

Some of the Barberries too are exceptionally free in fruiting this year, especially *Berberis vulgaris*, with its hanging, scarlet, egg-shaped berries, which being bitter to taste are not being touched by the birds.

B. aquifolium, what used to be known as Mahonia, and its many varieties are now covered with clusters of deep blue berries with a plum like bloom on them. These will hang on the plants well on into the winter, and make a good contrast with the deep red, shiny colour which the leaves turn.

Many of the Cotoneasters, too, are in good fruit, most of those known in gardens have red berries. *C. microphylla*, with its neat growing habit and small leaves, and *C. buxifolia*, and have bright red berries. *C. frigida*, a very different habit, forming almost a tree in height, with long, broad leaves, shed in the autumn, leaving hanging clusters of scarlet berries, which in hard winters are soon attacked by the birds. *C. horizontalis* too has orange red fruits. Here again the leaves are small and many of them turn scarlet, and at a distance it is sometimes impossible to distinguish between berries and leaves.

C. bacillaris is a native of the Himalayas and has hanging, dark purple, almost black, fruits, and *C. moupinensis*, a native of China, where it is a common plant, has also black fruits. Perhaps the most remarkable of all the fruiting shrubs at this season is *Euonymus latifolius*. In appearance like the common Spindle Tree or Pegwood, *E. europæus*, but the leaves are larger and longer. The fruits are hanging on slender stalks, and when ripe burst open, showing a scarlet inside on which are attached the orange red berries. Nothing could be more attractive than to stand under a large shrub of *E. latifolius* or *E. europæus* and admire those brilliant berries.

R. M. POLLOCK.

Suburban and Allotment Gardens.

GENERAL NOTE.—The work which has been suggested for the month of November should be continued and completed. By the New Year most of the ground should have been dug over or trenched as the case may be, only leaving such ground as may be occupied by Cabbages, Onions and late Celery, Leeks, &c., until the crops are cleared.

FORCING RHUBARB.—This esculent will not be in keen demand next spring unless sugar becomes more plentiful (although it might be worth while trying it with sugar beet or ordinary garden beet, taking care, of course, not to use the leaf part of the Rhubarb).

If warm sheds or other structures are available, they can be utilised for forcing the Rhubarb previously lifted. Put the roots into deep boxes, or large pots, with the crown or bud end uppermost, then fill in and around them some sandy soil, so as to just cover the roots, then give the soil a good watering, afterwards storing the boxes or pots in a warm corner, with other boxes or pots inverted over them, so as to keep the light and dust away from the stems as they begin to develop.

POTATOES.—The Potatoes which have been stored in pits or boxes should be examined in order to see whether there are any diseased or sprouting specimens. If diseased such specimens should be thrown away, and if sprouts are developing these should be removed. While Potatoes for seed purposes, if not previously selected, can be sorted out and placed ready for sprouting. This should be done by placing them in shallow boxes with the bud ends ("Rise ends," Eye ends, &c.) upwards, putting in single layers only. The boxes can be kept in the dark until sprouting has actually begun (stems lengthen quicker in the dark than in the light) and then placing them where they will get full light and air, without extremes of cold or heat, so as to develop short, sturdy shoots, which give the best results when trials are carried out to test the efficiencies of sprouters or otherwise, &c. In putting back the Potatoes which have been picked over, make sure that they are suitably housed or stored, taking care in the case of clumps or pits to prevent entrance of rain and to do all that is necessary to prevent overheating or cooling either in the pit or house as the case may be.

FLOWER BORDER.—In suburban gardens, where the flower and shrubbery borders occupy too much space, for present day gardening, proceed to remove first of all useless specimens, or overlarge shrubs, such as Cherry Laurels, and trees, if any, which are more fitted for the forest than some of the places one sees them growing in. Then reduce the size of over-grown clumps, and perhaps also the numbers of clumps of similar or like kinds, so that space can be obtained for other desired plants, whether vegetables or fruits, without diminishing the general efficiency of the garden. Certain weedy lawns can be treated similarly, either reducing the size of or removing the grass patch altogether. Ground of this kind should be dug deeply, leaving the sub-soil at the bottom, and putting in plenty of leafy refuse at the bottom, placing cow or horse manure at about nine inches from the surface (cow manure for the sandy or porous soils and horse manure for the more retentive soils). While those wishing to improve the quality of their

flowers will find that it may be possible to do certain gathering over and manuring, and perhaps replanting, or to prepare for next season's Sweet Peas, &c., during December, when time would not have been available sooner. The high prices of various fruits, as obtainable from the shops, have led many to think of growing their own Apples, Pears, Plums, &c. For small gardens, single certain trained specimens (vertical or oblique) grown on dwarfing stocks will, as a rule, give the best results, for covering walls, trellises, archways, &c. A few bush Lowl or basin-shaped specimens, also on dwarfing stocks, may be found room for. While such fruits as Strawberries, Gooseberries, and Currants are always worth growing if properly looked after. When laying fruit trees obtain them from reliable firms. Consult the County Horticultural Instructors, local gardeners, &c., as to the best varieties for your own locality, and grow the better class varieties, which are worth the room rather than those of lesser value.

W. H. J.

The Month's Work.

Midland and Northern Counties.

By W. G. NEAVE, Gardener to Lady O'Neill,
Shane's Castle, Antrim.

KITCHEN GARDEN.

THE autumn and early winter of 1917 have been a record as far as my memory goes for wet weather; the ground has been saturated so that it has been impossible to wheel and work on it. At the first opportunity manure will be got on to the vacant plots and the digging and trenching will be proceeded with; that is the principal work in this department for this month, and it pays to do it well. As I mentioned before, *deep digging* is the secret of good vegetable growing. There is too much of blackening the surface (it will do well enough they say), but they wonder what is wrong with their crops when dry weather sets in, for the roots are not down deep enough, hence they suffer at once, or you see the effects of it now during this wet weather. There is a hard bottom and the water is lying in pools and cannot get away, consequently the soil becomes sour and unfit for vegetation, so that deep digging, or better still, trenching, is essential.

The forcing of Rhubarb and Seakale must now have constant attention in order to obtain satisfactory results. The crowns must be permitted a certain period of rest before introducing them to the heat; some varieties force better than others and these should be selected. The roots should be carefully lifted with a good ball, and placed in a northern aspect, with only some litter to cover them, then according as they are required they can be placed in the desired heat in batches according to the demand or market. Seakale treat the same, only preserve the best restlets in bunches for next year's plantation.

ONIONS.—The bulbs should be examined frequently and decayed ones removed. Owing to the constant damp a lot of them are growing on the

shelves. The growths should be rubbed off and the growing ones used first.

MUSHROOMS.—Make fresh beds as soon as suitable material is available.

FRUIT GARDEN.

The planting of all fruit trees, which was recommended in last month's calendar, could not be done owing to the wet soil. No time should be lost when weather conditions are favourable to finish off all new plantations, so that all may be done before the old year is out. Finish off with a mulch of manure and see that they are staked and tied securely. The pruning of wall trees, training and tying of same, should be pushed on if weather is at all suitable; it is a mistake to leave all till early spring, when there is a rush in all departments. Collect and burn all the prunings as the work proceeds, then scatter the weed ash round the base of the trees.

INSECTS.—The present is a good month for clearing trees of insect pests, for growth is dormant and strong specifics may be employed. Follow out previous instructions and spray, spray, spray!

FLOWER GARDEN.

This is the best time if alterations are to be done to rough shrubberies (Laurels, &c.). It can be done in almost any weather if it is dry overhead. The ground should be thoroughly cleared of all perennial weed, such as nettles, Bishop Weed, Convolvulus, &c.

HERBACEOUS BORDERS can still be lifted and replanted, when the borders dry up somewhat. Roses can now be planted. Prepare the beds thoroughly with plenty of good loam if you want good results. Do not plant too deep, spread out the roots and make firm. Keep the walks and beds clean and tidy; free from leaves, &c. Sweep lawns and roll regularly.

BEDDING PLANTS.—Keep a sharp look out for decayed leaves in the boxes of Zonals. Give air to Violas and Calceolarias on fine days. Keep nuts in readiness in case of frost at night. Get stakes gathered in and tied in bundles in the sheds. Cover Dahlia tubers in case of severe frost; even if in a shed the frost will penetrate to them. Cut back Clematis of the Jackmani type and mulch them with rotten manure. If any new Climbers for the walls are required now is a good time to plant. There are some lovely Clematis and they can be planted with great effect in any dark corners.

Southern and Western Counties

By ERNEST BECKETT, Gardener to Lord
Barrymore, Fota.

KITCHEN GARDEN.

PREPARATION FOR EARLY CROPS.—Every advantage should now be taken of getting the soil worked for the reception of early crops whenever the weather permits of so doing. Borders facing south and south-west, be they ever so narrow, are a great boon, and especially when lying under a wall. Much will depend upon what they are intended to be used for, as to their preparation, but in any case *deep cultivation* will be a boon; but here I would certainly recommend keeping

the surface soil in the same position, unless the ground has been previously trenched, and then, of course, it may be turned completely over again. It is I think admitted that dark soils are more favourable for the retention of warmth, and the greater depth of soil will ensure better drainage, and also a freer use of manure and a deeper rooting medium. A rotation of cropping here will prove advantageous, if possible. Where intended for Potatoes and Peas liberally manure, but for Carrots, Turnips, &c., if the ground is in good heart, a dusting of lime or basic slag should be sufficient, and then, at the time of sowing, wood ashes and soot may be raked into the surface. Soils that are inclined to be heavy are better ridged, as by so doing the weather is able to act upon them better and a finer tilth is secured.

POTATOES.—Where means are available for growing the earliest supplies in pots or planted out in houses, the seed must receive every encouragement to form strong sprouts. If they are backward in that way place the trays in a slightly warmer structure and spray over on favourable occasions. Leafmould usually forms the greater part of the compost, as it is necessary that it should be fairly light in texture, and a little lime worked through it and turned occasionally will make it sweeter and in every way improve it. Pits and frames that were filled with leaves last year for growing the same should be now emptied and refilled again for the same purpose. The half-rotted leaves are a valuable asset in many ways, and a layer should be placed on top of the newly collected ones to prevent the latter being blown about. Tread thoroughly and allow them to settle before placing any soil on the top. Take advantage during inclement weather to repair and well wash the lights. A very important factor at this time of the year.

ONIONS.—These are keeping none to well with me this season, having a marked tendency to grow out. Keep the structure where stored as cool as possible. Frost will not injure them, and economise by using the roughest first. Onion seed is, I believe, very dear, and will probably be scarcer next time, so that any good samples may, if wished, be placed aside and planted in spring for seed production.

HORSERADISH.—The roots may now be lifted and the largest and straightest specimens stored in ashes under a north wall for use as required, and the rest placed aside for planting in the spring. As everyone knows stock can easily be increased by planting every little root. Deeply worked ground, and leaving the sets two inches beneath the surface, will ensure ideal roots.

RHUBARB.—For forcing an intermediate temperature is to be prepared, as then the stalks will not come so spindly. A little light, too, will ensure better colour also. It is really immaterial whether any soil is put over the crowns or not, so long as damping down is carried out judiciously.

FRENCH BEANS.—Where sufficient heat is at command and care and attention given them a sowing can be made in pots, and for the earliest eight inches in diameter will suffice. Crock carefully to ensure good drainage, and use a fairly light compost. Spent mushroom bed manure is ideal for the purpose of lightening the loam, which should also be of a fibrous character, if possible. The seed may be germinated quickly by standing the pots on the hot water pipes, but

directly the seed leaves appear they must be elevated as near the light as can be.

SEAKALE.—The plot may now be cleared of decayed leaves and other rubbish, and lifted or left in the ground, and dug as required for forcing, it being just a matter of choice. Preserve the side roots for making sets for next year's plantation, and any roots not strong enough for forcing, which should have the crown cut off. If these are tied in bundles of twenty-five or fifty a rough estimate of the requisite number can be obtained. Beds grown for producing Natural Kale, that is blanched without removal, and whereby excellent produce is obtained at a time when winter greens are often scarce and consequently much appreciated, should be cleaned off in the same way, and a light mulch applied, and covered with a little soil from the alleys, which will leave the beds for the time being in a tidy manner. The covering will in February have to be increased by another nine inches of finely broken soil or ashes.

CABBAGE.—Keep the ground loosened with the hoe, and if the plants need it draw a little soil to the base of them. This is especially necessary in wind-swept localities, and serves as a protection also against cold and slugs.

JERUSALEM ARTICHOKE.—These, as well as Parsnips, are best left in the ground, where they keep much better, and the slightest mulching of the ground, if necessary, will admit of their being dug in hard weather.

Continue to earth latest supplies of Celery, and during bad weather time may be profitably spent by making seed boxes, Potato trays, &c.. Cleaning and repairing tools, sheds, and linewashing the same. Sifting old potting soils, sorting Potatoes and roots, and doing everything possible to alleviate the pressure of spring work, and try and partly compensate for the general deficiency of labour.

THE FLOWER GARDEN.

The work of pruning the hardier climbing Roses on walls, fences, &c., may be carried out now, but leave the necessary attention to the Rose garden proper till a later season, excepting that the beds will be benefited by a light mulch, but avoid the use of heavy applications of wet farmyard manure, which only makes the earth colder. Hard Vines may also be pruned back, and other hardy shrubs needing spurring, for instance, *Buddleia variabilis*, and *Hydrangea paniculata*. Shrubberies may be forked through and weeds of annual duration, and not seeding and leaves, and other rubbish buried. Protection given also to tender trees and shrubs. Spruce branches are excellent for the purpose, when pointed and thrust into the ground and made secure against wind. Bracken, too, forms good protecting material, and small, choice plants often surrounded by wire cages to prevent injury may be fitted loosely. Sifted coal ashes placed round plants of a herbaceous character forms a good protection and also wards off attacks of slugs when growth recommences in spring. Hay bands placed round Tree Ferns and Banana stems where growing out in the more favoured climes will also give increased protection. Push on the work of cleaning up leaves and rubbish as fast as possible. If sufficient have been stored the rest may be burnt when dry, a quick method

of disposing of them. Lily of the Valley beds that need replanting owing to various reasons may be lifted and replanted, some of the strongest crowns being selected for growing inside if required. For replanting choose a shady spot, such as under a north wall, or fruit trees in light, well-manured soil, and plant in rows a foot apart, and when completed apply a good mulching of decayed leaves and manure.

Tie up with stout tarred cord trees that need it, such as Cypresses, Irish Yew, &c., and cut back commoner shrubs that have become bare at the base, such as Laurels and Rhododendrons. If these are cut back hard they will in a few seasons form weak specimens again. Pyracantha growing on walls, and that have become overgrown, may also be pruned severely after the show of berries has passed. Overhaul mowing machine, attend to drains and walks, stake newly planted trees and mulch them.

HARDY FRUIT GARDEN.

Make firm at the roots newly planted Strawberries. Push on pruning and nailing or tying at all favourable opportunities, and take advantage on calm days for spraying, especially when using the caustic washes. Rootprune, or lift and replant in the case of younger trees that are making too gross a growth, and return lime in some form or another where the soil is naturally deficient. Look out for silver leaf on Plums especially, and use your best endeavours not to convey it from one tree to another, as it is, I believe, contagious. Sulphate of Iron deg in round the roots is a cure also, I am told, for scab on Pears and Apples.

Correspondence.

PRUNUS LAUROCERASUS ZABELIANA.

SIR,—I notice with surprise in your issue for this month that your correspondent A. O. recommends this attractive, narrow-leaved, free-flowering, flat-growing laurel for the *front* of a border: grown in rich loam on a heavy clay subsoil it certainly covers far too much ground for any such position. One of my plants, aged 10 or 12 years, though only 5 feet 6 inches in

height, has already a circumference of 57 feet, and shows no sign of ceasing its annual considerable increase. I may add, for the guidance of other gardeners, that it is somewhat impatient of the knife, always dying back some inches behind the few cuts which I have given it so as to keep it roughly circular in shape.

As all your readers must have realised, this has been a wonderful season for fruit of all kinds, and in this way no shrubs have been more brilliant at Aldenham than the various deciduous Euonymuses and Viburnums. I can award honourable mention to *E. latifolius* (dark red), *E. plainpes* (bright red), *E. Sieboldii* (rose-pink), *E. yedoensis* (pale pink), *Viburnum ovatifolium* (rich carmine), *V. theiferum* (bright orange). Perhaps more striking than any of these are the fruits of *Sinofranchetia chinensis*. They are borne in bunches of the size and appearance of grapes, but are pointed at the apex, and of a clear light amethyst colour.

My own plant has not fruited, but Mr. Gerald Loder, of Wakehurst Park, Sussex, sent me some of his, so I am enabled to describe them.—Yours truly,
V. GIBBS.

Important Announcement.

INCREASED GRANTS FOR SCHOOL GARDENS.

THE grants for gardening, which are at present available only in respect of instruction in this subject given by men teachers to boy pupils, are to be extended so as to be available in respect of instruction given to girl pupils as well as to boy pupils, and such grants are to be paid for instruction given by duly qualified women teachers, as well as for instruction given by men teachers.

An increase on the present grants is to be provided in cases where an exceptionally large number of pupils attend the classes for instruction in gardening.

Apples for Irish Gardens.

THE article on this subject in our last issue was by Mr. Alfred Barker, Carrigoran Gardens, Newmarket-on-Fergus, Co. Clare, who also kindly sent the photographs reproduced in the present number.—ED.

INDEX TO VOL. XII.

NOTE.—The various plants mentioned in the "Month's Work" and other general articles are not indexed. Illustrated subjects are printed in italics.

- A Connemara garden*, 18.
Achillea ageratifolia, 52.
Achilleas, dwarf, 66.
Acacia dealbata, 70.
Æthionema grandiflora, 100.
Allotments, and how to cultivate them, 22.
Allotments in Belfast, 82, 104, 105.
Allotment gardens after the war, 113.
Allotments as a permanent institution, 141.
Allotments at Glasnevin, 151.
Allotments, observations on, 174.
Allium cyanicum, 150.
Alnus cremastogyne, 6.
Ammonium sulphide wash for American goose-berry mildew, 54.
Androsace chumbyi Brilliant, 88.
Androsace tibetica, 89.
Anemone rupicola, 101.
Antirrhinums, 20.
Answers to correspondents, 108, 160.
Apple, a good, 148.
Apples, useful, for Irish gardens, 162.
Arboretum, the, 98.
Astelia Cunninghamii, 157.
Atropa belladonna, 119.
Autumn flowers, 152
Autumn tints, 183.
- Ballynahinch, Galway*, 114.
Barberry, a new, 20.
Botanical science, application of, to agriculture, 92
Broccoli, 102.
Broccoli, purple sprouting, 70.
Brussels sprouts, 68.
Buddleia asiatica, 36.
- Camassias*, 83.
Campanula carpathica pelviformis, 117.
Campanula carpathica turbinata, 118.
Campanula lactiflora, 117.
Campanula portenschlagiana, 53.
Campanula × *Fergusonii*, 150.
Campanula, a hybrid, 117.
Carpathian buttercup, 100.
Caterpillars, 133.
Cherry laurels, 151.
Cistuses, the hardy, 170.
Clematis Fargesii, 21.
Climbers for walls, &c., 6.
Compost for the garden, 107.
Conifers, some good, 166.
Convolvulus cantabricus, 134.
Correspondence, 10, 41, 55, 56, 72, 119, 188.
Cornus Nuttallii, 155.
Corydalis thalictrifolia, 150.
Corylopsis Willmottiae, 37.
Cotoneaster frigida, 37.
Crab apples, 148.
- Cratægus orientalis*, 102.
Cress Rocket, the, 88.
Crops, thinning, 84.
Cross Vine, the, 7.
Cytisus Ardoimi, 88.
- Daffodils, 71.
Daphne Dauphini, 13.
Daphne Mezereum fl. albo and *Erica carnea*, 71.
Dianthus neglectus, 117.
Diervilla præcox, 88.
Digging, 39.
Dublin plotheholders, 154.
- Economy in using potatoes, 23.
Edgeworthia papyrifera, 70.
Erica cinerea coccinea, 118.
Everlasting flowers, 184.
- Farm garden, the, 107.
Flower gardening at Kew, 4, 34.
Flower associations, 92.
Flower Show, Glasgow, 157.
Food production, 1, 52.
Forestry, 97.
Forest trees of Canada, 42.
Front gardens, 49.
Fruit crop, Ireland, 120, 121, 122.
Funkia lanceifolia tardiflora, 169.
- Gardeners and food production, 17.
Garden pests, 76, 86.
Gardening for the home, 125.
Gardens in war time, 106.
Gaultheria hispida, 170.
Gentiana Freyniana, 150.
Goat's Rue, 48.
Golden Club, the, 102.
Grafting fruit trees, 58.
Greenhouse plant, a beautiful, 4.
Ground Cherry, the, 87.
- Heather, a crimson, 21.
Herbane, 132.
Herbaceous and alpine plants, 22, 70.
Herbaceous border, making of, 172.
Herbaceous borders, 51.
Herbaceous plant, a useful early-flowering, 103.
Herb industry, the, 40.
Herbs at Abbeycix, 148.
Hints on watering in greenhouses, 16.
Hoicing, 51.
Honeysuckles and other handsome fruiting shrubs, 184.
Hydrangea arborescens grandiflora, 134.
Hydrangea paniculata, 151.
Hymenanthera crassifolia, 5.
Hypericum patulum Henryi, 20.

- Iberis tenoreana petraea*, 89.
Illicium religiosum, 21.
 Insect, a rare, 106.
 Intercropping, 168.
Iris pumila cyanea, 89.
 Irises, 107.
 Irish School of Gardening for Women, 156.
- Juniperus*, the genus, and its commercial importance, 28.
- Kerria japonica*, 103.
- Lectures for Piotholders, 178.
 Leek, the cultivation of the, 90.
Leucosium ceruum carpathicum, 35.
Ligusticum aromalicum, 36.
Ligustrum Prattii, 169.
 Lilies in July, 126.
Lilium regale, 119, 149.
Lilium pseudo-tigrinum, 150.
Lilium Biondi, 150.
Lonicera ciliosa, 89.
Lonicera pileata, 169.
Lysichitum camtschaticense, 81.
- Macrotonia echioides*, 88.
 Manure for allotments, 33.
Mimosa, the, 70.
 Month's Work, the, 13, 29, 45, 61, 77, 94, 110, 126, 112, 168, 171, 186.
- Nerine flexuosa alba*, 7.
- Obituary*, 25.
Oenothera missouriensis, 149.
 Onion mildew, 133.
 Onion sets, 53.
Orontium aquaticum, 102.
- Paeonies, 112.
 Pine, the maritime, 21.
Pentstemon secundiflorus, 131.
 Pears, culture of bush, 161.
Pittosporum bicolor, 89.
Planting bulbs, 131.
Plants and the winter, 73, 101, 136, 137, 138, 139, 140, 141, 150.
 Potato growing in allotments and small gardens, 26.
 Potatoes, 135.
Potatoes, large, 102.
Primulus, notes on some new, 8.
Primula denticulata as a cut flower, 52.
Primula sinensis, the wild, 37.
Primula sino-purpurea, 88.
Primula Winteri, 71.
 Primrose Evelyn Arkwright, 99.
Prostranthera lasianthos, 133.
Pterostyrax hispidum, 102.
 Pyrethrum and Poppy, 35.
- Quercus pontica*, 6.
- Random notes, 168.
 Raspberry, the, 2.
 Reviews, 56, 57, 58, 73, 96, 103, 104, 176, 181.
Rhododendron auriculatum, 149.
Rhododendron ballatum, 168.
Rhododendron micranthum, 5.
Rhododendron rubiginosum, 118.
Rhododendron sphaeranthum, 133.
Rhododendrons, Chinese, 100, 183.
 Roll of Honour, 89.
Rosa Willmottiae, 6.
 Roses, late, 6.
 Roses, Wichuraiana Ramblers, 115.
 Rural education, 179.
- Salad plants, some easily grown, 14.
Saponaria ocyonoides versicolor, 103.
Saxifraga apiculata alba, 71.
Saxifraga burscriana magna, 53.
Saxifraga cotyledon Icelandica, 19, 37.
Saxifraga longifolia, 7.
Saxifraga paradoxa × *longifolia*, 100.
 Scarlet Runners, 76.
 Sclerotinia diseases, 71.
 Sea-kale and asparagus, forcing, 10.
Sedum pilosum, 103.
 Sedums, three years' work at, 11.
 Seed sowing, 53.
 Seed potatoes at the National Museum, 24.
 Seeds for autumn sowing, 124.
 Sidalceas, the, 61.
Snowflake, the Carpathian, 35.
 Soil cultivation, 51.
 Solanum jasminoides, 36.
 Spraying potatoes, 65.
Stephen George Rose, 89.
Sternbergias, 3, 20.
Storing fruit, 170.
 Suburban and Allotment Gardens, 12, 27, 38, 59, 75, 91, 109, 123, 142, 155, 173, 185.
 Succession crops for allotments, 67, 123.
Syringa japonica, 102.
- The Skunk Cabbage*, 92.
 Tomatoes out of doors, 69.
 Tree planting in Newry, 182.
 Trees and shrubs, 115.
Trollius asiaticus, 134.
- Vegetable food, 54.
 Vegetable harvest, the, 129.
 Vegetables, calendar of cultural operations, 80
 how to grow and exhibit, 179.
Veratrum Wilsoni, 36.
 Violas, 81.
Viola sicheana, 88.
Vitis inconstans Lowi, 169.
- Walnut Tree and Pecan Nut Tree, the, 153.
 Weeds, 85.
 Weeds, eradication of, 171.
 Winter moths, 180.
 Winter Sweet, 21.
 Winter and the rock garden, 82.
 Women on the land, 108.
 Wonderful plants, 24.
- Yuccas, hardy*, 149.

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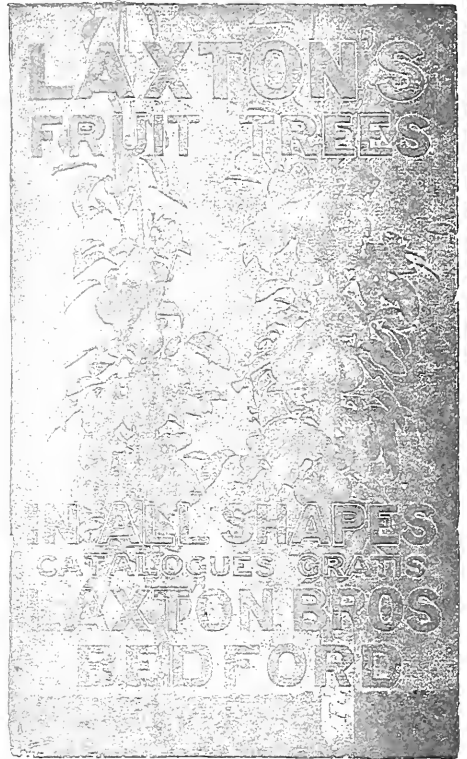
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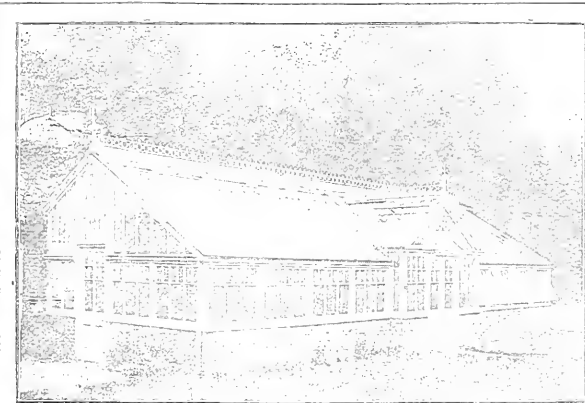
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R. H. S. Trials, 1916.

THE following awards have been made to Savoy Cabbages by the Council of the Royal Horticultural Society after trial at Wisley:—

Award of Merit.—No. 17, Norwegian, sent by Messrs. Barr, Covent Garden; No. 31, Perfection, raised, introduced and sent by Messrs. Sutton & Sons, Reading. Highly Commended.—No. 9, Sugarloaf, raised, introduced and sent by Messrs. Sutton & Sons, Reading. Commended.—No. 15, Drumhead Covent Garden Late, raised, introduced and sent by Messrs. Watkins & Simpson, London; No. 29, Perfection, sent by Messrs. Hurst, London; No. 37, Selected Drumhead, introduced and sent by Messrs. Sutton & Sons, Reading (awarded as an early variety good for market); No. 7, Tom Thumb, re-selected, sent and introduced by Messrs. Carter & Co., Raynes Park, S.W.

N.B.—The award is given to a strain, and where the trial gives evidence of the existence of several strains, as in the case of "Perfection" Nos. 29 and 31, the award applies only to the strain indicated.

Catalogues.

SUTTON'S AMATEUR'S GUIDE.—We have been favoured with a copy of the 1917 issue of this excellent work and find it as sumptuous and useful as ever. Messrs. Sutton's fame for strains of vegetable and flower seeds is world-wide, and

has not diminished since the outbreak of war. Realising the importance of an ample food supply and the likelihood of a shortage from external sources, they immediately concentrated on providing a plentiful supply of first class seeds of vegetables. Their supplies have been admirably maintained both in quantity and quality, and their novelties are always welcomed. The present issue is as full of interest as any of its predecessors.

MESSRS. WEBB & SONS, Wordsley, Stourbridge, favour us with a copy of their seed list for 1917. They rightly urge the necessity for increased production from our gardens, and the selection of vegetable seeds offered is remarkably full and complete. We would especially direct the attention of amateurs to the collections, for a year's supply of vegetables, ranging from 2s. 6d. upwards. Needless to say, flower seeds are well represented, and all who require such will find their wants amply catered for.

SIR JAMES MACKEY, LTD., the well known Dublin seedsmen, have issued their new catalogue for 1917. As befits the times, first attention is given to vegetables, and in addition to their standard strains numerous novelties find a place. Despite great difficulties adequate supplies of most things are available, and no garden need be without a full supply of vegetables during the coming season. Flower seeds, too, are offered in quantity as well as grass seeds and garden sundries. Printed on excellent paper and produced in first class style, it forms a useful garden manual.

WAR TIME SEEDS

FOR YOUR GARDEN

SEED POTATOES, SWEET PEAS, &c.

GET OUR SPECIAL LIST

EDMONDSON BROS.
10 DAME STREET ——— DUBLIN

Reviews.

Concrete and Constructional Engineering.*

WE have received a copy of the above Journal, containing among other interesting items a supplement dealing with the use of concrete for garden edgings. As a rule we do not care for hard stiff edgings in the garden, but there are situations in which they are necessary. For instance, a strong edging is very often necessary to a carriage drive where there is much traffic and where it is undesirable to have grass. Suitable stones are often difficult to procure, and in normal times cement is not expensive. Again, stone edgings are frequently used in conjunction with flagged paths, now so popular in certain styles of gardening. In suburban and other small gardens permanent edgings are frequently preferable to grass on account of the labour in keeping the latter, and the hard line of the permanent edging can be broken by the use of low-growing plants.

In the supplement referred to different types of edgings are illustrated with instructions as to their manufacture. Probably when this method of using concrete becomes better known through the medium of the gardening Press there will be a considerable extension of its use.

Annuals and Biennials.†

By GERTRUDE JEKYLL, with Cultural Notes by E. H. JENKINS.

DESPITE the abnormal conditions of the last two and a half years there are still people enthusiastic enough to write books on gardening matters. So long as it does not interfere with the one great object of national importance we

* Published at 4 Catherine St., Aldwych, W.C.

† Published by *Country Life*, Ltd., 20 Tavistock Street, Covent Garden, W.C.; George Newnes, Ltd., 8-11 Southampton Street, W.C.; New York; Charles Scribner's Sons. Price, 7s. 6d.

are glad, and it augurs well for an early resumption of gardening when more peaceful times return.

The present volume maintains on the whole the high standard we would expect from such a patron of gardening as Miss Jekyll and from such a well known practical cultivator as E. H. Jenkins. Needless to say, the printing and general production of the work is in the usual high class style we associate with the "Country Life" Library. Printed in bold, clear type on good paper, reading is a pleasure, while the numerous illustrations, several in colour, are of the highest excellence.

The book is divided into three parts—the first of numerous chapters describing various ways of using annuals and biennials, seed raising and subsequent cultivation; part two gives an admirable and most complete alphabetical list, with descriptions and colour of all the best annuals and biennials, and part three gives a colour chart with heights and also selections for various purposes—surely no amateur could ask for more.

Generally speaking, the cultural recommendations are sound, though the authors—skilled though they be—have not, we think, realised to the full the value of annuals for a summer display, nor the comparative hardiness of so-called half-hardy annuals. The use of hardy annuals sown *in situ* for a border display may be good enough for those who want a brief show, but from the middle of July to end of August is too short; far better sow half-hardy annuals in a cold frame in early March, plant out in June, and have a display from July to October. Here practically all our half-hardy annuals and some hardy ones are sown in cold frames early in March and pricked out when large enough; they provide fine sturdy stuff for planting out in June. Two things which benefit from a little heat are Verbenas and Petunias. Our best hardy annuals are those sown in cold frames in seed trays during October and November and pricked out by the workmen on wet days during winter and early spring: treated thus, Larkspurs, Clarkias, Godetias, Chrysanthemums, &c., grow very strongly and flower nearly all summer.

We have derived much pleasure from a perusal of this book, and heartily recommend it to amateurs and others desirous of realising the immense possibilities in annuals.

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FINEST OBTAINABLE

and grown on an
exposed situation
succeed where
others fail.

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Winter Spraying of Fruit Trees.

THE following extracts are from the "Spraying Calendar," given by Professor Pickering, M.A., F.R.S., Director of the Woburn Experimental Fruit Farm, and F. V. Theobald, M.A., Vice-Principal, South Eastern Agricultural College, Wye, Kent, in their very useful handbook, "Fruit Trees and their Enemies." (Copies of this book can be had post free for 1s. 9d. each.)

"Apart from the consideration of the direct action of a winter wash in destroying various pests which are probably present, moss, lichen and dead bark must always accumulate, and the freer trees are kept from these the healthier they will be, and the less will be the opportunities afforded for insects to flourish on them."

"From January to March.—Spray tree with a caustic paraffin emulsion for cleansing them of dead bark, and destroying moss, lichen, mussel scale, small apple, ermin moth, gooseberry and currant scale, grosbeak spider, currant shoot and fruit moth, pear leaf blister mite, and possibly other insects."

Winter spraying is now resorted to by practically every up-to-date fruit grower. The formula most recommended for Winter Spraying Emulsion is as follows:—Soft soap $\frac{1}{2}$ lb.; paraffin (solar distillate), 5 pints; caustic soda, 2 to $2\frac{1}{2}$ lbs.; water, 9 $\frac{1}{2}$ gallons. The necessary articles for this and all other Spraying and Fumigating Mixtures can be had, with directions for mixing, from D. M. Watson, M.P.S., Horticultural Chemist, 61 South Great George's Street, Dublin. Phone, 1971.

Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE DAY

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A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for spraying and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use.

It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 3/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 45/-; 1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers Analysis on Application

Sold in Tins, 8d., 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 23 lbs., 8/8; 56 lbs., 13/6; 112 lbs., 22/6

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"OPTIMUS" WORM POWDER

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For the complete destruction of Worms on Lawns, Bowling Greens, Putting Greens, and Golf Links.

NOT INJURIOUS TO ANIMALS OR BIRDS.

Prices—

Lbs.	7	14	28	56	112	5 cwt.	10 cwt.	1 ton
Each	1/9	2/-	5/-	7/6	12/-	57/6	110/-	210/-

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To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 6d. each.

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No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

FOWLER'S LAWN SAND

This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, $\frac{1}{2}$ cwt., 8/6; $\frac{1}{4}$ cwt., 16/-; 1 cwt., 30/-

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Ensures success in your garden: so compounded from the finest ingredients procurable as to combine **STIMULATING** with **LASTING** effects, producing in every crop vigorous, healthy and fruitful growth.

The direct result of **LONG PRACTICAL** experience in gardening.

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PRICES—Vine, Plant and Vegetable Manure—1 cwt., 29/-; 50 lbs., 12/6; 28 lbs., 7/6; 14 lbs., 4/6; 7 lbs., 2/6; tins, 2/6, 1/- and 6d. Car. paid anywhere on 56 lbs. and up. Special Chrysanthemum & Topdressing Manure—56 lbs., 20/-; 28 lbs., 11/-; 14 lbs., 6/-; 7 lbs., 2/6; tins, 1/- Car. paid anywhere on 28 lbs. and up.

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Dublin Wholesale Markets.

DURING last month the tone of the market was not what one would expect at that season of the year. The severity of the weather during the early part of the month, and the cold snap towards Christmas, had a detrimental effect on the supplies of garden produce.

In the fruit section, Irish grown apples were sent in, packed in barrels; but there were a few bushel boxes to be seen. A consignment of apples from Bellurbit, packed on the system advocated by the Department of Agriculture, and bearing the brand of the Ulster Fruit Growers' Association, arrived in excellent condition, and realised the handsome figure of 45s. per barrel. On the whole, only a liberal supply reached the salesmen, and the prices realised were about the average. There was a fair quantity of American apples, for which there was a good demand, and prices held firm. Grapes were moderately supplied, and realised ordinary prices.

The only flowers offered for sale in quantity were Chrysanthemums, and these were eagerly bought up, principally for the hospitals. There were also supplies of Smilax and Holly.

In the vegetable section, supplies were not up to the usual standard, and the returns were in some instances disappointing. Cabbages improved in price towards the end of the month. Savoys have also advanced, and the quality was good. Cauliflowers were in good demand, the quality was fair. Celery arrived daily, and was eagerly sought after, but the returns were rather poor. Carrots and parsnips were equally well supplied. Brussels sprouts are still arriving, and effect a ready sale. Onions are scarce and dear.

The following is the price list for the month:—

	FRUIT.	From		To	
		s.	d.	s.	d.
Apples—					
American	per barrel	38	0	40	6
Irish, Select	..	—	—	45	0
.. Mixed	..	25	0	30	6
..	per box	—	—	15	0
	FLOWERS.				
Chrysanthemums	per doz. bunches	1	6	2	0
Smilax	..	0	10	1	0
Mistletoe	..	1	9	2	0

	VEGETABLES.	From		To	
		s.	d.	s.	d.
Cabbages	per load	12	0	33	0
.. Savoy	..	14	0	31	0
Celery	per doz. bunches	1	8	3	0
Carrots	..	1	0	1	4
Beet	per ½ bushel	1	4	1	6
Leeks	per doz. bunches	1	6	2	0
Artichokes.					
Jerusalem	per ½ bushel	1	9	2	0
Cauliflowers	per basket	3	0	3	6
Parsley	per tray	1	0	1	6
Brussels Sprouts	per float	4	0	4	6
Turnips, White	per doz. bunches	0	2	0	4
Sage	..	0	4	0	6
Thyme	..	1	3	1	6
Onions	per ½ bushel	—	—	3	0
Parsnips	per sack	—	—	3	0

R. J. B.

1917 New Volume IRISH GARDENING

THE new volume will sustain the old standard of excellence as to authoritative articles on both the practical and scientific side of gardening, but new features and new writers will be introduced during the course of the year. Every Irish gardener and every owner of any size garden in Ireland should obtain IRISH GARDENING (monthly) and read it! and having read it should preserve it for binding—it is worth it.

Last year's volume (1916) can be supplied bound in Green Cloth, 5/- post free.

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CAUSTIC SODA, 98 per cent.
PARAFFIN (SOLAR DISTILLATE)
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1/- 6in for 25 galls. solution

1/2 " 25 " "

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1 gallon - 2/- - 6dram 3d.

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Hypericum calycinum (St. John's Wort), 2/6 doz.; 15/- 100.

Hypericum hircinum nanum, 4/- doz. Moserianum . . . 4/- doz.

Genista hispanica, 12 in. bushy, 4/- doz.; 25/- 100.

Whin or Gorse, double-flowering, nice plants, 3/- to 5/- doz

Beech, purple, 2 to 3 ft., 5/- doz.; 3 to 4 ft. 8/- doz.

Veronica cypresoides, 4/- doz.; *V. Hectorii*, 6/- doz.

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are admitted by general consent to be the best for the soil and climate of Ireland. They are the produce of our own stock seeds, and at our extensive trial grounds every variety, before being sent out, is thoroughly tested, and exhaustive experiments are constantly being initiated and carried out with the object of still further improving our stocks.

THOSE WHO WISH TO GROW THE BEST CROPS SHOULD SOW THE BEST SEEDS, and we would point out that, all our seed crops being carefully grown and harvested under personal supervision, our seeds are of highest purity and germination.

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Prices moderate. It will pay you to look through our catalogue, a copy of which will be sent post free. :: ::

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of the usual best quality, has been increased to 1½d. per packet.

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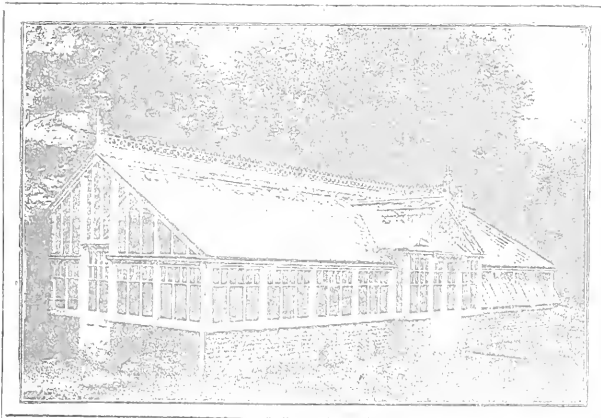
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**VEGETABLES
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WAR-TIME GARDENING

MEANS

to obtain the maximum amount of produce that the ground is capable of yielding. It must, however, be borne in mind that the **FINEST CROPS** can only be obtained by sowing the **FINEST SEEDS** and using the **BEST FERTILISERS**.

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Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held at the Society's Office, 5 Molesworth Street, Dublin, on the 12th ult. Present:—Messrs. J. Wylie-Henderson, W. Fisher, G. Bill, Robert Anderson, Sir Frederick W. Moore, E. D'Olier, G. M. Ross, M.A.; J. E. Geoghegan, M.A.; Rev. Canon Hayes, Francis V. Westby, D.L.; and James J. McDonough, with Mr. R. T. Harris, LL.D., presiding. Regrets at inability to attend were received from Messrs. P. H. Walpole, A. V. Montgomery and George Watson. Messrs. E. Walpole and R. T. Harris were re-elected Chairman and Vice-Chairman respectively. Sir Frederick W. Moore Hon. Secretary and the various committees were appointed for the ensuing year. Letters from Lady Moore and Lady Arnott were read. It being now definitely known that the Royal Dublin Society's premises at Ballsbridge, being in possession of the military, will not be available for the spring show, the Secretary was directed to notify members of the Society that the Council regret it will not be possible to hold the spring show, but that it is hoped to make arrangements for an important show and fête in August. Sir Frederick Moore reported, for the Irish Branch of the Vegetable Products Committee working under the auspices of the Royal Horticultural Society of Ireland, that he had, that day, been able to purchase a quantity of high grade apples, samples of which were on the table, on advantageous terms, for despatch to the Grand Fleet and to the Irish Naval Bases.

Answers to Correspondents.

GOOSEBERRY MILDEW.

"ANXIOUS."—We have no knowledge of the use of "Sar" in this country. It is essential to remove several inches from the ends of the shoots when pruning, as the pest is most prevalent there. Immediately *now* spray with blue stone—1 lb. to 15 gallons of water—and again *before* the buds open. When the leaves are fully developed, spray with sulphide of potassium— $\frac{1}{2}$ oz. to a gallon of water. A gallon ought to do at least 12 bushes, so that 16-18 gallons ought to do the lot, thus 8-9 ozs. of sulphide would be sufficient. See also IRISH GARDENING for 2 May, 1916, for latest information.

Catalogues.

ON the eve of going to press we have received a copy of WM. POWERS & Co.'s new seed list for 1917. Produced in their usual high-class style and replete with abundance of beautiful illustrations, it is an excellent Garden Guide. At the present time, when so many are taking up vegetable growing for the first time, the collections of vegetable seeds offered on page 3 will be welcome. From 2s. 6d. to 10s. 6d. post free these collections include all the best and most useful varieties, and should be just the thing for allotment holders. On page 26 a useful calendar of monthly operations is given which should prove vastly useful for reference. Needless to say all the best vegetables and flowers are listed in the body of the catalogue, and Messrs. Powers' strains have a reputation which should ensure abundant sales and equally abundant crops.

EDMONDSON BROTHERS have favoured us with a copy of their 1917 Seed List, and we find it as useful and interesting as ever. While rightly emphasising the comparative scarcity of many necessary seeds they have, nevertheless, made up a good list, and their numerous patrons will find their wants amply catered for. Vegetables are largely in everyone's mind this year, and Edmondson's are apparently in a position to meet all reasonable demands. Flower seeds, too, are offered in admirable variety, and will doubtless find many purchasers.

DICKSON'S, Chester, need no introduction to readers of IRISH GARDENING, and their well-known strains of Vegetable and Flower Seeds are again prominently before us. Their selections lack nothing in variety, and there need be no lack of flowers and vegetables with their list to select from.

LITTLE & BALLANTYNE, Carlisle, an old established firm, have also issued their customary full and complete catalogue of seeds, including novelties of recent introduction, and their many customers will find all their requirements fully met.

SPRAY THIS WINTER WITH

COOPER'S WINTER FLUID

AND ENSURE
**CLEAN, HEALTHY, VIGOROUS
AND FRUITFUL TREES**

There is no **WAR ECONOMY** in neglecting to spray this winter.

ON FRUIT TREES, SPRAYING IS THE BEST AND MOST EFFECTIVE METHOD OF PREVENTING THE INFECTION OF THE BUDS BY THE MILDEW.

NEWSPAPER FRUIT PLANTATION.
ROSS, Herefordshire.
"COOPER'S WINTER FLUID" IS A MOST EXCELLENT WINTER WASH. This, with its cleaning the trees of any dirt, is the best method of preventing the infection of the buds by the mildew.

GETTING & NEWTON

1 Gall. Drum 7-6; 2 Gall. Drum 14-6; 5 Gall. Drum 32-6
Special quantities for 10 Gall. Casks on application.

1 Gall. makes 100 Galls. Wash. Of Agents Everywhere

Sole Manufacturers,
WILLIAM COOPER & KEMPSON, BERNHAMSTED

Have You a Garden?

SOW...

DRUMMONDS'

CELEBRATED

Vegetable & Flower Seeds

AWARDED 97 FIRST PRIZES IN 1914-15

W. Drummond & Sons, Ltd

57 & 58 Dawson Street, DUBLIN

Walpoles' Irish Linen

Luxurious Necessity

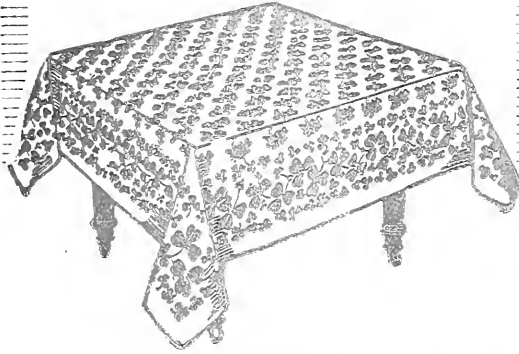
No. 61. S. As Illustrated. This Table Cloth is prettily designed with shamrock sprays, and is made from a superior grade of heavy pure linen damask. It will wash and wear splendidly.

Cloths—2 by 3 yards, 12 3 each. 2 by 2 1/2 yards, 15 3 each.
 3 by 3 15 3 2 1/2 by 2 1/2 10 3 ..
 2 1/2 by 3 20 3 2 1/2 by 2 1/2 26 9 ..

Napkins—Breakfast size, 12 6 doz. Dinner Size, 18 0 doz.
 Also in striped and other Floral Designs.
 All Orders are sent Carriage Paid.

WALPOLES'

8, 9, 10 Suffolk St., DUBLIN



Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE 'DAY

"NIQUAS"

(NON-POISONOUS) IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use. It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 45/-; 1 gallon sufficient for 50 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers
 Analysis on Application

Sold in Tins, 6d., 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 28 lbs., 8/6; 56 lbs., 13/6; 112 lbs., 22/6

CORRY'S

"OPTIMUS" WORM POWDER

(NON-POISONOUS)

For the complete destruction of Worms on Lawns, Bowling Greens, Putting Greens, and Golf Links.
 NOT INJURIOUS TO ANIMALS OR BIRDS.

Prices—

Lbs. 7 1/2 28 56 112 5 cwt. 10 cwt. 1 ton
 Each 1/9 3/4 5/- 7/6 12/- for 57/6 110/- 210/-

For Fumigating in Greenhouses.

"LETHORION" IMPROVED METAL CONES

Registered No. 62,327

To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 6s. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 8d. each.

No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

FOWLER'S LAWN SAND

This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 3/- each; Kegs, 1/2 cwt., 3/6; 1/4 cwt., 16/-; 1 cwt., 30/-

ELLIOTT'S

"SUMMER CLOUD" SHADING

Registered Trade Mark No. 14,026.

(The only genuine original and improved article)

For Greenhouses. A pleasant green shade is given to the glass. In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & Co., Ltd., LONDON

Merchants and Manufacturers of Nurserymen, Seedsmen and Florists' Sundries and Tobacco Preparations Free of Duty, for Agricultural and Horticultural Purposes.

THOMSON'S

VINE, PLANT & VEGETABLE MANURE

Famous for over 30 Years

Ensures success in your garden: so compounded from the finest ingredients procurable as to combine **STIMULATING** with **LASTING** effects, producing in every crop vigorous, healthy and fruitful growth.

The direct result of **LONG PRACTICAL** experience in gardening.

Used by Amateur and Professional Gardeners the world over.

THOMSON'S SPECIAL CHRYSANTHEMUM AND TOP DRESSING MANURE

PRICES—Vine, Plant and Vegetable Manure—1 cwt., 20/-; 50 lbs., 12/6; 28 lbs., 7/6; 14 lbs., 4/6; 7 lbs., 2/6; tins, 2s. 1/- and 6d. Cash paid anywhere on 56 lbs. and up. Special Chrysanthemum & Topdressing Manure—56 lbs., 20/-; 28 lbs., 11/-; 14 lbs., 6/-; 7 lbs., 3/6; tins, 1/- Cash paid anywhere on 28 lbs. and up.

Sold by all Seedmen OR FROM

SOLE MAKERS

W^m THOMSON & SONS, LTD. CLOVENFORDS, N.B.

"**HAWLMARK**" ENTERPRISE.—In the *Northern Whig* of January 1st appeared a fine illustration of Messrs. A. Dickson & Sons' handsome new premises in Belfast. Of imposing appearance and admirably equipped for business, this noble building is emblematic of the firm's enterprise and success. Readers of IRISH GARDENING need no introduction to our friends, who first set up business as long ago as 1836, and have steadily built up a world-wide connection. Primarily identified with Roses, of which they have raised hundreds of celebrated varieties, their activities are manifold, and embrace seed growing bulb growing and floral decoration. As growers, raisers, and exhibitors of Sweet Peas they have reached front rank, and in the present urgently important lines of farm and vegetable seeds they are the vendors of numerous notable strains. Their new catalogues are now in the hands of their customers, and with the increased facilities resulting from the possession of new and improved premises we have no doubt they will be rewarded by an increased volume of business.

Sweet Pea Annual 1917.

This annual, issued by the National Sweet Pea Society, free to all members of the society, is now ready and is full of most interesting matter for all growers of the "queen of Annuals." It is profusely illustrated, one of the most striking of the illustrations being a photograph of a French taken out for Sweet Peas in the garden of Mr. Gerard Black at Clareville.

Mr. Black knows how it should be done, and does it, how few do, this picture is an object lesson to all Sweet Pea growers, do and do likewise. Some of the most interesting articles are—"New Early-flowering Long Season Sweet Peas," and "Winter-flowering Spencers," showing how blooms can be had for ten months out of the twelve. Sweet Peas in Nova Scotia, in Devon, at the Front, are well described; "Impressions" by Thomas Stevenson, and "Random Notes" by G. H. Burt are full of information, and "What Scotsmen have done for Sweet Peas" are short notes of the achievements of some of the great leaders, in the marvellous improvements that have been accomplished in the beauty, form and

Winter Spraying of Fruit Trees.

THE following extracts are from the "Spraying Calendar," given by Professor Pickering, M.A., F.R.S., Director of the Woburn Experimental Fruit Farm, and F. V. Theobald, M.A., Vice-Principal, South Eastern Agricultural College, Wye, Kent, in their very useful handbook, "Fruit Trees and their Enemies." (Copies of this book can be had post free for 1s. 9d. each.)

"Apart from the consideration of the direct action of a winter wash in destroying various pests which are probably present, moss, lichen and dead bark must always accumulate, and the fruit trees are kept from these the healthier they will be, and the less will be the opportunities afforded for insects to flourish on them."

"From January to March.—Spray tree with a caustic paraffin emulsion for cleansing them of dead bark, and destroying moss, lichen, mussel scale, small apple, ermin moth, gooseberry and currant scale, gooseberry spider, currant saw, and fruit moth, pear leaf blister mite, and possibly other insects."

Winter spraying is now resorted to by practically every up-to-date fruit grower. The formula most recommended for Winter Spraying Emulsion is as follows:—Soft soap $\frac{1}{2}$ lb.; paraffin (sole distillate), 5 pints; caustic soda, 2 to 2½ lbs.; water, 2 gallons. The necessary articles for this and all other Spraying and Fumigating Mixtures can be had, with directions for mixing, from D. M. Watson, M.P.S., Agricultural Chemist, 61 South Great George's street, Dublin. Phone, 1971.

Language of the most popular of all the annuals, since Mr. Henry Eckford (himself a Lothian) undertook the great work of his life, the ennobling of the Sweet Pea. The National Sweet Pea Society's Secretary, Mr. H. D. Tigwell, Greenford, Middlesex, will welcome as members all who take an interest in Sweet Peas, the subscription being only five shillings.

CHEALS' NURSERIES

ORNAMENTAL TREES, SHRUBS
ROSES, FRUIT TREES, &c. &c.

in immense quantities and
in the prime of condition.

Send for Catalogue to

J. CHEALS & SONS, LTD.
The Nurseries, Hawley, Sussex.

THE NONE-SO-HARDY Nursery Products

Are absolutely healthy and regularly transplanted
(Department Inspected)

at the following prices:

APPLE TREES, in fruiting state, 9/- to 15/- doz.

LARCH, SCOTCH, SPRUCE, splendid plant-

ing stock, from 2/5 per 100; also from 20/- per 1,000

TRACER QUICKS, from 10/- to 25/- per 1,000

and other Trees and Shrubs for general planting at
similar low rates.

A small order will convince of the very meritorious
quality of our stock.

Very extensive stock to select from. Satisfaction
assured. Catalogues free on application.

J. RAMMOND, "None-so-Hardy" Nurseries
SKILLELAGH

FARMERS AND THE STATE

National Duty

Through the efforts of the State a great extra quantity of food for the year is absolutely necessary to assure the population against the danger of starvation. The farmer alone can supply that need.

Guarantee Against Loss

To secure the farmer in his performing this vital duty the Government have guaranteed him a fixed or contract price for his wheat and potatoes of the 1917 crop.

Means of Production

The Department of Agriculture have taken special measures to ensure that a supply of seeds, manures, and implements will be available in Ireland for the entire tillage. Loans for seeds and manures are being made available by the Loan Government Board through the Rural and Urban District Councils for holders under £10 valuation, and loans for implements and machinery will be provided by the Department for other holders.

Compulsory Tillage

Under the Defence of the Realm Act occupiers who hold ten acres or over are required to cultivate in 1917, one-tenth of the area a part of their holdings in addition to their tillage area of last year. That is, if you hold say, 10 acres of which 2 are arable, you must till the same amount that you tilled last year and 8 acres in addition.

Arable Land

Means land which is cultivated or can be cultivated. Every farmer knows just what portion of his land can be cultivated. Therefore do not wait for an inspector to tell you. Go ahead and

PLOUGH NOW

With the horses and the ploughs at present in the country, we have enough of both in most districts. Motor tractors are good, but there are few of them yet in Ireland, and a supply may not get here in time. Don't wait for them. Use the horse and plough at once.

Seed is being kept for you to purchase. Loans will be provided. Manures are being made. Consult your County Committee, your County Agricultural Instructor, and the Department. Get to work on your arable land. Leave the appealing and the asking for exemption to others.

THERE NEED BE NO SCARCITY OF FOOD IF THE IRISH FARMERS DO THEIR DUTY AND WORK HARD.

IRISH GARDENING

Dublin and other Markets.

Record of Rainfall for Twelve Months 1916.

The continuing severe weather has led to the effect of a shortage of retail supplies in the Dublin Markets. These has, however, been amply made up in prices.

The supply of Potatoes was under average and prices considerably over a month. This was probably owing to the continued scarcity of sugar.

Following on this, the grown flowers were very scarce as the business is falling off in the early and middle seasons. A considerable supply of foreign flowers is now coming, and can be obtained in reasonable prices.

Vegetable supplies were normal. York and Devonshire and the best of Cauliflowers of very inferior quality, but a fair quantity of Brussels Sprouts were in sale. Celery was well supplied and of good quality. Carrots were good and of fair quality. There was a marked falling off in Turnips, heads of small and affected quality. Salad tubers continue to be scarce, and owing to the foggy conditions being somewhat interfered with owing to shipping conditions, prices were very high.

The following is a price list for the month:-

	From	To
Apples	5	8
Anjou	30	40
Dish	24	30
Golden Wonder	2	3
The following are prices:		
Orange	12	14
Saxony	15	20
Cauliflower	2	3
Celery	3	5
Carrots	0	8
Brussels	3	7
Cabbages	0	3
Brussels Sprouts	1	2
Turnips	0	3
Jersey	1	2
Parsley	1	3
Spinach	0	3
Horse Radish	0	3
Thyme	1	3
Rhubarb	2	3

Clayton and Sons, 10, South Circular Road, Dublin.
 3/6, 4/6, 5/6, 6/6, 7/6, 8/6, 9/6, 10/6, 11/6, 12/6, 13/6, 14/6, 15/6, 16/6, 17/6, 18/6, 19/6, 20/6, 21/6, 22/6, 23/6, 24/6, 25/6, 26/6, 27/6, 28/6, 29/6, 30/6.

Inches	Rain fell on 29 days of the month.
Jan. 1.76	"
Feb. 1.51	" 23
Mar. 1.37	" 17
April 3.93	" 21
May 2.11	" 19
June 3.09	" 16
July 1.29	" 14
Aug. 2.29	" 15
Sept. 1.15	" 16
Oct. 1.78	" 26
Nov. 1.55	" 27
Dec. 2.25	" 21

35.67
 Showing a total fall of 35.67 inches and 246 days on which it fell.

J. MATTHEWS,
 The Gardens, Dublin, Cappoquin,
 Co. Waterford.

IRISH GARDENING

This new volume will sustain the old standard of excellence as to authoritative notes on both the practical and scientific side of gardening, but new features and new chapters will be put upon it during the course of the year. The Irish gardener and every lover of a large garden in Ireland should read **IRISH GARDENING** and having read it, should preserve it for binding—his own.

Last year's volume (1916) can be supplied bound in Green Cloth, 5/- plus free.

THE GARDENERS' SUPPLY CO. LTD.

10, SOUTH CIRCULAR ROAD, DUBLIN.

THE GARDENERS' SUPPLY CO. LTD. OF FRUIT TREES

to remove Lichen, &c.

<p>BERGEN'S LIME-SULPHUR WASH</p> <p>CAUSTIC SODA (3 per cent.)</p> <p>PARAFFIN (SOLAR DISTILLATE)</p> <p>FINE LOAF SOAP</p>	<p>COPPER SULPHATE, 98 per cent.</p> <p>COPPERED WINTER</p> <p>SPRAY FLUID</p> <p style="text-align: center;">&c., &c.</p>
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HORTICULTURAL CHEMIST

81 South, Green George's Street, **DUBLIN**

Miscellaneous Section.

SEED of choice and rare ALPINES, from a very large collection. All those who possess a ROCK GARDEN should send for my Catalogue, they will find something new and desirable. H. CORREYON, CHENE-BOURG, GENEVA.

DAISY HILL NURSERY, NEWRY

is the most interesting Nursery in the Country and contains the most complete Collections of Shrubs and Plants extant. T. SMITH.

SANKEY'S PATENT GARDEN POTS
 The BEST and Cheapest.
 State quantity, weight, &c. of Pots and give carriage and packing quotation (carriage & packing amounts to half value of goods) or write for Price List, free.
 SPECIAL POT'S of all descriptions. Ball Bowls and Fern Pots from 2s. each.
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 Bulwell Potteries, NOTTINGHAM.

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SWEET PEAS

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 THE SWEET PEA SPECIALIST
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New Catalogues Now Ready, Free

Perennial and Alpine.
 Hardy Ferns. Seed.
 Japanese Lilies.
 Water Lilies and Bog Plants.

HARDY PLANT FARM, ENFIELD, MIDD.

AUTO-SHREDS

IS CERTAIN DEATH to Leaf-mining Maggots, Mealy Bug and all Pests infesting plants under glass, &c. Simple to use, no apparatus required. In Boxes to Fumigate 1,000 cubic feet, 6d.; 10,000 cubic feet, 3s. 6d. each. Obtained of Seedsmen and Florists; if unobtainable apply direct—

W. DARLINGTON & SONS,
 Ltd.

Wholesale Horticultural Sundriesmen,
 HACKNEY, LONDON, N.E.



Trade Terms and Catalogue of Sundries upon receipt of business card

NOW IS THE TIME TO PLANT KELWAY'S GLADIOLUS BULBS (All British) if you wish to have a glorious display of flowers in the Autumn when blooms are scarce.

Kelway's, the champion growers of Gladioli, are offering a wide selection of beautiful varieties in all colours at greatly reduced prices during the war.

Write at once for their illustrated catalogue and make a selection that will enable you to send flowers to the Wounded Soldiers in Hospitals and Nursing Homes from July till the frosts come. Gladioli are invaluable for cutting, as every bud opens in water. They last for a fortnight and are so bright and cheerful that they are particularly well suited to Invalids. For decoration of all kinds the Gladiolus Kelwayi is pre-eminent.

Carriage paid and packing free for prepaid order.
KELWAY & SON, Retail Plant Department,
 LANGPORT, SOMERSET.

SEEDS

SEEDS

VEGETABLE

FLOWER

HIGHEST QUALITY

BEST VALUE

Please write for our unique 124 page pocket seed guide, full of practical and useful information free.
THE PREMIER SEED CO., Ltd., 117 London Road, BRIGHTON

'EUREKA' WEED KILLER.

SAVES WEARY WEEDING.

30 gallons of mixed solution will kill all weeds on 200 square yards of paths, &c.



POWDER.

1/- six for 12 galls. solution

2/6 " 25 " "

5/- " 200 " "

LIQUID. 1-gal.

1 gallon - 2/- - drum 6d.

1 " - 3/6 - " 9d. extra

2 " - 6/6 - " 2/6 "

3 " - 14/- - " 3/6 "

10 " - 25/6 - cask 5/- "

'EUREKATINE' The successful fumigant.
 'EUREKA' Insecticide, Lawn Sand, Hellebore Powder, Fordeaux Mixture, Worm Killer, Hayward's Summer Shade, &c.

Larger sizes of above articles at proportionately lower prices.
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You can do what comes to the same thing—use an Illustration Block in your advertisement that will compel his attention. We can get up sketches and supply blocks for Advertisements, Booklets, and Catalogues, &c.

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To Horticulturists

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The two main elements of success in gardening are proper tillage and intelligent Fertilizing ::

Always follow up your Autumn and Winter manuring with a topdressing in the Spring and early Summer of

NITRATE OF SODA

It is easily applied—quick in its action—and a necessary ingredient for the well-being of the plant ::

Any of the Leading Seedsmen and Dealers will supply it.

Send for the Pamphlets entitled "Chemical Fertilizers in the Garden" and "The Manuring of Orchards and Fruit Trees," supplied gratis and post free, by

The Chilean Nitrate Committee

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or
Friars Buildings, New Broad Street,
LONDON, E.C.

SPECIAL OFFER

Ericas (Hardy Heaths), to bloom next spring, summer and autumn.

Ericas 100 plants in 10 vars for	20/-
— 100 " 15 "	25/-
— 100 " 20 "	30/-
— 100 " 30 "	35/-
— 100 " 40 "	40/-
— 100 " 50 "	50/-

Hypericum calycinum (St. John's Wort), 2 6 doz. 75 - 100.

Hypericum hircinum nanum, 4 - doz. Moserianum, 4 - doz.

Genista hispanica, 12 in. bushy, 4 - doz. : 25 - 100.

Whin or Gorse, double-flowering, nice plants, 3 - to 5, - doz.

Beech, purple, 2 to 3 ft., 5, - doz. ; 3 to 4 ft. 8 - doz.

Veronica cupressoides, 4 - doz. : V. Hectorii, 8 - doz.

Cupressus lutea compacta, 1 to 1½ ft., 9d. each, 8/- doz.

Lavender nana compacta, 12 in. bushy 3 - doz. 20 - 100

Polygala Chamaebuxus lutea, 9d. each, 8 - doz.

Polygala Chamaebuxus purpurea, 7d. each 8 - doz.

Juniper Tamariscifolia, 9 to 15 in. 1/- each, 12 - doz.

A large list of other Hardy Plants.

5 per cent. discount on all plants packed free on special orders.

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HOUNSLOW NURSERIES

HOUNSLOW — MIDDLESEX

Fruit Trees a Speciality

Over half a million to select from

250,000 Maiden Two and Three-year Old Apples on English Paradise.

Catalogues free on Application. Inspection invited.

DICKSON'S HAWLMARK SEEDS AND SEED POTATOES

are admitted by general consent to be the best for the soil and climate of Ireland. They are the produce of our own stock seeds, and at our extensive trial grounds every variety, before being sent out, is thoroughly tested, and exhaustive experiments are constantly being initiated and carried out with the object of still further improving our stocks.

THOSE WHO WISH TO GROW THE BEST CROPS SHOULD SOW THE BEST SEEDS, and we would point out that, all our seed crops being carefully grown and harvested under personal supervision, our seeds are of highest purity and germination.

We never part with our stock seeds, so that it is important to remember that our proprietary strains cannot be obtained elsewhere.

Prices moderate. It will pay you to look through our catalogue, a copy of which will be sent post free. :: ::

ALEX. DICKSON & SONS, LTD.
HAWLMARK ————— 61 DAWSON STREET, DUBLIN



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Hundreds of thousands of gardeners have already heard the welcome knock of the Ryder Postman, and orders are pouring in for these famous seeds. This season, because of war conditions, Ryders are forced to abandon, temporarily, the familiar penny packet policy, and the price of

Ryders' Seeds

of the usual best quality, has been increased to 1½d. per packet.

You will need the best vegetable seeds for your vegetable garden: you cannot get any better than Ryder Seeds. Stocks are short. Order your seeds early.

ILLUSTRATED CATALOGUE FREE

Send postcard to-day for copy of the 1917 Illustrated Catalogue, which will then reach you by return.

No Agents. Only Address:

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Sow Ryders' Vegetable Seeds and grow your own food.

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HEATING, VENTILATING AND SANITARY ENGINEERS AND IRONFOUNDERS.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

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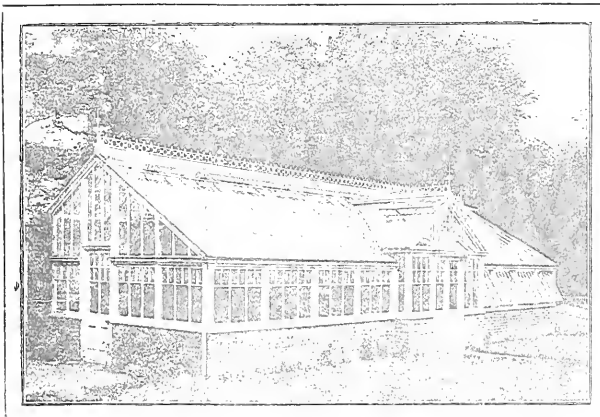
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FOR YOUR GARDEN

SEED POTATOES, SWEET PEAS, &c.

GET OUR SPECIAL LIST

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10 DAME STREET ————— DUBLIN

**VEGETABLES
LIKE THESE**

may be grown



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— Every Garden

WAR-TIME GARDENING

MEANS

To obtain the maximum amount of Food Crops that the ground is capable of yielding. To achieve this it is essential to sow only THE FINEST SEED and use THE BEST MANURES

WEBBS'

"WAR-TIME" COLLECTIONS OF

Vegetable Seeds

Finest Quality and Best Value Obtainable.

- Webbs' 5 - Collection contains 25 choice varieties
- Webbs' 10 - Collection contains 32 choice varieties
- Webbs' 15 - Collection contains 49 choice varieties
- Webbs' 21 - Collection contains 63 choice varieties
- Webbs' 42 - Collection contains 94 choice varieties

CARRIAGE PAID. List of Contents on application.

The ROYAL HORTICULTURAL SOCIETY'S and ROYAL AGRICULTURAL SOCIETY'S GOLD MEDALS (Highest Honours) awarded to WEBBS' VEGETABLES in 1916 : :

CATALOGUE of Seeds, Potatoes, Manures, &c., POST FREE.

WEBB & SONS, LTD., The King's Seedsmen, **STOURBRIDGE.**
Represented by Mr. W. ROURKE, 4 Weston Terrace, North Circular Road, DUBLIN

Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held at the Society's offices, 5 Molesworth Street, Dublin, on the 9th ult., Reg. T. Harris, Esq., LL.D., presiding. A draft proof of schedule for the Autumn Show, as revised by the schedule committee, was considered, amended, and passed for printing. The Autumn Show, to be held in conjunction with a fête to be arranged in aid of the fund for supplying fruit and vegetables to the Navy, was fixed for August 21st and 22nd. It was decided to offer prizes and medals at the same show for vegetables grown by allotment holders in the Dublin district, particulars of which will be circulated per leaflet as early as possible. A vote of condolence, moved to Mr. E. H. Walpole, Chairman of the Council, was passed by the members standing.

R. H. S. Trials.

THE following awards have been made to Celery and Celeriac by the Council of the Royal Horticultural Society after trial at Wisley:—

AWARDS TO CELERY.—*Award of Merit*—No. 30, Clayworth Prize Pink, raised, introduced and sent by Messrs. Sydenham, Birmingham; No. 31, Clayworth Prize Pink, sent by Messrs. Hurst, London; No. 11, Invincible White, raised, introduced and sent by Messrs. Dobbie & Co., Edinburgh. *Highly Commended*—No. 6, Early Rose, sent by Messrs. Hurst, London (A.M. 1900); No. 49, Incomparable Crimson, raised, introduced and sent by Messrs. Carter, Raynes Park, S.W.; No. 26, Matchless Pink, raised, introduced and sent by Messrs. A. Dickson, Belfast.

AWARDS TO CELERIAC.—*Highly Commended*—No. 12, Delicatessé, introduced and sent by Messrs. Barr, Taplow; No. 15, Late Summer, sent by Messrs. Barr, Taplow; No. 3, Ordinary Type, raised, introduced and sent by Messrs. Sydenham, Birmingham; No. 1, Selected, raised, introduced and sent by Messrs. Sutton, Reading.

"The Irish Bee Journal."

THE February number contains many items of interest to enthusiasts and much helpful information for beginners.

"Our Readers at Home" section contains an interesting account of a Wicklow apiary, and there is a contributed article by Ernest Eaton. The Expert Advice column contains many useful replies to querists, and the Month's Work is fully dealt with.

Answers to Correspondents.

SUBSCRIBER.—See paper by Mrs. Bland in this issue. We advise you to communicate with the Secretary, United Irishwomen, Lincoln Chambers, Lincoln Place, Dublin. It would be useful to find out whether there is a sub-centre in your district. The difficulty with individual growers



✓ SLUGS SLUGS

"SANITAS" POWDER
will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (G.O.R. London)
of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

SPRAY THIS WINTER WITH

COOPER'S WINTER FLUID

AND ENSURE
CLEAN, HEALTHY, VIGOROUS AND FRUITFUL TREES

There is no **WAR ECONOMY** in neglecting to Spray this Winter.

On its only sister being, as about the advantage they are deriving from its use.

GLEWSTONE FRUIT PLANTATION
ROSS, Herefordshire

"COOPER'S WINTER FLUID is a most EXCELLENT WINTER WASH. It is the only cleaning the trees that can be done during the growing season."

GETTING & NEWBORN

1 Gall. Drain 7/6; 2 Gall. Drain 14/6; 5 Gall. Drain 32/6
Special quantity for 40 Gallon Casks on application

1 Gall. makes 100 Galls. Wash Of Agents Everywhere

Sole Manufacturers,
WILLIAM COOPER & NEPHEWS, BIRMINGHAM.

Have You a Garden?

SOW...

DRUMMONDS'

CELEBRATED

Vegetable & Flower Seeds

AWARDED 97 FIRST PRIZES IN 1914-15

W. Drummond & Sons, Ltd

57 & 58 Dawson Street, DUBLIN

Walpoles Towels

are Soft and Strong

These Strong Hockback Towels have just arrived from the Factory. As they were ordered when prices were lower than now, Walpoles' are offering them

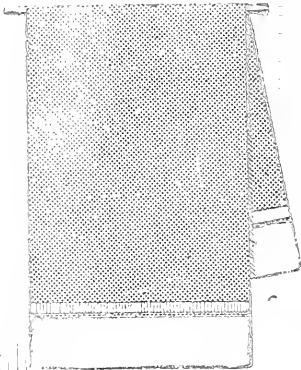
Below to-day's Value

This offer stops when the goods are sold.

4. 1. - Borderless Hockback Towel, plain hemmed ends. A good strong Towel for everyday use. Size 20 by 45 inches. Special Price 6/- per half dozen.

4. 2. Half Bleached Hockback Towel, plain hemmed ends. Splendid for household wear. Large size 27 by 56 inches. Special Price, 7/6 per half dozen.

4. 3. Hemstitched Hockback Towel, plain hemmed ends. Fully bleached, and good wearing. Size 24 by 58 inches. Special Price, 7/3 per half dozen.



Walpoles
Pay carriage

WALPOLES'
SUFFOLK ST.
DUBLIN

Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE DAY "NIQUAS"

(NON-POISONOUS) IMPROVED

A Concentrated Extract of Quassa, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use. It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 45/-; 1 gallon sufficient for 30 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers. Analysis on Application.

Sold in Tins, 6d., 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 20 lbs., 2/6; 50 lbs., 10/6; 112 lbs., 22/6

CORRY'S

"OPTIMUS" WORM POWDER (NON-POISONOUS)

For the complete destruction of Worms on Lawns, Bowling Greens, Putting Greens, and Golf Links.
NOT INJURIOUS TO ANIMALS OR BIRDS.

Prices—

Lbs.	7	14	28	56	112	5 cwt.	10 cwt.	1 ton
Each	1/9	3/6	5/-	7/6	12/-	57/6	110/-	210/-

For Fumigating in Greenhouses.

"LETHORION"

IMPROVED METAL CONES

Registered No. 62,597

To destroy Insect Pests. The Oandle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 6d. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 8d. each.

No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

FOWLER'S LAWN SAND

This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, 1 cwt., 3/6; 1 cwt., 10/-; 1 cwt., 30/-

ELLIOTT'S

"SUMMER CLOUD" SHADING

Registered Trade Mark No. 14,823.

(The only genuine original and improved article)

For Greenhouses. A pleasant green shade is given to the glass. In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & Co., Ltd., LONDON

Merchants and Manufacturers of Nurserymen, Seedsman and Florists' Sundries and Tobacco Preparations Free of Duty, for Agricultural and Horticultural Purposes.

THOMSON'S

VINE PLANT & VEGETABLE MANURE

Famous for over 30 Years

Ensures success in your garden: so compounded from the finest ingredients procurable as to combine **STIMULATING** with **LASTING** effects, producing in every crop vigorous, healthy and fruitful growth.

The direct result of **LONG PRACTICAL** experience in gardening.

Used by Amateur and Professional Gardeners the world over.

THOMSON'S SPECIAL CHRYSANTHEMUM AND TOP DRESSING MANURE

PRICES—Vine Plant and Vegetable Manure—1 cwt., 29/-; 56 lbs., 12/-; 28 lbs., 7/6; 14 lbs., 4/6; 7 lbs., 2/6; tins, 2s., 1/-, and 6d. Car. paid anywhere on 56 lbs. and up. Special Chrysanthemum & Top Dressing Manure—56 lbs., 20/-; 28 lbs., 11/-; 14 lbs., 6/-; 7 lbs., 3/6; tins, 1/- Car. paid anywhere on 28 lbs. and up.

Sold by all Seedsmen OR FROM

SOLE MAKERS

W. THOMSON & SONS LTD. GLOVENFORDS, N.B.

is the drying and marketing of the herbs. With a central depot available this becomes simplified. Note what Mrs. Bland says re quantities required and kinds wanted. We hope to publish as much information as possible from time to time.

Catalogues.

MESSRS. R. WALLACE & CO., Colchester, have favoured us with a copy of their Spring Catalogue of Lilies, Begonias, Gladioli and New Chinese Plants, &c. The frontispiece shows a charming illustration of the beautiful new *Primula helodoxa* at home in Yunnan, and inside is a fine figure of *P. nutans*. A spray of *Berberis Wilsonae*, beautifully coloured, is shown as a loose-leaf enclosure, and will doubtless tempt many to possess so lovely a shrub. The body of the catalogue is replete with all the best and most beautiful bulbs and cormous plants, for many of which Messrs. Wallace are specially famous.

MESSRS. CANNELL & SONS, Eynsford, Kent, send their Seed and Plant Guide. Many novelties in seeds and plants are offered, together with concise cultural directions for the principal crops. On page one collections for cottagers and amateurs are offered as well as more expensive ones for larger gardens.

MESSRS. LITTLE & BALLANTYNE, Carlisle, send their new season's list of farm seeds. These lists are of paramount importance to all who are in any way responsible for farming operations at the present time. Their many customers will find this old established firm has made ample provision for meeting the extra demand likely to arise from increased tillage.

MESSRS. RYDIER, of St. Albans, well known as the pioneers of the penny seed packet, have sent us a copy of the new list for 1917. Their thousands of customers will not be surprised to learn that they have been compelled to raise the minimum price of their packets to 1d. Everyone will realise the necessity of this, and the only wonder is that they can still offer so cheaply; it is surely a triumph of business organisation. The catalogue is as interesting as ever and freely illustrated. The large number of people now taking up gardening for the first time will find this a useful list.

W. DUNN & SONS, LTD. This well known firm has issued its new catalogue of seeds, &c., and we have every confidence in recommending it to the notice of our subscribers. Handsomely produced and containing many beautiful illustrations it will be found replete with everything necessary to ensure a plentiful supply from our

+++++
 THE GRAND NEW CHINESE :
PRIMULA HELODOXA
 A.M., R.H.S., 1916
 Other New Chinese Primulas, &c.
BERBERIS NEW CHINESE SPECIES
LILIES . GLADIOLI
—BEGONIAS—
 Are a few of the items offered and described in our
 SPRING CATALOGUE. Post free on application
R. Wallace & Co. Ltd.,
 KILNFIELD GARDENS, COLCHESTER, ESSEX
 +++++

BEGONIAS SEED 2 6 and
 5/- per packet
 In Dr. H. J. Greenhouse, Bedding, Hang-
 low Bazaar, &c. Awarded 45 Gold Medals.
 See our Catalogue free.

DELPHINIUMS
 In our unsurpassed Gold Medal Collection.
 White, named varieties in strong ground
 12/-, 15/-, 20/-, 25/- & 30/- per doz.

OTHER SPECIALITIES
 Carnations, Cyclamen, Polyan-
 thus, Blue Primrose, Violets, &c.
BLACKMORE & LANGDON, BATH.

CHEALS' NURSERIES
 ORNAMENTAL TREES, SHRUBS
 ROSES, FRUIT TREES, &c. ::
 in immense quantities and
 in the pink of condition ::

Send for Catalogue to
J. CHEAL & SONS, LTD.
 The Nurseries, Grawley, Sussex

THE
NONE-SO-HARDY
 Nursery Products
 Are absolutely healthy and regularly transplanted
 (Department Inspected)

APPLE TREES, in fruiting state, 9/- to 15/- doz.
 LARCH, SCOTCH, SPRUCE, splendid plant-
 ing stuff, 2 6 per 100; also from 20/- per 1,000
 THORN QUICKS, from 10/- to 25/- per 1,000
 All our Trees and Shrubs for general planting at
 standard prices

For a full list of our plants and their very meritorious
 quality of our staff

Very extensive stock to select from. Satisfaction
 assured. Catalogues free on application

W. MANMOND, "None-so-Hardy" Nurseries
 SHILLELAGH

Points about Allotments

THE RIGHT THING TO DO

1. Apply for an allotment to the Clerk of the Urban or Rural District Council of the district in which you live.
2. Many merchants are willing to do their utmost to meet the requirements of allotment holders. A Committee of plotheholders would be useful to negotiate with traders or farmers for supplies.
3. When farmyard or stable manure cannot be obtained, use light refuse (but not coal ashes) and supplement it with four parts superphosphate (or two to one mixture) and one part sulphate of ammonia, at the rate of $3\frac{1}{2}$ lbs. to 4 lbs. per perch.
4. To till the grass land allotments use the spade **NOW**—turn the sod well under and have the grass well covered.
5. Potatoes grown on the ridge system will give fair crops—when time is limited this method can be used with success.
6. Put at least three-quarters of new plots under potatoes. Grow successional crops of other vegetables, such as cabbage, lettuce, broad beans and cauliflower, where the soil is in good order. Good crops of vegetables cannot be obtained on newly turned up grass lands unless the soil is well and deeply cultivated and manured.
7. Plant enough early varieties of potatoes to keep the family supplied during July. A second early variety such as "British Queen" should be grown for August and September, leaving the main crop of varieties like "Up-to-Date" for lifting when growth is completed.

THE utmost effort is needed to secure the maximum production of food from each allotment. Garden owners and Gardeners can help their neighbours by distributing surplus plants and by circulating the Department's leaflet on the "Treatment of Allotments."

**REMEMBER THERE IS NO TIME TO
BE LOST. THE FOOD IS WANTED THIS YEAR**

gardens. Excellent collections of vegetable seeds are offered from 10s. 6d. to £3 3s., calculated to give a year's supply according to the size of the garden, and to those who have previously had but little experience in cropping these collections should prove a boon. It is hardly necessary to add that the body of the catalogue contains all the well known strains for which the firm is noted and, in addition, recent novelties of merit.

THE PREMIER SEED CO., Brighton, have issued a most instructive and interesting catalogue of vegetable and flower seeds, as well as various roots and tubers, for spring planting. Of compact size and profusely illustrated it is most convenient for carrying into the garden. A special feature is made of cultural hints which should appeal to very many people who are now, for the first time perhaps, taking up gardening with a view to food production. Another very important feature, designed to simplify matters for cottagers and others, is the offer of collections of flower and vegetable seeds, the latter being especially important and ranging in price from 1s. 6d. to 21s. Collections of flower seeds are offered from 1s. to 2s. Throughout the body of the catalogue a first rate selection of varieties is offered at prices ranging from 2d. per packet upwards, so that people of small means are well catered for. Further particulars will be found in our advertisement pages, and we heartily commend this catalogue to the notice of our readers.

MESSRS. SUTTONS' FARMERS' YEAR BOOK is a first rate publication, and grapples in a practical manner with the food problem. It is excellently illustrated with fine field and farm photographs, and offers within its covers all that is required for cropping the farm. Much practical information is supplied, and the catalogue is a really useful manual of husbandry.

The Culture of Profitable Vegetables in Small Gardens.*

By SUTTON & SONS, Reading.

THIS excellent little booklet is designed to help those who may be taking up vegetable growing for the first time. In clear, simple and concise language directions are given as to preparing the soil, seed sowing and transplanting, all the best and most popular vegetables being dealt with. Brevity is the keynote throughout, and there is no unnecessary talking round the subject.

A useful chart is given at the end showing at a glance the approximate time of sowing or planting, distances apart, &c., while a calendar of vegetables in use each month of the year is also given.

In a future issue we think it would be an advantage if the authors gave the approximate quantity of seed or plants required for certain areas; for instance, allotment holders are already inquiring of us what quantity of potatoes they will require to plant half their allotment, say of an acre, and so on.

We commend this booklet to the notice of our readers.

* Simpkin, Marshall, Hamilton, Kent & Co. London. Price 6d.

Mowing Machines.

THERE will doubtless still be some use for these implements during the ensuing summer, and it will be well to examine them without delay. Any repairs necessary should be seen to at once, as restrictions may be put on the manufacture of machines, or even of parts thereof. Most of the large manufacturers are now busily engaged on war work, but possibly still have in stock the various parts of all the standard makes. In case, however, that even these may not be available later in the season we strongly urge all users of grass machines to have them repaired at once where necessary.

Dublin Wholesale Markets.

OWING to the unsettled state of the weather during the month, supplies of garden produce have been very small and much below the average for the corresponding period last year.

Apples, mainly of the Branley variety, packed in barrels, have been moderately supplied.

In the flower section, a noticeable sign of spring has shown itself by the presence of some fine bunches of Narcissi, Arum Lilies, also Malmaison Carnations and Violets.

The display of vegetables throughout the month was very poor. Cabbages and Savoys were of fair quality, and prices for these advanced considerably. Cauliflowers were very scarce, the recent severe frost having destroyed the plants in many places. A very large quantity of Brussels sprouts arrived in excellent condition, and the prices realised were well above the average. Carrots and parsnips were plentiful and realised good prices. Leeks, although only of fair quality, were readily disposed of. Jerusalem artichokes and forced rhubarb were abundantly supplied. Onions continue to be very scarce and dear.

The following is the price list for the month:—

		From	To
		s. d.	s. d.
FRUIT.			
Apples			
Branleys	per barrel	35 0	10 0
"	per ½ bushel	4 0	—
FLOWERS.			
Narcissi	per doz. bunches	6 0	9 0
Arum Lilies	per ½ doz. bunches	6 6	6 9
Malmaison Carnations	per doz. bunches	2 6	6 0
Hyacinths	" "	1 6	1 9
Violets	" "	2 0	2 3
VEGETABLES.			
Cabbage—York	per load	19 0	29 0
" Savoy		21 0	30 0
Cauliflowers	per flasket	1 6	1 9
Brussels Sprouts	per float	4 0	5 0
Parsnips	per sack	3 0	1 0
Carrots	per bunch	0 10	1 0
Rhubarb	per doz. bunches	1 10	2 0
Artichokes (Jer.)	per float	3 6	4 0
Parsley	per tray	1 6	1 8
Thyme	per bunch	0 3	0 6
Sage		0 4	0 6

R. J. B.

Miscellaneous Section.

SEED of choice and rare ALPINES from a very large collection. All those who possess a ROCK GARDEN should send for my Catalogue, they will find something new and desirable. H. CORRIYON, CHENE-ROUGE, GENEVA.

DAISY HILL NURSERY, NEWRY

is the most interesting Nursery in the Country and contains the most complete Collections of Shrubs and Plants extant. T. SMITH.

SANKEY'S PATENT GARDEN POTS
 The BEST and Cheapest
 Since quality plants require the very best pots, the quantity of plants which can be raised in them is very large, and the amount of soil which they require is very small. They are also very durable, and will last for many years.
 SPECIAL POTS of all descriptions. Bulk Trade and Retail.
 RICHARD SANKEY & SON, LTD.
 Buryan Pottery Co., ST. ANTHONY'S.

BOLTON'S

THE LEADING HOUSE FOR
SWEET PEAS

Awarded 134 Gold Medals
 Catalogues Post Free :: ::

ROBERT BOLTON, F.R.H.S.
 THE SWEET PEA SPECIALIST
 WARTON ——— CARNFORTH

KELWAY'S GRACEFUL AND BEAUTIFUL "LANGRISH" HYBRID GLADIOLI. These new Gladioli are most graceful, and provide yellow, orange, magenta, and shades not to be found in our other large flowered hybrid Gladioli.

They are quite hardy and flower in July and August.

They are best for vases, and are invaluable for decorating houses, churches and the home.

Send for our War Price Lists of our new varieties.

KELWAY & SON, Retail Plant Department, LANGRISH, SOMERSET.

SEEDS SEEDS

VEGETABLE FLOWER
 HIGHEST QUALITY BEST VALUE

Please write for our unique 124 page pocket seed guide, full of practical and useful information free.
 THE GREYER SEED CO. Ltd., 17 London Road, BRIGHTON

EUREKA WEED KILLER

SAVES WEARY WEEDING.



30 gallons of mixed solution will kill all weeds on 100 square yards of paths, &c.

POWDER.

1/-	tin for 20 galls. solution
1/6	" 25 " "
2/6	" 100 " "

LIQUID. 1-gal.

1/2	gallon - 2 - drum 6d.
1	" - 3/6 - " 9d. extra
2	" - 3/5 - " 1/6 "
5	" - 10/- - " 2/6 "
10	" - 25/6 - cask 5/- "

"EUREKATINE" - The successful fumigant.
 EUREKA Insecticide, Lawn Sand, Hellebore Powder, Bordeaux Mixture, Worm Killer, Hayward's Summer Shade, &c.
 Larger sizes of above articles at proportionately lower prices.

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New Catalogues Now Ready, Free

Perennial and Alpine.
 Hardy Ferns, Seed.
 Japanese Lilies.
 Water Lilies and Bog Plants.

HARDY PLANT FARM, ENFIELD, MIDDX.

AUTO-SHREDS IS CERTAIN
 LEAD-TO DEATH to
 Leaf-mining Maggots, Mealy Bug, and
 all Pests infesting plants under glass, &c.
 Simple to use, no apparatus required. In
 Boxes to fumigate 1,000 cubic feet, 6d.;
 No. 4 Packet 2,500 cubic feet, 1/- each;
 for tender and ordinary plants, 10,000
 cubic feet, 3s. 6d. each. Obtained of
 Seedsmen and Florists; if unobtainable
 apply direct—

W. DARLINGTON & SONS,
 Ltd.

Wholesale Horticultural Sundriesmen,
 HACKNEY, LONDON, E. 2.

Trade Terms and Catalogue of Sundries upon receipt of business card



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to each reader of this paper and could personally draw his attention to your own advertisement, at the cost of a few shillings only, and without wasting a minute of your time, you would be glad of the chance.

You can do what comes to the same thing—use an Illustration Block in your advertisement that will compel his attention. We can get up sketches and supply blocks for Advertisements, Booklets, and Catalogues, &c.

IRISH PHOTO ENGRAVING CO.

12, ABBEY ST., DUBLIN.

To Horticulturists

PLANTS MUST BE FED

The two main elements of success in gardening are proper tillage and intelligent Fertilizing

Always follow up your Autumn and Winter manuring with a topdressing in the Spring and early Summer of

NITRATE OF SODA

It is easily applied—quick in its action—and a necessary ingredient for the well-being of the plant

Any of the Leading Seedsmen and Dealers will supply it.

Send for the Pamphlets entitled "Chemical Fertilizers in the Garden" and "The Manuring of Orchards and Fruit Trees," supplied gratis and post free, by

The Chilean Nitrate Committee

18 DONECALL QUAY, BELFAST

or

Friars Buildings, New Broad Street,
LONDON, E.C.

ESTABLISHED 1832. TELEPHONE 3351 (Private Branch Exchange). TELEGRAMS—"BROOKS," DUBLIN

HORTICULTURAL GLASS, PAINTS, &c.

- GLASS . . . Cut to dimensions, packed and delivered at your railway station. Also stocked in the regular box sizes.
- PAINT . . . "BROMAS" for general household and estate purposes
"VALENTINE" for hay barns, &c., doubles the life of galvanized iron.
"PETREX" for conservatories, does not flake off.
- "DEAUTITE" . . . Plastic Repair Compound for repairing leaky roofs and cracked glass, also for General Repair Work.
- BOILERS . . . and heating plants, newest Types. Please ask for lists.
- GREENHOUSES . . . And GARDEN FRAMES.
- Also TIMBER, SLATES, BRICKS, IRONMONGERY, and every Building Requisite

BROOKS THOMAS & CO.
LTD.

BUILDERS' PROVIDERS, Sackville Place, **Dublin**

Dickson's Emerald LAWN GRASS SEED

Produces a Rich, Green, Velvety Turf, and is composed of the finest dwarf evergreen grasses. PRICE 1/4 per lb. ; 14. 6 per stone



THE DICKSON LAWN MOWER

¶ The lightest and most durable moderate-priced Mower in the market, British make, and guaranteed to give satisfaction.
10-inch, 37. 6 ; 12-inch, 40. - ; 14-inch, 45. - ; 16-inch, 50. -

Alex. Dickson & Sons, Ltd.
HAWLMARK, 61 Dawson St., DUBLIN

My Hardy Plant Catalogue

IS NOW READY . . . Post Free on Application

SPECIALITIES

PHLOX, DELPHINIUMS ::
MICHAELMAS DAISIES, ALPINES

W. WELLS, Junior
Hardy Plant Nurseries
MERSTHAM — SURREY

BEGONIAS SEED 2/6 and 5/- per packet

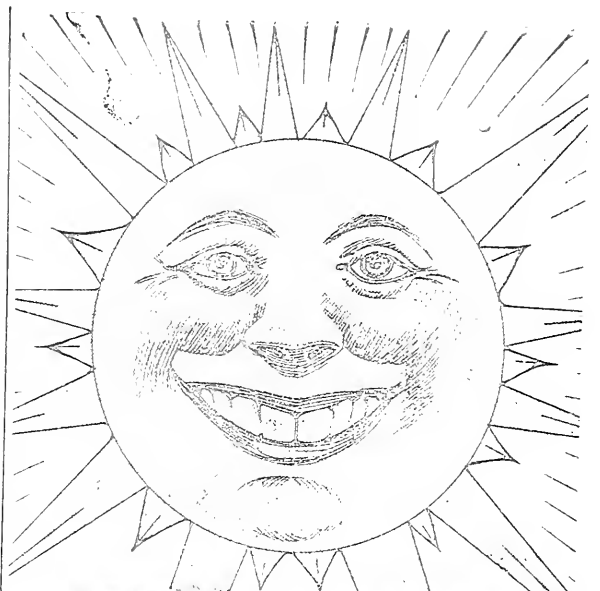
for Exhibition, Greenhouse, Bedding, Hanging Baskets, &c. Awarded 45 Gold Medals. Illustrated Catalogue free.

DELPHINIUMS

from our unsurpassed Gold Medal Collection—choice named varieties in strong ground roots, 12/-, 15/-, 20/-, 25/- & 30/- per doz.

OTHER SPECIALITIES

Carnations, Cyclamen, Polyanthus, Blue Primrose, Violets, &c.
BLACKMORE & LANGDON, BATH.



RYDER and "SUN"

For GARDEN SUCCESS

Ryders Seeds and King Sol are an irresistible combination for successful gardening. Stock your kitchen garden or allotment with RYDERS VEGETABLE SEEDS, and the floral corner with Ryders Flower Seeds, and you take the best possible initial step toward fine heavy crops of vegetables and beautiful displays of fragrant flowers.

RYDERS SEEDS

WILL NEVER DISAPPOINT YOU

They are of that high quality that always spells satisfaction. War-time price, 1/4d. the packet.

SUGAR BEET FOR JAM MAKING. The best variety for growing in this country. Full instructions for sowing, growing, and using with each packet. 8d. per oz. ; 4 ozs. 2s. 6d.

Illustrated CATALOGUE FREE

Send a postcard now for your copy.

ALL SEED ORDERS DISPATCHED BY RETURN OF POST.

Only Address—

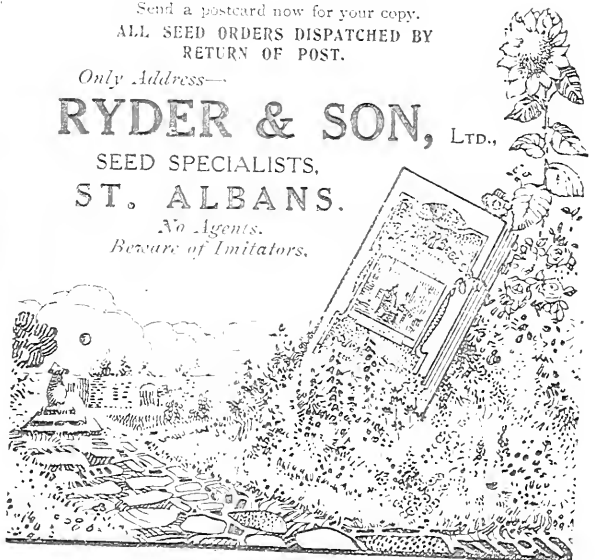
RYDER & SON, LTD.,

SEED SPECIALISTS,

ST. ALBANS.

No Agents.

Beware of Imitators.



By APPOINTMENT TO



HIS MAJESTY THE KING.

MACKENZIE & MORGAN, LTD.

HOTHOUSE BUILDERS

HEATING, VENTILATING AND SANITARY ENGINEERS AND IRONFOUNDERS.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

EDINBURGH

{ Registered Office and Works
{ and Edinburgh Foundry,

BALCARRES STREET,
SLATFORD ROAD.

LONDON—8 Camden Road, N.W.

GLASGOW—121 St. Vincent St.

W. RICHARDSON & CO.

SPECIALISTS IN THE
MANUFACTURE OF ALL KINDS OF

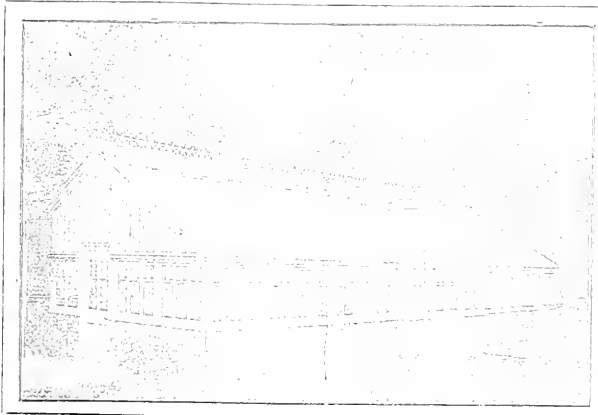
HORTICULTURAL BUILDINGS,

ALSO

HEATING ENGINEERS

PLANS AND ESTIMATES prepared free
of cost.

LARGE CATALOGUE of photographic
views of Horticultural Buildings free
on application.



DUNDEE

(LONDON OFFICE: Belgavia Chambers, Victoria St., S.W.)

Cultivation of Medicinal Plants.

IMMEDIATELY on the outbreak of war an article appeared in *The Journal of the Board of Agriculture* (September 1914) dealing with the cultivation of medicinal plants in Great Britain. It was at that time believed that, since medicinal plants had been largely imported to a very considerable extent from enemy countries, a shortage of the more important drugs was liable to occur in Great Britain. Prices rose rapidly on the outbreak of war, and, as an example, it may be said that *Belladonna* root, which was worth 15s. per cwt. in January, 1914, sold for 65s. in June 1914, rose to 100s. by August, 1914, and at present realises several times that price.

During the past two years much has been done to increase the home supply of drug plants, and it may now be said that, with the exception of our essential species, there need be no anxiety as to our supply of drug-yielding herbs. Indeed, as will be pointed out below, the four species referred to are likely to be put on the market in sufficient quantity to meet all home demands.

The Board have given the whole subject careful consideration, and have consulted the National Health Insurance Commission (England), and a recent communication from the Commission to the Board brings out certain important facts and is printed below with the concurrence of the Commission.

The question [of medicinal plants] has been widely discussed in the public Press, in which statements have been made which may have the effect of misleading the public in attaching an undue value to the production of plants which are of small medicinal or commercial importance, and it seems desirable that consideration should

be given to the subject with a view to determining the following questions, namely:—

- (1) What home-grown plants are of essential medicinal importance?
- (2) What quantities of such plants are required?
- (3) What steps should be taken to encourage the production of such plants in the quantities required?

(1) Although many home-grown plants are used in the treatment of disease, only four can, in the opinion of this Department, be regarded, from a medical point of view, as really essential—*Belladonna*, *Henbane*, *Digitalis*, and *Colchicum*.

These plants are of great value in the treatment of disease, and, in the view of this Department, it is important that the home production of the plants should be increased to such an extent as to render this country self-supporting, at all events as regards the quantities required for home consumption.

(2) As regards the quantities of these four plants that are required, it is impossible to make a precise statement, but from inquiries that have been made by this Department it appears that the quantity of *belladonna* required for home consumption only may be estimated, approximately, as equivalent to about 50 tons of the dried leaves and about 50 tons of the dried root annually. The quantity of *henbane* and *digitalis* required is probably equivalent to about 20-25 tons of the dried leaves of each plant annually, while the quantity of *colchicum* required appears to be considerably less. These estimates relate to home consumption only; in addition, much larger quantities are needed for the manufacture of medicinal preparations for export.

(3) It appears that there is sufficient *digitalis*

WAR TIME SEEDS

FOR YOUR GARDEN

SEED POTATOES, SWEET PEAS, &c.

GET OUR SPECIAL LIST

EDMONDSON BROS.

10 DAME STREET—DUBLIN

and colchicum growing wild in this country to meet home requirements, and that it is unnecessary to set aside land for the cultivation of these plants. A considerable proportion of the home demand for belladonna and henbane could also be met by the collection of wild plants, but the demand could only fully be met by skilled cultivation. It would seem, therefore, that as regards digitalis and colchicum, and to a certain extent belladonna and henbane, much could be done to provide the quantities needed for home consumption by the dissemination of information as to the most suitable methods for collection, the encouragement of co-operation between associations of collection and wholesale drug merchants, and by the encouragement of the provision of drying facilities. As the successful cultivation of belladonna and henbane requires skill and experience, it is doubtful whether a large quantity could be produced by small cultivators without organisation and skilled supervision, but this acreage under cultivation by the larger cultivators has considerably increased since the outbreak of war, and it is probable that it now suffices together with what could be obtained from the collection of wild plants, for home requirements."

Royal Horticultural Society of Ireland.

5 MOLESWORTH STREET,
DUBLIN, March, 1917.

NOTICE

To Allotment Holders situated within a four miles' radius of the G.P.O., Dublin.

Special prizes offered by the Society at the Society's Autumn Show, which, by kind permission, will be held in Lord Iveagh's Grounds, Dublin, August 21st and 22nd, 1917, for a collection of four kinds of vegetables grown by *bona fide* allotment holders in the Dublin district comprising an area within four miles radius of the G.P.O.

The exhibits may consist of any four of the following:—viz., potatoes, dish of ten; onions, dish of five; cabbages, two; lettuce, three; broad beans, twelve pods; cauliflowers, two; turnips, five; carrots, three. First prize, silver medal and 15s.; 2nd prize, bronze medal and 10s.; 3rd prize, 7s.; 4th prize, 5s.; 5th prize, 3s. Exhibitors will have free entry for exhibits. A pass will be given admitting exhibitor free to the show.

Entries, accompanied by a voucher from the local secretary, stating that exhibitor is a *bona fide* allotment holder, and that the vegetables exhibited have been cultivated solely in his (or her) allotment, must be sent to the Secretary, Royal Horticultural Society, 5 Molesworth Street, Dublin, by August 10th. All exhibits must be staged by 10 a.m. on August 21st, the first day of the show.

THE monthly meeting of the council was held at the society's offices, 5 Molesworth Street, Dublin, on the 9th ult., Mr. G. M. Ross, M.A., presiding. A letter was read from Lord Iveagh generously granting the use of his grounds for the society's autumn show, August 21st and 22nd, and Lady Ardilaun wrote kindly renewing her prizes for the ensuing year, suitable acknowledgments being

Destroying Weeds.

FROM now on garden and park walks, avenues, &c., will be producing their spring crop of weeds, and the unfortunate aspect of the matter is that all available labour is required for other work than scuffling these walks. However, science has come to the rescue, and has given us weed-killing preparations, which reduce to a minimum the labour necessary to destroy the weeds. There is no doubt that of these preparations Smith's "Perfect" Weed Killer (Liquid and Powder) holds a premier place, and the Irish Agent (D. M. Watson, 61 South Great George's Street, Dublin) finds the demand still increasing. This is mainly the result of satisfied users recommending Smith's Weed Killer to their friends. Another thing which has stood to Smith's Weed Killer is the fact that the solution is a much stronger one than many on the market, and that even when the prices of the ingredients advanced considerably (as they did a year or two ago) the full original strength has always been maintained. Prices, &c., are given on page x of this issue, and it should be remembered that Mr. Watson also makes a speciality of all kinds of Insecticides, Fungicides, Vaporising Compounds, Fertilizers, &c. In fact he has a fair claim to be considered the only specialist in Ireland in Horticultural Chemicals.



✓ SLUGS SLUGS

"SANITAS" POWDER
will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as **Worms, Rats, Mice, Sparrows, Cats, &c.**

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (G.O.R. London)
of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

Walpoles' Towels

are Soft and Strong

These Strong Huckaback Towels have just arrived from the factory. As they were ordered when prices were lower than now, Walpoles' are offering them

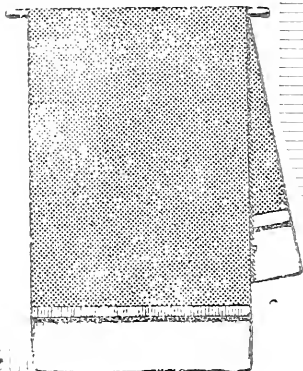
Below to-day's Value

This offer stops when the goods are sold.

G. 1.—Bordered Huckaback Towel, plain hemmed ends. A good strong Towel for everyday use. Size 29 by 42 inches. Special Price **6/-** per half dozen.

G. 2.—Half Bleached Huckaback Towel, plain hemmed. Splendid for hand wear. Large size, 27 by 36 inches. Special Price, **7/6** per half dozen.

G. 3.—Hemstitched Huckaback Towel, Beautifully fine, fully bleached, and good wearing, size 24 by 28 inches. Special Price, **7/3** per half dozen.



Walpoles

Pay carriage

WALPOLES'
SUFFOLK ST.
DUBLIN

Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE DAY

"NIQUAS"

(NON-POISONOUS) IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use.

It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 45/-; 1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers
Analysis on Application

Sold in Tins, 6d., 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 28 lbs., 8/6; 56 lbs., 13/6; 112 lbs., 22/6

CORRY'S

"OPTIMUS" WORM POWDER

(NON-POISONOUS)

For the complete destruction of Worms on Lawns, Bowling Greens; Putting Greens, and Golf Links.

NOT INJURIOUS TO ANIMALS OR BIRDS.

Prices—

Lbs. 7 14 28 56 112 5 cwt. 10 cwt. 1 ton
Each 1/9 3/- 5/- 7/6 12/- for 57/6 110/- 210/-

For Fumigating in Greenhouses.

"LETHORION"

IMPROVED METAL CONES

Registered No. 62,597

To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 6d. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 8d. each.

No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

FOWLER'S LAWN SAND

This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, 1/2 cwt., 3/6; 1 cwt., 16/-; 1 cwt., 30/-

ELLIOTT'S

"SUMMER CLOUD" SHADING

Registered Trade Mark No. 14,629.

(The only genuine original and improved article)

For Greenhouses. A pleasant green shade is given to the glass. In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & Co., Ltd., LONDON

Merchants and Manufacturers of Nurserymen, Seedsman and Florists' Sundries and Tobacco Preparations Free of Duty, for Agricultural and Horticultural Purposes.

ONLY MEDAL
INTERNATIONAL EXHIBITION EDINBURGH - 1886
ONLY GOLD MEDAL EDINBURGH - 1891.

THOMSON'S

CELEBRATED
MANURES

PERFECT PLANT FOODS.
Unrivalled for all garden crops. Prices:—Vine, Plant and Vegetable Manure—1 cwt. 26/-; 56 lbs. 12/6; 28 lbs. 7/6; 14 lbs. 4/6; 7 lbs. 2/6. Tins 2/6, 1/- and 6d. Carriage paid anywhere on 56 lbs. and up. Special Chrysanthemum and Top Dressing Manure—56 lbs., 20/-; 28 lbs., 11/-; 14 lbs., 6/-; 7 lbs., 3/6; tins, 1/- Carriage paid anywhere on 28 lbs and up
Sold by all Seedsmen. Sole makers, Wm. Thomson & Sons, Ltd., Chesham, Bucks, N.B.

made to Lord Iveagh and Lady Ardilaun. It was decided that at the next meeting of the council preliminary arrangements be made for the Fête to be held for the benefit of the funds of the Irish Branch of the Vegetable Products Committee in conjunction with the autumn show.

THE VEGETABLE PRODUCTS COMMITTEE FOR SUPPLYING FRESH FRUIT AND VEGETABLES TO OUR SAILORS.

THE second annual general meeting of the Irish Branch will be held at 5 Molesworth Street, Dublin, on April 14th, at 1 p.m., at which the Marquis of Headfort, President of the Irish Branch, has kindly promised to preside.

The Horticultural Directory.

OUR old friend, so long issued from the *Journal of Horticulture* office, has now reached us from the office of the *Gardeners' Chronicle*, and instead of the familiar orange-coloured cover it now appears in bright red garb. Within the covers all the useful features, which have so long made this work indispensable, are maintained and kept up to date. As an address book, the Directory should be on every tradesman's desk, and to the gardener the lists of certificated plants are extremely useful. A new feature is the Pro Patria list, in which are given the names of gardeners who have fallen in the great struggle.

We heartily recommend the Directory to all engaged in horticulture, and from personal experience we can testify to its value. The price is one shilling.

Answers to Correspondents.

MIXING SLAKED LIME, WOOD ASHES AND SULPHATE OF AMMONIA.—The gas formed was

Ammonia, which is always set free from Sulphate of Ammonia when this substance is mixed with lime. Hence they should on no account be mixed together. Apart from any damage done, as in this case, four-fifths of the escaping ammonia is nitrogen, the ingredient for which sulphate of ammonia is bought, and to which it owes its fertilizing power.

Catalogues.


MESSRS. BLACKMORE & LANGDON, whose fame as Begonia Specialists is well known, have issued their new catalogue. Many beautiful illustrations adorn the pages, which are full of interest from cover to cover. Begonias are not the only plants engaging the attention of this enterprising firm, as their strains of Delphiniums, Aquilegias, Cyclamens, &c., are in the front rank. All readers interested in the most beautiful florists' flowers would do well to secure a copy of the catalogue.

Wisley Trials.

THE following further awards have been made to Savoy Cabbages by the Council of the Royal Horticultural Society after trial at Wisley:—

Award of Merit.—No. 18—Green Curled, sent by Messrs. Bobbie & Co., Edinburgh. No. 44—Late Drumhead, sent by Messrs. Nutting, London. No. 25—New Year, sent by Messrs. Sutton, Reading. No. 41—Ormskirk Late Green, sent by Messrs. Sydenham, Birmingham. No. 43—Ormskirk Hawlmark Selection, sent by Messrs. A. Dickson, Newtownards. No. 42—Ormskirk, sent by Messrs. Nutting, London.

Little's Weed Destroyers



KILLS ALL WEEDS, MOSSES, &c.,

On Carriage Drives, Gravel Paths.

Double the strength of most Weed Killers.

1 gallon to 50 gallons water.


1 gallon Drum, 8 &c. ... Drum Free.
60 " Cask 80, - each. Cask Free.

GENTLE ON THE PLANTS WHICH IT DESTROYS.

LITTLE'S WEEDOL
Powder Weed Killer

Per 1/8 Tin,
To make 25 Gallons.

Saves Trouble and
Expense of Returning
Packages.



Morris Little & Son, Ltd., Doncaster

Points about Allotments

THE RIGHT THING TO DO

1. Apply for an allotment to the Clerk of the Urban or Rural District Council of the district in which you live.
2. Many merchants are willing to do their utmost to meet the requirements of allotment holders. A Committee of plotholders would be useful to negotiate with traders or farmers for supplies.
3. When farmyard or stable manure cannot be obtained, use light refuse (but not coal ashes) and supplement it with four parts superphosphate (or two to one mixture) and one part sulphate of ammonia, at the rate of $3\frac{1}{2}$ lbs. to 4 lbs. per perch.
4. To till the grass land allotments use the spade **NOW**—turn the sod well under and have the grass well covered.
5. Potatoes grown on the ridge system will give fair crops—when time is limited this method can be used with success.
6. Put at least three-quarters of new plots under potatoes. Grow successional crops of other vegetables, such as cabbage, savoy, broad beans and cauliflower, where the soil is in good order. Good crops of vegetables cannot be obtained on newly turned up grass lands unless the soil is well and deeply cultivated and manured.
7. Plant enough early varieties of potatoes to keep the family supplied during July. A second early variety such as "British Queen" should be grown for August and September, leaving the main crop of varieties like "Up-to-Date" for lifting when growth is completed.

THE utmost effort is needed to secure the maximum production of food from each allotment. Garden owners and Gardeners can help their neighbours by distributing surplus plants and by circulating the Department's leaflet on the "Treatment of Allotments."

**REMEMBER THERE IS NO TIME TO
BE LOST, THE FOOD IS WANTED THIS YEAR.**

Dublin Wholesale Markets.

THE supply of garden produce during the month has been very scarce, and by all appearances this scarcity is likely to continue until the new season's crops come in.

Apples have been supplied in moderate quantities. A few barrels of Bramley Seedling, of excellent quality, were seen. There were also a few barrels of mixed apples which realised good prices. In all instances the prices were above the average.

Large consignments of Narcissi, from Cross-channel sources, were eagerly bought up. Arum Lilies were plentiful. Anemone "St. Brigid" and Violets were in good demand.

There has been a general falling off in the supply of vegetables. Leeks were the only vegetable that was in anyway abundantly supplied, but the prices were rather low. York cabbage and Savoy have shown a distinct advance in price, and the quality of the latter was very good. Cauliflowers continue to be sent in limited quantities, and prices are low. Brussels Sprouts seem to be the only vegetable of its kind that has escaped the severe frosts. It is never missing from the market, and the demand and prices are always good. Carrots and Parsnips of good quality brought the usual prices. The new season's Rhubarb has arrived, but with the shortage of sugar there was little demand for it.

The following is the price list for the month:—

FRUIT.		From	To
Apples—			
Bramley's Seedling	per barrel	s. d. 40 0	s. d. 42 0
Mixed	"	35 0	40 0
American	"	18 0	50 0
FLOWERS.			
Anemone "St. Brigid"	per doz. bunches	2 6	2 4
Narcissi	"	1 10	2 2
Pelargonium	"	0 8	0 10
VEGETABLES.			
Cabbage—			
York	per load	20 0	32 0
Savoy	"	37 0	72 0
Celery	per dozen	1 6	3 6
Cauliflowers	per flasket	1 6	1 8
Parsnips	per sack	3 3	4 6
Carrots	per doz. bunches	1 6	1 10
Brussels Sprouts	per float	3 6	4 6
Artichokes (Jer.)	"	3 6	4 0
Leeks	per doz. bunches	0 6	1 2
Spinach	per tray	1 4	1 6
Turnips, White	"	1 8	1 10
Parsley	"	3 0	4 0
Thyme	per bunch	0 9	1 0
Sage	"	0 2	0 6

R. J. B.

Smith's "Perfect" Patent Powder

WEED KILLER

MARVELLOUS INVENTION & MOST EFFECTIVE

Nothing like it ever seen before. Soluble in Cold Water. All Tins Free. No Return Empties

TESTIMONY

ENNISCOTHY

The Powder Weed Killer I got from you last month is the best I ever used.

GLENELLEN, MILTOWN

Your Weed Killer is the only one I ever tried that is any use. Yours never fails —L. CREAGHE CREAGHE-HOWARD

		PRICES —	
1 Tin, to make	25 gallons	£0 2 3	postage and packing 6d.
4 Tins	100 "	0 9 0	
8 Tins	200 "	0 17 0	Box 6d extra.
12 Tins	300 "	1 5 0	9d. "
20 Tins	500 "	1 18 6	1s. "
40 Tins	1,000 "	3 13 6	Boxes 2s. "

Eight Tins sent Carriage Paid to any Station in Ireland.

ANY DEFECTIVE TINS WILL BE EXCHANGED

In ordering 1 Tin remittance must include 3d. for postage and packing.
 2 Tins " " " 10d. "
 3 Tins " " " 1s. "

SMITH'S PERFECT LIQUID WEED KILLER

RETAIL PRICES (1 Gall. to 25 Gall.)

1 gallon	£0 2 3	6 gallons	£0 13 0	16 gallons	£1 12 0
2 gallons	0 4 6	8 "	0 17 0	18 "	1 16 0
3 "	0 6 9	10 "	1 1 0	20 "	1 18 6
4 "	0 9 0	12 "	1 5 0	40 "	3 13 6
5 "	0 11 0				

Carriage paid on eight gallons to any Railway Station in Ireland.

DOUBLE STRENGTH (1 gall. to 50 gall.)

1 gallon	£0 4 6	5 gallons	£1 0 0	10 gallons	£1 13 0
2 gallons	0 9 0	6 "	1 3 6	20 "	3 9 0
3 "	0 13 0	8 "	1 10 6	40 "	6 13 0
4 "	0 16 0				

Carriage paid on four gallons and upwards

DRUMS AND CASES CHARGED EXTRA. Full price allowed for empties returned in good condition. Carriage Paid

PRICES OF PACKAGES. Drums—1 gal., 1/6; 2 gal., 2/6; 3 gal., 3/-; 4 gal., 4/-; 5 gal., 4/6; 6 gal., 5/6; 8 gal., 7/-; 10 gal., 9/-. Casks—3 to 12 gallons, 4/-; 16 to 40 gallons, 6/-.

IRISH AGENT—

D. M. WATSON, M.P.S.,
 Telephone, 1971

NOTICE—These Preparations are Poisonous. Sole Proprietors, MARK SMITH, Ltd. Horticultural Chemist

61 South Great George's Street
 DUBLIN

Insecticides, Fungicides, Fumigants, Spraying Machines, &c.

Miscellaneous Section.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

TRAINING OF WOMEN FOR FARM WORK.

The Department of Agriculture and Technical Instruction have made arrangements for a further short Special Course of Training in Farm Work, to be given at the Munster Institute, Cork, to young women who desire to undertake farm work in the present emergency.

The Course will be sufficient to render a suitable young woman useful on a farm. It will also suffice to enable those who, from any cause, may not prove suitable for farm labour to test their capabilities before actually entering upon service.

For particulars apply to

THE SECRETARY, Department of Agriculture and Technical Instruction for Ireland, Upper Merrion St., DUBLIN.

NOW IS THE TIME TO PLANT AT REDUCED PRICES KELWAY'S GLADIOLUS BULBS (All British), if you wish to have a glorious display of flowers in the autumn when blooms are scarce. Write at once for their Illustrated Catalogue and make a selection that will enable you to send flowers to the Wounded Soldiers in Hospitals and Nursing Homes from July till the frosts come.

Carriage paid and packing free for prepaid order.

KELWAY & SON, Retail Plant Department, LANGPORT, SOMERSET

SEEDS

SEEDS

VEGETABLE

FLOWER

HIGHEST QUALITY

BEST VALUE

Please write for our unique 124 page pocket seed guide, full of practical and useful information free.
THE PREMIER SEED CO., Ltd., 117 London Road, BRIGHTON

DAISY HILL NURSERY, NEWRY

is the most interesting Nursery in the Country and contains the most complete Collections of Shrubs and Plants extant.

T. SMITH.

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
Since quantity of seeds ordered and have "Satisfied" quality of plants. Amounts of plants value of seeds ready to write for "Satisfied" seeds. SPECIALISTS in all garden seeds. Bulb Buds and Ferns. Plants from 1/6 to 1/2.
RICHARD SANKEY & SON, LTD.
Bulwell, Nottingham

KINGSTOWN Horticultural Show

WEDNESDAY
1st AUGUST, 1917

Schedule of Prizes, &c., from the Hon. Secretary Kingstown Horticultural Society, Technical School, Kingstown.

AUTO-SHREDS

Is CERTAIN DEATH to Leaf-mining Maggots, Mealy Bug and all Pests infesting plants under glass, &c. Simple to use, no apparatus required. In Boxes to Fumigate 1,000 cubic feet, 6d.; No. 4 Packet 2,500 cubic feet, 1/- each; for tender and ordinary plants, 10,000 cubic feet, 3s. 6d. each. Obtained of Seedsmen and Florists; if unobtainable apply direct—

W. DARLINGTON & SONS, Ltd.

Wholesale Horticultural Sundriesmen, HACKNEY, LONDON, E. 8.

Trade Terms and Catalogue of Sundries upon receipt of business card



SEED of choice and rare ALPINES, from a very large collection. All those who possess a ROCK GARDEN should send for my Catalogue, they will find something new and desirable. H. CORREYON, CHENE-BOURG, GENEVA.

IF YOU COULD GO

to each reader of this paper and could personally draw his attention to your own advertisement, at the cost of a few shillings only, and without wasting a minute of your time, you would be glad of the chance.

You can do what comes to the same thing—use an illustration Block in your advertisement that will compel his attention. We can get up sketches and supply blocks for Advertisements, Booklets, and Catalogues, &c.

RISH PHOTO ENGRAVING CO.
30 MIDDELBURY ST. DUBLIN

To Horticulturists

PLANTS MUST BE FED

The two main elements of success in gardening are proper tillage and intelligent Fertilizing ::

Always follow up your Autumn and Winter manuring with a topdressing in the Spring and early Summer of

NITRATE OF SODA

It is easily applied—quick in its action—and a necessary ingredient for the well-being of the plant ::

Any of the Leading Seedsmen and Dealers will supply it.

Send for the Pamphlets entitled "Chemical Fertilizers in the Garden" and "The Manuring of Orchards and Fruit Trees," supplied gratis and post free, by

The Chilean Nitrate Committee

18 DONEGALL QUAY, BELFAST

or

Friars Buildings, New Broad Street,
LONDON, E.C.

ESTABLISHED 1832. TELEPHONE 3351 (Private Branch Exchange). TELEGRAMS—"BROOKS," DUBLIN

HORTICULTURAL GLASS, PAINTS, &c.

GLASS . . . Cut to dimensions, packed and delivered at your railway station. Also stocked in the regular box sizes.

PAINT . . . "BROMAS" for general household and estate purposes
"VALENTINE" for hay barns, &c., doubles the life of galvanized iron.

"DEAUTITE" . . . "PETREX" for conservatories, does not flake off.
Plastic Repair Compound for repairing leaky roofs and cracked glass, also for General Repair Work.

BOILERS . . . and heating plants, newest Types. Please ask for lists.

GREENHOUSES . . . And GARDEN FRAMES.

Also TIMBER, SLATES, BRICKS, IRONMONGERY, and every Building Requisite

BROOKS THOMAS & CO.
LTD.

BUILDERS' PROVIDERS, Sackville Place, **Dublin**

My Hardy Plant Catalogue

IS
NOW READY . . . Post Free on Application

SPECIALITIES

PHLOX, DELPHINIUMS ::
MICHAELMAS DAISIES, ALPINES

W. WELLS, Junior
Hardy Plant Nurseries
MERSTHAM — SURREY

BEGONIAS SEED 2, 8 and 5/- per packet

for Exhibition, Greenhouse, Bedding, Hanging Baskets, &c. Awarded 45 Gold Medals. Illustrated Catalogue free.

DELPHINIUMS

from our unsurpassed Gold Medal Collection, choice named varieties in strong ground roots, 12/-, 15/-, 20/-, 25/- & 30/- per doz.

OTHER SPECIALITIES

Carnations, Cyclamen, Polyanthus, Blue Primrose, Violets, &c.

BLACKMORE & LANGDON, BATH.

For Destroying Weeds, Moss, &c., on Garden Walks, Drives, Roads, &c.

“ACME”

Powder Weed Killer

AWARDED
GOLD MEDAL BY ANGLO-AMERICAN EXHIBITION;
COMMENDED BY ROYAL HORTICULTURAL SOCIETY.

Dissolves quickly in Cold Water.

Sizes—No. 1.	Sufficient to make 25 gallons,	2 3	tin.
No. 2.	50	4 2	..
No. 3.	100	8 -	..
No. 3 Carriage Paid. Tins Free			

LIQUID WEED KILLER.—Send for particulars.

Lawn Sand.—Marvellous killing effect on weeds, but fertilises the grass. 7 lbs., 2 3; 14 lbs., 4 3; carriage paid on 56 lbs., 16 -

Arsenate of Lead Paste.—For destroying all leaf-eating insects, caterpillars, &c. 1 3 per lb.

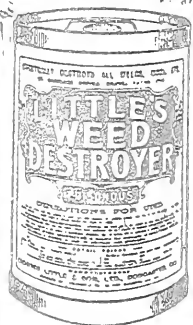
“Fumerite.”—For destroying all ground vermin. To be dug into the soil. 14 lbs., 3 9; 28 lbs., 7 -; 56 lbs., 12 3; 21 - per cwt., carriage paid.

Extract of Quassia.—Pint, 1 8; carriage paid on 1 gallon, 5 -

Compound Quassia-Tobacco Insecticide.—Pint, 1 3, post free.

ACME CHEMICAL CO., Ltd.
TONBRIDGE, KENT, and RIVER ST., BOLTON, LANCASHIRE
Sole by MESSRS. HAYES, CONYNGHAM & ROBINSON, Ltd., Grafton St., and MESSRS. DELMOND & SONS, 57 and 58 Dawson St., Dublin.

Little's Weed Destroyers



KILLS ALL WEEDS, MOSSES, &c.
On Carriage Drives, Gravel Paths.

Double the strength of most Weed Killers.

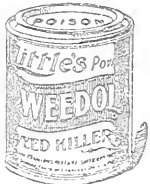
1 gallon to 50 gallons water.

1 gallon Drum, 3 6 ... Drum Free.
40 .. Cask, 90/- each.; Cask Free.

LITTLE'S WEEDOL
Powder Weed Killer

Per 1/9 Tin,
To make 25 Gallons.

Saves Trouble and Expense of Returning Packages.



Morris Little & Son, Ltd. Doncaster

By APPOINTMENT TO



HIS MAJESTY THE KING.

MACKENZIE & MONCUR, LTD.

HOTHOUSE BUILDERS

HEATING, VENTILATING AND SANITARY ENGINEERS AND IRONFOUNDERS.

Although we are at present employed largely on National War Service, we are still in a position to carry out urgent private work. We ask our patrons give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

EDINBURGH { Registered Office and Works BALCARRES STREET,
 { and Edinburgh Foundry, SLATEFORD ROAD.
LONDON—8 Camden Road, N.W. GLASGOW—121 St. Vincent St.

W. RICHARDSON & CO.

SPECIALISTS IN THE
MANUFACTURE OF ALL KINDS OF

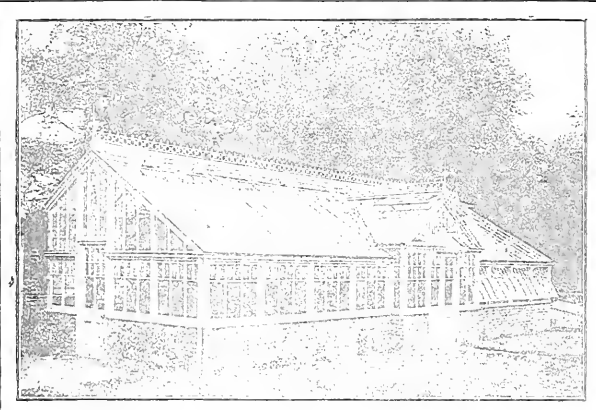
HORTICULTURAL BUILDINGS,

ALSO

HEATING ENGINEERS

PLANS AND ESTIMATES prepared free
of cost.

LARGE CATALOGUE of photographic
views of Horticultural Buildings free
on application.



DARLINGTON

(LONDON OFFICE: Belgravia Chambers, Victoria St., S.W.)

Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held at 5 Molesworth Street, Dublin, on the 13th ult., Mr. E. H. Walpole presiding. Sir Frederick Moore conveyed to the Council acknowledgments of the Executive of the Irish Branch of the Vegetable Products' Committee for supplying fruit and vegetables to the Navy, which had been expressed at the second annual meeting of the latter, for the valuable help afforded to the project by the Society. A provisional committee was appointed to make preliminary arrangements for the Fête to be held in the interests of the above project, in conjunction with the August Show. It was resolved that a letter be sent to members of the Society advising them of the Fête and asking for their kind co-operation in the matter. A cultural certificate was awarded to Mr. G. Bower, gardener to Sir Stanley H. Cochrane, Woodbrook, Bray, for fine samples of Giant Mignonette exhibited at the meeting.

The Growing of Medicinal Plants.

THIS matter has received attention from the Agricultural Organisation Society of England. The Governors appointed Mr. Escombe, a well known botanist, to inquire into the subject. His report was to the effect that the cultivation of medicinal plants was too uncertain commercially to warrant it being undertaken by small holders in place of growing food stuffs.

Catalogues.

W. WELLS, jun., of Merstham, Surrey, well known as a grower and raiser of Chrysanthemums, sends his new list of herbaceous and alpine plants. It is a compact and very well printed book containing the cream of hardy plants suitable for general cultivation. Two coloured plates of Delphiniums are included as well as a double page engraving of the fine new variety Mrs. H. Kaye. The prices throughout are very reasonable, and, as catalogues are likely to be scarce now, those interested in hardy plants would do well to write for a copy.

Humble Pie.

COLD POTATOES can be used up in many ways, but the following method makes an excellent dish:—Slice the potatoes and line a pie-dish with them, and on this put a little parsley, pepper, salt, and a small amount of onion. Another layer of sliced potatoes and seasoning, which may be repeated until the dish is full, and over all may be poured a little milk. The dish can then be put in a warm oven and allowed to get thoroughly heated through. It should be served hot.

Show Fixtures, 1917.

August 1st—Kingstown Horticultural Show.
Hon. Sec.—R. Macdonald, M.A., Technical Institute, Kingstown.
August 8th—Terenure and Districts Horticultural Society. Hon. Sec.—E. Carroll, 1 Rostrevor Terrace, Rathgar.

IT MUST BE
"ABOL"

KILLS ALL INSECT PESTS.



No other Insecticide possesses such sterling qualities as "Abol." Each time you purchase "Abol" you can rest assured that your money has been well invested. "Abol" is the means of increasing the value of all plant life. Non-poisonous. Get a tin to-day. Pint, 1/6; quart, 2/6; 1/2 gallon, 4/6; gallon, 7/6; 5 galls., 27/6.

"ABOL"
FERTILIZER
FERTILIZES MOST



Increase your garden crops by one-third! Get the most you can out of your garden. "Abol" Fertilizer is unequalled, and it is being used more than ever this season. Tins 6d., 1/7, 2/6; Bags, 28 lbs., 7/6; 1 cwt., 18/.

WEEDS? "ABOL"

Cheap. Effective. Gallon makes 50. Tins—1/2 gall. 3/4; 1/4 gall. 4/6; 3 galls. 15/6; 10 gall. 56/.

WEED KILLER
IS WHAT YOU WANT

If difficulty in obtaining from SEEDSMEN, IRONMONGERS, &c., WRITE US E. A. WHITE, Ltd., 57 Beltrving, PADDOCK WOOD, KENT.

✓ SLUGS SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (f.o.r., London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.
Awarded Medal at Royal Horticultural Exhibition, 1911.

A List of the most Desirable Varieties of most Kinds of Fruits.

The list was compiled by the Royal Horticultural Society's Fruit Committee and sent to about a hundred experienced gardeners in Great Britain

one question (15), which dealt with market varieties of apples.

The selections will be found most interesting and instructive, and should prove exceptionally useful to intending planters, as it is often a source of worry to the inexperienced to select varieties most likely to succeed.

The voters for Ireland were Sir F. W. Moore,

Fruit Growing in British Columbia.



A PENTICON ORCHARD—TWO YEAR OLD TREES—
FINE SPECIMENS OF B. C. APPLES—SPRAYING FRUIT
TREES SCIENTIFICALLY. (Photo by courtesy of the
AGENT-GENERAL for B. C.)

and Ireland, of whom apparently eighty-five replied.

They were requested to state the varieties which were found best and most satisfactory in each voter's own district and to confine themselves strictly to the list submitted. They were also particularly requested to give their opinion from a private garden point of view, except in

Royal Botanic Gardens, Dublin; Mr C. Bennett, Muckross Abbey, Killarney; Mr. T. W. Bolas, Mount Stewart, Newtownards; Messrs. A. Dickson & Sons, Newtownards; and Mr. W. H. Lee, Powerscourt Castle, Wicklow.

The list is sold by W. Wesley & Son, 28 Essex Street, Strand, London, W.C. Price, 2s. net, post free.



All ladies who wish to economise

will welcome Walpoles' Spring Sale of Household Linens. It offers, even now things as so dear. Bargains at Factory Prices. But the offers can only hold good while Stocks last. So ladies

should write at once for Walpoles' Sale Catalogue

which tells all about the Bargains. Walpoles' Pay Carriage on all Orders in the British Isles. **WALPOLES' SUFFOLK STREET DUBLIN.**

ONLY MEDAL INTERNATIONAL EXHIBITION EDINBURGH-1886
ONLY GOLD MEDAL EDINBURGH-1891

THOMSON'S CELEBRATED MANURES

PERFECT PLANT FOODS.
Unrivalled for all garden crops. Prices.—Vine, Plant and Vegetable Manure—1 cwt. 20/-; 56 lbs. 12/6; 28 lbs. 7/6; 14 lbs. 4/6; 7 lbs. 2/6. Tins 2/6, 1/- and 6d. Carriage paid anywhere on 56 lbs. and up. Special Chrysanthemum and Top Dressing Manure—56 lbs. 20/-; 28 lbs. 11/-; 14 lbs. 6/-; 7 lbs. 3/6. Tins 1/- Carriage paid anywhere on 28 lbs. and up. Sold by all Seedmen. Sole makers, Wm. Thomson & Sons, Ltd., Clontarf, N.E.

Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE DAY
"NIQUAS"

(NON-POISONOUS) IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use.

It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/3; five gallons, 25/-; ten gallons, 45/-; 1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers
Analysis on Application

Sold in Tins, 8d., 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure. 28 lbs., 8/6; 56 lbs., 13/6; 112 lbs., 22/6

CORRY'S

"OPTIMUS" WORM POWDER
(NON-POISONOUS)

For the complete destruction of Worms on Lawns, Bowling Greens, Putting Greens, and Golf Links.

NOT INJURIOUS TO ANIMALS OR BIRDS.

Prices—

Lbs. 7 14 28 56 112 5 cwt. 10 cwt. 1 ton
Each 1/9 3/- 5/- 7/6 12/- for 57/6 110/- 210/-

For Fumigating in Greenhouses.

"LETHORION"

IMPROVED METAL CONES

Registered No. 62,597

To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 5d. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 3d. each.

No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

FOWLER'S LAWN SAND

This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, 1/2 cwt., 3/6; 1 cwt., 16/-; 1 cwt., 30/-

ELLIOTT'S

"SUMMER CLOUD" SHADING

Registered Trade Mark No. 14,629.

(The only genuine original and Improved article)

For Greenhouses. A pleasant green shade is given to the glass. In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & Co., Ltd., LONDON

Merchants and Manufacturers of Nurserymen, Seedsmen and Florists' Sundries and Tobacco Preparations Free of Duty, for Agricultural and Horticultural Purposes.

Dublin Wholesale Markets.

DURING the month the supplies of vegetables exceeded slightly those of the preceding month. The spring being so late, no fresh vegetables of any sort were to be seen. But with the genial weather coming now it is hoped that it will hasten on Cabbage and Salads.

The supplies of Irish-grown Apples have apparently become exhausted, as only a few barrels of Bramley Seedling were sent into the market. The prices were the same as last month.

In the flower section the market was well stocked with Narcissi, Arum Lilies, Anemone "St. Brigid," Carnations and Tulips.

Vegetables sold well throughout the month. Cabbage advanced in price although they were of rather poor quality. Savoy Cabbage has also risen in price: one load fetched the extraordinary figure of 90s. There were small lots of Broccoli, also Celery: this vegetable was of fair quality, and the prices realised were good. The quantity of Brussels Sprouts was up to their usual standard, and prices rose considerably. Carrots and Parsnips were plentiful: the latter vegetable gained in price as compared with last month. There was a moderate supply of Leeks, also of White and Yellow Turnips. Spinach, Parsley, Sage and Thyme were up to the average standard.

Rhubarb was sent in in fair quantity, and the prices were very good.

The following is a price list for the month:—

		FRUIT.		From	To
				s. d.	s. d.
Apples—					
Bramley's				38	0
Seedling	per barrel			0	40
American	"			46	0
					50
					0
		FLOWERS.			
Narcissi	per doz. bunches	1	6		2
Arum Lilies	" "	1	8		2
Anemone "St. Brigid"	" "	1	6		2
Carnations	" "	2	6		3
Tulips	" "	1	9		3
					0
		VEGETABLES.			
York Cabbage	per load	40	0		60
Savoy	"	45	0		90
Celery	per doz. bunches	3	6		5
Cauliflowers	per flasket	1	6		2
Leeks	per doz. bunches	0	10		1
Carrots	" "	1	9		2
Parsnips	per bag	3	6		7
Brussels Sprouts	per float	4	0		5
Rhubarb	per doz. bunches	3	0		8
Parsley	per tray	2	3		3
Artichokes, Jer.	per ½ bushel	4	0		4
Thyme	per doz. bunches	1	4		1
Spinach	per tray	2	0		2
					6

R. J. B.

Smith's "Perfect" Patent Powder

WEED KILLER

MARVELLOUS INVENTION

MOST EFFECTIVE

Nothing like it ever seen before. Soluble in Cold Water. All Tins Free. No Return Empties

		PRICES —			
1 Tin, to make	25 gallons	£0 2 3	postage and packing	6d.	
4 Tins	100 "	0 9 0			
8 Tins	200 "	0 17 0	Box 6d extra.		
12 Tins	300 "	1 5 0	" 9d. "		
20 Tins	500 "	1 18 6	" 1s. "		
40 Tins	1,000 "	3 13 6	Boxes 2s. "		

Eight Tins sent Carriage Paid to any Station in Ireland.

ANY DEFECTIVE TINS WILL BE EXCHANGED

In ordering 1 Tin remittance must include 8d. for postage and packing.

2 Tins	"	10d.	"	"
3 Tins	"	1s.	"	"

TESTIMONY

ENNISCOOTHY

The Powder Weed Killer I got from you last month is the best I ever used.

GLENELLEN, MILTOWN

Your Weed Killer is the only one I ever tried that is any use. Yours never fails

—L. CREAGHE CREAGHE-HOWARD

SMITH'S PERFECT LIQUID WEED KILLER

RETAIL PRICES (1 Gall. to 25 Gall.)

1 gallon	£0 2 3	6 gallons.	£0 13 0	16 gallons.	£1 12 0
2 gallons	0 4 6	8 "	0 17 0	18 "	1 16 0
3 "	0 6 9	10 "	1 1 0	20 "	1 18 6
4 "	0 9 0	12 "	1 5 0	40 "	3 13 6
5 "	0 11 0				

Carriage paid on eight gallons to any Railway Station in Ireland.

DOUBLE STRENGTH (1 Gall. to 50 Gall.)

1 gallon	£0 4 6	5 gallons	£1 0 0	10 gallons.	£1 18 0
2 gallons	0 9 0	6 "	1 3 6	20 "	3 9 0
3 "	0 13 0	8 "	1 10 6	40 "	6 13 0
4 "	0 16 0				

Carriage paid on four gallons and upwards

DRUMS AND CASKS CHARGED EXTRA. Full price allowed for empties returned in good condition, Carriage Paid

PRICES OF PACKAGES. Drums—1 gal., 1/6; 2 gal., 2/6; 3 gal., 3/-; 4 gal., 4/-; 5 gal., 4/6; 6 gal., 5/6; 8 gal., 7/-; 10 gal., 9/-.
Casks—8 to 12 gallons, 4/-; 16 to 40 gallons, 6/-

IRISH AGENT—

NOTICE.—These Preparations are Poisonous.

Sole Proprietors, MARK SMITH, Ltd.

D. M. WATSON, M.P.S., Horticultural Chemist

61 South Great George's Street

Telephone, 1971

DUBLIN

Insecticides, Fungicides, Fumigants, Spraying Machines, &c.

Miscellaneous Section

KINGSTOWN :: Horticultural Show

WEDNESDAY
1st AUGUST, 1917

Schedule of Prizes, &c., from the Hon. Secretary
Kingstown Horticultural Society, Technical
School, Kingstown.

NOW IS THE TIME TO PLANT at Reduced prices.
Kelway's new and choice Hardy Perennial Plants of
all kinds.

Kelway's Famous Gladioli.
Kelway's new and choice Pyrethrums.
Kelway's Gay Gladioli.

Write for Reduced Price Lists to

KELWAY & SON, Retail Plant Department,
LANGPORT, SOMERSET.

SEEDS PREMIER SEEDS
VEGETABLE FLOWER
HIGHEST QUALITY BEST VALUE

Please write for Special List of Seeds for sowing
now, post free.

THE PREMIER SEED CO., Ltd., 117 London Road, BRIGHTON

NON-POISONOUS
KEEP YOUR PATHS CLEAR
McDOUGALL'S
WEED-KILLER
WRITE FOR PRICES AND NAME
OF LOCAL DEALER TO
McDougal Bros. Ltd., 100 St. Mark St.

SANKEY'S PATENT GARDEN POTS
One BEST and Cheapest
Some quality is better than quantity. Exchange your
question of quantity for quality. Quantity to that value of
quality, or write for price lists free.
SPECIAL POT'S of all descriptions. Bait Boxes and Fern
Trays from 2s. each.
RICHARD SANKEY & SON, LTD.
Bulwell Works, NOTTINGHAM.

Save
weary
Weeding
and
Backache

WEEDITE
DEATH TO WEEDS
on Garden Paths, &c.
No trouble. Simply dust it on
10 lbs. post free, 3s., or 2s.
lbs. to dress 250 square yards,
5s. 3d., carriage paid.
BOUNDARY CO., Ltd.
Cranmer St., LIVERPOOL

SEED of choice and rare ALPINES, from a very large
collection. All those who possess a ROCK GARDEN
should send for my Catalogue, they will find something
new and desirable. H. CORREYON, CHENE-BOURG,
GENEVA.

AUTO-SHREDS is CERTAIN
DEATH to
Leaf-mining Maggots, Mealy Bug and
all Pests infesting plants under glass. So
Simple to use, no apparatus required. In
Boxes to fumigate 1,000 cubic feet, 4d.;
No. 4 Packet 2,500 cubic feet, 7s. 6d.,
for tender and ordinary plants, 10,000
cubic feet, 30s. 6d., each. Obtained of
Seedsmen and Florists; if unobtainable
apply direct—

W. DARLINGTON & SONS,
Ltd.
Wholesale Horticultural and Sandiestuffs,
HACKNEY, LONDON, E.C.

Trade Terms and Catalogue of Sundries upon receipt of business card



IF YOU COULD GO

to each reader of this paper and
could personally draw his attention
to your own advertisement, at the
cost of a few shillings only, and with-
out wasting a minute of your time,
you would be glad of the chance.

You can do what comes to the
same thing—use an illustration Block
in your advertisement that will com-
pel his attention. We can get up
sketches and supply blocks for
Advertisements, Booklets, and Cata-
logues, &c.

W. & A. GIBSON & CO.
10, BEECHER STREET, DUBLIN

Greener Lawns, Finer Flowers, more forward Vegetables IN ONE WEEK!

After only one week you can see the effect on Lawns, Flowers and Vegetables which have been Fertilized with Nitrate of Soda—an inexpensive chemical, for sale everywhere. Ordinary Farmyard Manure requires to lie in the soil months and months before it begins to feed plants.

Nitrate of Soda

begins to be absorbed and assimilated by Plants immediately. The results are manifest in the first week. Nitrate of Soda, besides being very quick in its action, is cheap, but must be used judiciously.



Send for Pamphlet "Chemical Fertilizers in the Garden," supplied gratis and post free by

THE CHILEAN NITRATE COMMITTEE, Friars House, New Broad St., London, E.C.
AND 18 DONEGALL QUAY, BELFAST

ESTABLISHED 1832. TELEPHONE 3351 (Private Branch Exchange). TELEGRAMS—"BROOKS," DUBLIN

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| GLASS . . . | Cut to dimensions, packed and delivered at your railway station. Also stocked in the regular box sizes. |
| PAINT . . . | "BROMAS" for general household and estate purposes
"VALENTINE" for hay barns, &c., doubles the life of galvanized iron.
"PETREX" for conservatories, does not flake off. |
| "DEAUTITE" . . . | Plastic Repair Compound for repairing leaky roofs and cracked glass, also for General Repair Work. |
| BOILERS . . . | and heating plants, newest Types. Please ask for lists. |
| GREENHOUSES | And GARDEN FRAMES. |

Also TIMBER, SLATES, BRICKS, IRONMONGERY, and every Building Requisite

BROOKS THOMAS & CO.
LTD.
BUILDERS' PROVIDERS, Sackville Place, **Dublin**

My Hardy Plant Catalogue

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NOW READY . . . Post Free on Application

SPECIALITIES

PHLOX, DELPHINIUMS ::
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W. WELLS, Junior
Hardy Plant Nurseries
MERSTHAM ————— SURREY

BEGONIAS SEED 2/6 and 5/- per packet

for Exhibition, Greenhouse, Bedding, Hanging Baskets, &c. Awarded 45 Gold Medals. Illustrated Catalogue free.

DELPHINIUMS

from our unsurpassed Gold Medal Collection, choice named varieties in strong ground roots, 12/-, 15/-, 20/-, 25/- & 30/- per doz.

OTHER SPECIALITIES

Carnations, Cyclamen, Polyanthus, Blue Primrose, Violets, &c.

BLACKMORE & LANGDON, BATH.

For Destroying Weeds, Moss, &c., on Garden Walks, Drives, Roads, &c.

“ACME”

Powder Weed Killer

AWARDED

GOLD MEDAL BY ANGLO-AMERICAN EXHIBITION ;
COMMENDED BY ROYAL HORTICULTURAL SOCIETY.

Dissolves quickly in Cold Water.

Sizes—No. 1. Sufficient to make 25 gallons, 2/3 Tin.
No. 2. ” ” ” 50 ” 4 2 ”
No. 3. ” ” ” 100 ” 8 - ”
No. 3 Carriage Paid. Tins Free.

LIQUID WEED KILLER.—Send for particulars.

Lawn Sand.—Marvellous killing effect on weeds, but fertilises the grass. 7 lbs., 2/3; 14 lbs., 4/3; carriage paid on 56 lbs., 16/-

Arsenate of Lead Paste.—For destroying all leaf-eating insects, caterpillars, &c. 1/3 per lb.

“Fumerite.”—For destroying all ground vermin. To be dug into the soil. 14 lbs., 3/9; 28 lbs., 7/-; 56 lbs., 12/6; 21/- per cwt., carriage paid.

Extract of Quassia.—Pint, 1/6; carriage paid on 1 gallon, 5/-

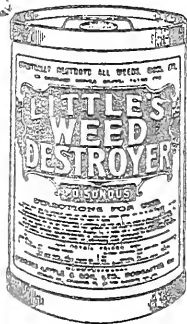
Compound Quassia-Tobacco Insecticide.—Pint, 1/6, post free.

ACME CHEMICAL CO., Ltd.

TONBRIDGE, KENT, and RIVER ST., BOLTON, LANCASHIRE

Sold by MESSRS. HATES, CONYNGRAM & ROBINSON, LTD., Grafton St., and MESSRS. DRUMMOND & SOSS, 57 and 58 Dawson St., Dublin.

Little's Weed Destroyers



KILLS ALL WEEDS, MOSSES, &c.,

On Carriage Drives, Gravel Paths.

Double the strength of most Weed Killers.

1 gallon to 50 gallons water.

1 gallon Drum, 3/6 ... Drum Free.

3/40 .. Cask, 90/- each., Cask Free.

LITTLE'S WEEDOL Powder Weed Killer

Per 1/9 Tin, To make 25 Gallons.

Saves Trouble and Expense of Returning Packages.



Morris Little & Son, Ltd. Doncaster

By APPOINTMENT TO



HIS MAJESTY THE KING.

MACKENZIE & MONGUR, LTD.

HOTHOUSE BUILDERS

HEATING, VENTILATING AND ELECTRICAL ENGINEERS AND IRONFOUNDERS.

Although we are at present employed largely on National War Service, we are still in a position to carry out private work in the way of repairs and renewals. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

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LONDON—8 Camden Road, N.W. GLASGOW—121 St. Vincent St.

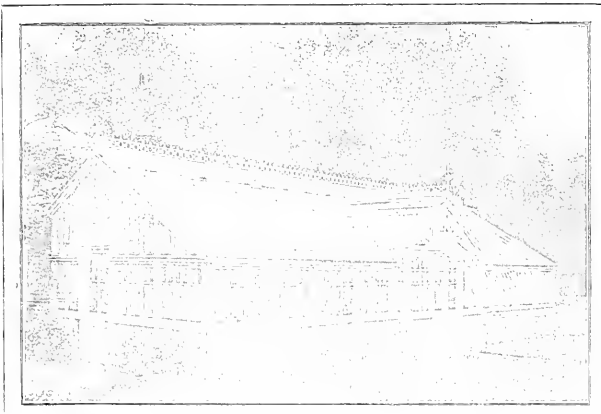
W. RICHARDSON & CO.

SPECIALISTS IN THE
MANUFACTURE OF ALL KINDS OF

HORTICULTURAL BUILDINGS,

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PLANS AND ESTIMATES prepared free
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LARGE CATALOGUE of photographic
views of Horticultural Buildings free
on application.

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(LONDON OFFICE: Belgravia Chambers, Victoria St., S.W.)

Royal Horticultural Society of Ireland.

THE Autumn Show will be held in Lord Iveagh's Grounds, Dublin, on August 21st and 22nd, and entries close on August 13th. The schedule includes the usual classes for Fruit, Flowers and Vegetables, though it is possible that the first and last sections will be most popular. It is most desirable in times like the present that everything possible should be done to stimulate the production of anything in the way of food in the greatest quantity and of the highest quality. Classes are introduced for Allotment Holders, and we hope there will be a large response. Employers will be doing a great service if they encourage their gardeners to enter the lists, and by putting up as many exhibits as possible stimulate the allotment holders to continue their efforts not only this year, but in years to come. Ireland can produce some of the finest garden produce in the world, let us then get from the soil every ounce it can be made to yield.

New York Botanical Garden.

BULLETIN No. 35 contains the Annual Report of the Secretary and Director-in-Chief, and is most interesting as showing the immense interest taken in botanical science and nature study by our cousins across the sea. A pleasing feature is the practical interest taken in the gardens by wealthy citizens who do not hesitate to contribute in cash towards the development of the garden and to the furtherance of various studies and investigations.

For the Red Cross.

THE Glasgow and West of Scotland Horticultural Society has again decided to hold a Flower Show in aid of the funds of the Red Cross. An advance copy of the schedule has been kindly sent to us, and the Society is to be highly congratulated on the excellent Prize List which is not inferior to some of the best sent out in peace times. We gather that in addition to entries for competition, plants, flowers, fruit, vegetables and honey are also received for sale, the proceeds, together with those of the Show, being handed to the Red Cross and other War Funds. Last year no less a sum than £425 was thus allocated and it is interesting to note that this is the third Show and Sale promoted by the Directors.

Valuable prizes are offered throughout: for instance, in the class for 12 dishes of fruit the prizes are £15, £10, £7 and £3, while for 8 bunches of grapes the first prize is £8 and the Thompson Challenge Trophy value 50 guineas, and other prizes of £6 and £4 respectively. Equally generous prizes are offered for flowers and vegetables.

A special class is confined to allotment holders. Intending competitors should write at once for a schedule that there may be ample time to study it. The Show opens on Wednesday, 5th September, and entries close on 22nd August.

Show Fixtures, 1917.

- August 1st—Kingstown Horticultural Show. Hon. Sec.—R. Macdonald, M.A., Technical Institute, Kingstown.
- August 8th—Terenure and Districts Horticultural Society. Hon. Sec.—E. Carroll, 1 Rostrevor Terrace, Rathgar.
- August 21st and 22nd—Royal Horticultural Society. Lord Iveagh's Grounds.

**IT MUST BE
"ABOL"**

KILLS ALL INSECT PESTS.



No other Insecticide possesses such sterling qualities as "Abol." Each time you purchase "Abol" you can rest assured that your money has been well invested. "Abol" is the means of increasing the value of all plant life. Non-poisonous. Get a tin to-day. Pint, 1/6; quart, 2/6; 1/2 gallon, 4/-; gallon, 7/6; 5 gallons, 27/6.

**"ABOL"
FERTILIZER
FERTILIZES MOST**



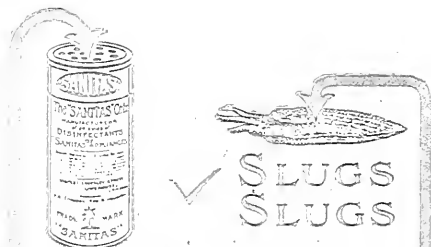
Increase your garden crops by one-third! Get the most you can out of your garden. "Abol" Fertilizer is unequalled, and it is being used more than ever this season. Tins 6d., 1/-, 2/6; Bags, 28 lbs., 7/6; 1 cwt. 18/-

"WEEDS? "ABOL"

Cheap. Effective. Gallon makes 50. Tins—1/2 gall. 3/-; 1 gall. 4/6; 3 galls. 12/-; 10 gall. 36/-

**WEED KILLER
IS WHAT YOU WANT**

If difficulty in obtaining from SEEDSMEN, IRONMONGERS, &c., WRITE US E. A. WHITE, Ltd., 37 Seltring, PADDOCK WOOD, KENT.



"SANITAS" POWDER

will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (i.o.r. London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.

Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

Snowy White Perennials

Walpoles' Royal
Irish Linen
Table Cloths
Napkins
Sheets
Pillow Cases
Towels
Afternoon Tea Cloths
Fancy Linens
Handkerchiefs
Bedspreads

Catalogue and Patterns
will be sent Post Free

WALPOLES'
Of DUBLIN

Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE DAY "NIOUAS"

(NON-POISONOUS) IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use. It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 45/-; 1 gallon sufficient for 30 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers
Analysis on Application

Sold in Tins, 6d., 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure. 28 lbs., 3/6; 56 lbs., 13/6; 112 lbs., 22/6

CORRY'S

"OPTIMUS" WORM POWDER

(NON-POISONOUS)

For the complete destruction of Worms on Lawns, Bowling Greens, Putting Greens, and Golf Links.

NOT INJURIOUS TO ANIMALS OR BIRDS.

Prices—

Lbs. 7 14 28 56 112 5 cwt. 10 cwt. 1 ton
Each 1/9 3/- 5/- 7/6 12/- for 57/6 110/- 210/-

For Fumigating in Greenhouses.

"LETHORION"

IMPROVED METAL CONES

Registered No: 82,587

To destroy Insect Pests. The Cones attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 3d. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 3d. each.

No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

FOWLER'S LAWN SAND

This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, 1/2 cwt., 3/6; 1 cwt., 16/-; 2 cwt., 30/-

ELLIOTT'S

"SUMMER CLOUD" SHADING

Registered Trade Mark No. 14,923.

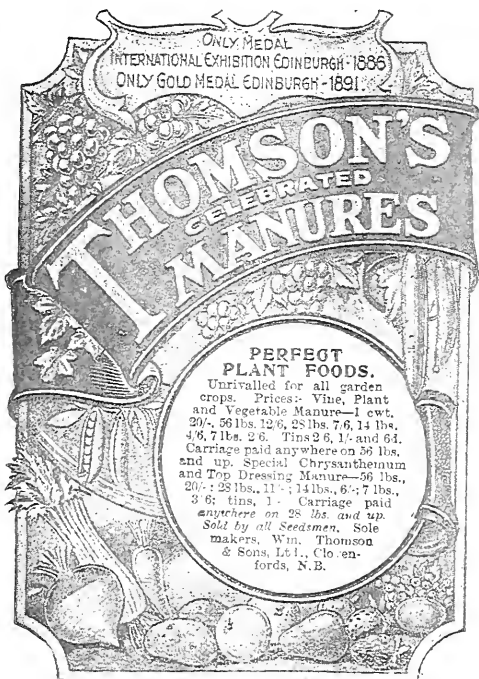
(The only genuine original and Improved article)

For Greenhouses. A pleasant green shade is given to the glass. In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & Co., Ltd., LONDON

Merchants and Manufacturers of Nurseriesmen, Seedsman and Florists' Sundries and Tobacco Preparations Free of Duty, for Agricultural and Horticultural Purposes.



Dublin Wholesale Markets.

THERE has been a general activity in the market for the past month. This activity was mainly due to buyers coming to see what vegetables were for sale; the majority of them were badly disappointed. This has been the worst month in the markets for a number of years. But better prospects are looked for in the near future. The supply of Irish grown Apples, as one would expect, is completely exhausted, and American supplies are considerably restricted by the submarine blockade.

The flower department is the only one that is holding its own: large supplies of Narcissi, "Pheasant Eye" Tulips, Anemone "St. Bridget," *Doronicum*, Heaths, Lilac, and Camellia, all were sent in in good condition and readily bought up.

In the vegetable section, Savoy Cabbage has nearly gone; as it is getting late in the season for this vegetable we cannot expect any more. York Cabbage was sent in in fair quantity, but the quality was the poorest seen in the market for years. The seed was apparently sown in early autumn, and, aided by the few weeks of bright sunshine early in the month, most of it had gone to seed. Numerous loads were disposed of in the market at what would be called "good prices." In the absence of good York Cabbage, Broccoli had come greatly into evidence during the month, and, taking it all round, it was of good quality, and demanded good prices. Brussels sprouts, Celery and Parsnips have almost gone; of Leeks only a few bunches were seen. There were small supplies of Carrots, also some trays of Salad, but the heads were small. Rhubarb was well supplied and in fair demand, notwithstanding the scarcity of sugar. It has been suggested to use Sugar Beet, but this vegetable is gone. Dates have

been used instead to sweeten it. The price has fallen a little toward the end of the month. Radish and Seakale were soon bought up; Mint was the only herb seen.

The following is a price list for the month:—

FRUIT.		From	To
		s. d.	s. d.
Apples (American)	per barrel	48 0	50 0
Strawberries	per box	5 6	11 0
FLOWERS.			
Camellia	per doz. bunches	0 4	0 8
Lilac	" "	0 3	0 4
Lily of the Valley	" "	0 10	—
Tulips	" "	1 0	1 6
Heaths	" "	0 5	0 8
Narcissus "Pheasant Eye"	" "	0 9	1 0
Anemone "St. Bridget"	" "	0 8	—
Violas	" "	0 6	—
VEGETABLES.			
Cabbage (York)	per load	20 0	45 0
Broccoli	per flasket	3 6	5 0
Celery	per doz. bunches	0 8	1 2
Seakale	" "	1 0	1 4
Lettuce	per tray	0 6	1 0
Scallions	per bunch	1 2	1 6
Spinach	per float	0 6	1 0
Cucumber	each	0 6	0 8
Potatoes (New)	per lb.	0 5	0 8
Leeks	per doz. bunches	0 8	0 10
Rhubarb	" "	1 0	1 3
Mint	" "	0 4	0 6

R. J. B.

Smith's "Perfect" Patent Powder. WEED KILLER

MARVELLOUS INVENTION MOST EFFECTIVE
Nothing like it ever seen before. Soluble in Cold Water. All Tins Free. No Return Empties

1 Tin, to make 25 gallons	25	2	6	postage and packing 6d.
4 Tins "	100	"	9	0
8 Tins "	200	"	17	0 Box 6d extra.
12 Tins "	300	"	25	0 " 9d. "
20 Tins "	500	"	43	0 " 1s. "
40 Tins "	1,000	"	83	0 3 Boxes 2s. "

TESTIMONY

ENNISCORTHY

The Powder Weed Killer I got from you last month is the best I ever used.

GLENNELLEN, MILTOWS

Your Weed Killer is the only one I ever tried that is any use. Yours ever faithfully

—L. CANNON, CANNON, FERRIS

Eight Tins sent Carriage Paid to any Station in Ireland.

ANY DEFECTIVE TINS WILL BE EXCHANGED

In ordering 7 Tin remittance must include 8d. for postage and packing.

2 Tins	10d.
3 Tins	1s.

SMITH'S PERFECT LIQUID WEED KILLER

RETAIL PRICES (1 Gall. to 25 Gallons.)

1 gallon	8d.	2	0	gall. 12 12	0
2 gallons	1 4	2	12	18	0
3 gallons	2 0	2	20	20	6
4 gallons	2 6	2	28	40	6

Wholesale paid on eight gallons at any Railway Station in Ireland.

DOUBLE STRENGTH (1 Gall. to 50 Gallons.)

1 gallon	21	4	2	0	10	0
2 gallons	42	8	20	20	0	0
3 gallons	63	12	28	40	0	0
4 gallons	84	16	36	40	0	0

Wholesale paid on 10 gallons and upwards

Orders may be sent to either of the following addresses for supplies, provided in good condition. Carriage Paid. 10 Gall. 10/6; 20 Gall. 19/6; 30 Gall. 28/6; 40 Gall. 37/6; 50 Gall. 46/6; 60 Gall. 55/6; 70 Gall. 64/6; 80 Gall. 73/6; 90 Gall. 82/6; 100 Gall. 91/6. Wholesale—100 Gall. 10/6; 200 Gall. 19/6; 300 Gall. 28/6; 400 Gall. 37/6; 500 Gall. 46/6; 600 Gall. 55/6; 700 Gall. 64/6; 800 Gall. 73/6; 900 Gall. 82/6; 1000 Gall. 91/6.

NOTE—These Preparations are Poisonous. Sole Proprietors, MARK SMITH, Ltd.

MARK SMITH, Ltd., Horticultural Chemists, 31 South Great George's Street, DUBLIN. Telephone 437.

Miscellaneous Section.

My Hardy Plant Catalogue

NOW READY Post Free on Application

SPECIALITIES

PHLOX, DELPHINIUMS ::
MICHAELMAS DAISIES, ALPINES

W. WELLS, Junior
Hardy Plant Nurseries
MERSTHAM SURREY

NOW IS THE TIME TO PLANT at Reduced prices. Kelway's new and choice Hardy Perennial Plants of all kinds.

Kelway's Famous Gladioli.
Kelway's many-coloured Pyrethrums.
Kelway's Gay Gillardias.

With our Reduced Price Lists to
KELWAY & SON, Retail Plant Department,
LANGPORT, SOMERSET.

NON - POISONOUS

KEEP YOUR PATHS CLEAN
WITH
McDOUGALL'S WEED KILLER.
WRITE FOR PRICES AND NAME
OF LOCAL DEALER TO
McDougall Bros. Ltd., Port St., Manchester.

WEEDITE
DEATH TO WEEDS
on Garden Paths, &c.
No trouble. Simply dust it on
10 lbs. post free. 3s., or 2¹/₂
lbs. to dress 250 square yards,
8s. 3d., carriage paid.
BOUNDARY CO., Ltd.
Cranmer St., LIVERPOOL.

Save
weary
Weeding
and
Backache

AUTO-SHREDS IS CERTAIN
DEATH to
Leaf-mining Maggots, Mealy Bug and
all Pests infesting plants under glass, &c.
Simple to use, no apparatus required. In
boxes to Fumigate 1,000 cubic feet. 6d.;
No. 4 Packet 2,500 cubic feet, 1- each;
for tender and ordinary plants, 10,000
cubic feet, 3s. 6d. each. Obtained of
Seedsmen and Florists; if unobtainable
apply direct—



W. DARLINGTON & SONS,
Ltd.
Wholesale Horticultural Sundriesmen,
HACKNEY, LONDON, E. 3.

Trade Terms and Catalogue of Sundries upon receipt of business card

PREMIER VEGETABLE SEEDS

HIGHEST QUALITY. BEST VALUE

See our Special List of the Best Varieties for
Summer and Autumn Sowing, post free.

THE PREMIER SEED CO., Ltd., 117 London Road, BRIGHTON

SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
Some quality plants required and have carriage paid in
quantity. Exchange of plants amounts to half value of
quantity of pots for price list. 10s.
SPECIAL POTS in all descriptions. Bulb Bowls and Fern
pots from 2d. each.
RICHARD SANKEY & SON, LTD.
SUNNYSIDE WORKSHOPS, NOTTINGHAM.

SEED of choice and rare ALPINES, from a very large
collection. All those who possess a ROCK GARDEN
should send for my Catalogue, they will find something
new and desirable. H. CORREYON, CHENE-BOURG,
GENEVA.

IF YOU COULD GO

to each reader of this paper and
could personally draw his attention
to your own advertisement, at the
cost of a few shillings only, and with-
out wasting a minute of your time,
you would be glad of the chance.

You can do what comes to the
same thing—use an Illustration Block
in your advertisement that will com-
pel his attention. We can get up
sketches and supply blocks for
Advertisements, Booklets, and Cata-
logues, &c.

IRISH PHOTO ENGRAVING CO.
50, MID DABBAY ST. DUBLIN.

Greener Lawns, Finer Flowers, more forward Vegetables IN ONE WEEK!

After only one week you can see the effect on Lawns, Flowers and Vegetables which have been Fertilized with Nitrate of Soda—an inexpensive chemical, for sale everywhere. Ordinary Farmyard Manure requires to lie in the soil months and months before it begins to feed plants.

Nitrate of Soda

begins to be absorbed and assimilated by Plants immediately. The results are manifest in the first week. Nitrate of Soda, besides being very quick in its action, is cheap, but must be used judiciously.



Send for Pamphlet "Chemical Fertilizers in the Garden," supplied gratis and post free by

THE CHILEAN NITRATE COMMITTEE, Friars House, New Broad St., London, E.C.
AND 18 DONEGALL QUAY, BELFAST

ESTABLISHED 1832. TELEPHONE 3351 (Private Branch Exchange). TELEGRAMS—"BROOKS," DUBLIN

HORTICULTURAL GLASS, PAINTS, &c.

GLASS . . . Cut to dimensions, packed and delivered at your railway station. Also stocked in the regular box sizes.

PAINT . . . "BROMAS" for general household and estate purposes
"VALENTINE" for hay barns, &c., doubles the life of galvanized iron.

"DEAUTITE" . . . "PETREX" for conservatories, does not flake off.
Plastic Repair Compound for repairing leaky roofs and cracked glass, also for General Repair Work,

BOILERS . . . and heating plants, newest Types. Please ask for lists.

GREENHOUSES And GARDEN FRAMES.

Also TIMBER, SLATES, BRICKS, IRONMONGERY, and every Building Requisite

BROOKS THOMAS & CO.
LTD.

BUILDERS' PROVIDERS, Sackville Place, **Dublin**

<p>CASH PRIZES, CUPS, MEDALS, &c. For Competition in Classes for— FLOWERS, FRUIT AND VEGETABLES</p>	<p>WEDNESDAY, 1st AUGUST</p> <p>Kingstown Flower Show</p> <p>AND</p> <p>Allotment Holders' Display</p> <p>(NINTH ANNUAL EXHIBITION)</p> <p>AT</p> <p>PEOPLE'S PARK, KINGSTOWN</p> <p>Conducted by the Kingstown Horticultural Society</p>	<p>Special Classes for Allotment Holders for both Gardens and Produce.</p> <p>&</p> <p>Schedule of Prizes from the Hon. Sec., Technical School, Kingstown.</p>
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TERENURE AND DISTRICTS HORTICULTURAL SOCIETY

ANNUAL SHOW

WEDNESDAY, 8th AUGUST 1917

IN AID OF

The Red Cross

and

St. John Ambulance Association

VEGETABLES :: FLOWERS :: FRUIT

Open Classes. Novices' Classes. Entries close 1st August.

Schedule post free from E. CARROLL, Hon. Sec., 1 Rostrevor Terrace, Rathgar

LITTLE'S

<p style="font-size: 1.5em; font-weight: bold; text-align: center;">PESTICIDE</p> <p>For BLIGHT, "BLACK SPOT," &c., on Apple or other Fruit Trees</p> <p>1 Gal. Drums . . . 8/- each 5 & 10 Gal. Drums . . . 7/6 per gal. 40 Gal. Casks . . . 6/9 per gal.</p>	<p style="font-size: 1.5em; font-weight: bold; text-align: center;">Weed Destroyer</p> <p>KILLS ALL WEEDS, MOSSES, &c. On Carriage Drives, Gravel Paths</p> <p>More than . . .</p> <p style="text-align: center;">DOUBLE THE STRENGTH OF MOST WEED KILLERS</p> <p style="text-align: center;">1 Gallon to 60 Gallons of Water</p> <p>1 Gal. Drum . . . 4/6 (Drum Free) 40 Gal. Cask . . . 140/- (Cask Free)</p>
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ANTIPEST

Kills Red Spider, Caterpillar, &c.

Used by all the leading Gooseberry Growers

4/6 per gallon

Morris, Little & Son, Ltd., Doncaster

BY APPOINTMENT TO



HIS MAJESTY THE KING.

MACKENZIE & MOWBRAY, LTD.

HOTHOUSE BUILDERS

HEATING, VENTILATING AND ELECTRICAL ENGINEERS AND IRONFOUNDERS.

Although we are at present employed largely on National War Service, we are still in a position to carry out private work in the way of repairs and renewals. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

EDINBURGH Registered Office and Works: **22 HARLES STREET,**
and Edinburgh Foundry, **STAFFORD ROAD.**
LONDON—3 Camden Road, N.W. **GLASGOW**—121 St. Vincent St.

W. RICHARDSON & Co.

SPECIALISTS IN THE
MANUFACTURE OF ALL KINDS OF

HORTICULTURAL BUILDINGS,

ALSO

HEATING ENGINEERS



PLANS AND ESTIMATES prepared free
of cost.

LARGE CATALOGUE of photographic
Views of Horticultural Buildings free
on application.

W. RICHARDSON

REGISTERED OFFICE: Serpentina Chambers, Victoria St., S.W.)

Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held at the Society's offices, 5 Molesworth Street, Dublin, on the 8th ult., the Marquis of Headfort, President of the Society, presiding. The following members of the Council were present, viz. :— Lady Albreda Bourke, Sir Frederick W. Moore, R. T. Harris, LL.D. ; J. Wylie-Henderson, J. E. Geoghegan, M.A. ; E. D'Olier, A. V. Montgomery, J. J. McDonough, W. F. Gunn, J.P. ; George Watson, H. Bill, and Robert Anderson. Regrets were received from F. V. Westby, D.L. ; D. L. Ramsay, J.P. ; Henry P. Goodbody, and E. H. Walpole. Sir Frederick Moore reported proceedings of the Committee appointed to make arrangements for the fête, to be held in conjunction with the Society's Autumn Show, in Lord Iveagh's grounds on August 21st and 22nd, in support of the project for supplying fruit and vegetables for the Navy, and other matters were dealt with in connection with it. A collection of 25 bunches of Pyrethrums in 25 varieties were exhibited at the meeting by Messrs. Wm. Watson & Sons, Ltd., Clontarf Nurseries, for which a vote of thanks and commendation for general excellence were accorded.

Show Fixtures, 1917.

August 1st—Kingstown Horticultural Show.
Hon. Sec.—R. Macdonald, M.A., Technical Institute, Kingstown.

August 8th—Terenure and Districts Horticultural Society. Hon. Sec.—E. Carroll, 1 Rostrevor Terrace, Rathgar.

August 21st and 22nd—Royal Horticultural Society. Lord Iveagh's Grounds.

Trials of Stocks (under Glass) and Myosotis at Wisley, 1917.

THE following awards have been made to Stocks and Myosotis by the Council of the Royal Horticultural Society after trial at Wisley :—

Stocks.—Award of Merit.—No. 14, Crimson Brompton, sent by Messrs. R. Veitch, Exeter. No. 166, Mammoth Pale Lilac, sent by Mr. Dawkins, Chelsea. No. 112, Mammoth Pyramid Flesh Colour, sent by Messrs. Hurst, London. No. 133, Mammoth Rose, sent by Mr. Dawkins, Chelsea. No. 162, Nice Giant Light Blue, sent by Messrs. Nutting, London. Highly Commended.—No. 137, Abundance, sent by Messrs.

IT MUST BE "ABOL."

KILLS ALL INSECT PESTS.



No other Insecticide possesses such sterling qualities as "Abol." Each time you purchase "Abol" you can rest assured that your money has been well invested. "Abol" is the means of increasing the value of all plant life. **Non-poisonous. Get a tin to-day.** Pini, 1/6; quart, 2/6; 1/2 gallon, 4/-; gallon, 7/6; 5 galls., 27/6.

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FERTILIZES MOST



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E. A. WHITE, Ltd., 57 Beltring, PADDOCK WOOD, KENT.

SLUGS SLUGS

"SANITAS" POWDER
will rid your Garden of **Slugs** and protect your Seeds and Plants from other pests such as **Worms, Rats, Mice, Sparrows, Cats, &c.**

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (f.o.r. London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

PILLOW CASES

Walpoles' hold a limited stock of an exceptionally good quality Hemstitched Cotton Pillow Case, size 20 x 30 inches, which they offer at 1/6 each. Also some Plain ones at

10^{1D}/₂ each

and 1/1¹/₂ and 1/6

Only a limited quantity in stock—Great Bargains.

WALPOLES'
SUFFOLK STREET,
DUBLIN.

Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE DAY "NIOUAS"

(NON-POISONOUS) IMPROVED

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1 gallon sufficient for 80 gallons of water.

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Analyse on Application

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ELLIOTT'S

"SUMMER CLOUD" SHADING

Registered Trade Mark No. 14,629.

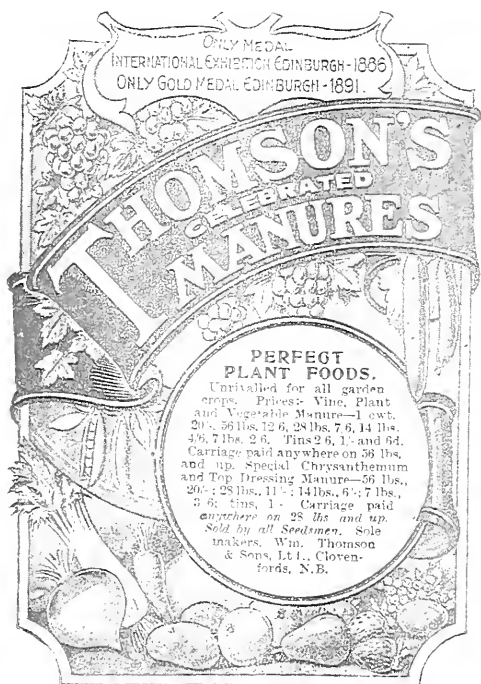
(The only genuine original and improved article)

For Greenhouses. A pleasant green shade is given to the glass. In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & Co., Ltd., LONDON

Merchants and Manufacturers of Nurserymen, Seedsmen and Florists' Sundries and Tobacco Preparations Free of Duty, for Agricultural and Horticultural Purposes.



Messrs. Daniels, Norwalk. No. 91, White of Nice, sent by Messrs. Warkias & Simpson. No. 93, White of Nice No. 2, sent by Messrs. Hurst. No. 109, Yellow of Nice, sent by Messrs. Hurst.

Awards to Myosotis. 1917. - Award of Merit.

No. 82, Alpestris Indigo Queen, sent by Messrs. R. Veitch, Exeter. Highly Commended.-- No. 83, Alpestris Indigo Queen, sent by Rev. J. Jacob, Whitechurch. No. 11, Alpestris alba, sent by Messrs. Hurst, London. No. 12, Alpestris stricta alba, sent by Messrs. Hurst. No. 63, Blue Eyes, sent by Messrs. R. Veitch. No. 62, Bouquet (blue), sent by Messrs. Sutton, Reading. No. 15, Perfection Rose, sent by Messrs. Sutton. No. 23, Pink Gem, sent by Messrs. Sutton. No. 9, Pyramid White, sent by Messrs. Carter, Raynes Park. No. 87, Royal Blue, sent by Messrs. Sutton. No. 11, Stricta White Gem, sent by Messrs. Barr, London. No. 16, Victoria Rose, sent by Messrs. Barr. No. 3, White Pearl, sent by Mr. E. H. Bowers, Roscommon.

Dublin Wholesale Markets.

The month's markets showed unmistakable signs of the return of summer. After an interval extending back to late last autumn the stalls are again becoming stocked with excellent produce and surrounded by eager purchasers. Already the effects of the food production crusade may be noted—vegetables are more abundant and flowers less so than in former seasons.

Pyrethrum were the prominent feature of the flower market, large consignments arriving and finding ready buyers. In addition, there were supplies—somewhat limited—of Roses, Spiræas, Pelargoniums, Carnations, and Lilac, all of which were rapidly disposed of.

The first of the fruit crop arrived in the market this month. Strawberries and green gooseberries have been coming in steadily. The former sold well, but the latter were not in so much demand. In consequence of the scarcity of sugar it might perhaps be as well that the berries were allowed to ripen. However, the Sugar Controller has arranged that persons who apply for it may have a certain amount, at least, of suitable sugar for

preserving. The prospects of the season's crops are said to be excellent all round.

As already mentioned, there was an abundant supply of vegetables, but chiefly of the kinds that are usually ready a month earlier. Good firm heads of Cabbage took the place of, and were selling at a slightly reduced figure than, the poorer leafy sort coming in up to the end of May. Cauliflowers were scarce and are not yet of first quality. Peas were the novelty and fetched high prices by the float. White Turnips, Carrots, Radishes, Salad and Cucumbers sold readily at good prices. A fair amount of Rhubarb was on offer and changed hands at considerably reduced prices.

The following is a price list for the month:—

FRUIT.		From	To
		s. d.	s. d.
Strawberries			
Firsts	per 2 doz. box	8 0	10 0
Seconds	" "	5 0	7 6
Thirds	" "	1 6	3 6
"	per punnet	0 8	1 6
Gooseberries	per float	10 0	13 6
"	per quart	0 5	0 6
FLOWERS.			
Pyrethrum	per bunch	0 6	1 0
Spiræa	"	0 9	0 10
Carnations	"	0 10	1 3
Pelargonium	"	0 6	0 8
Lilac	"	0 6	0 10
VEGETABLES.			
York Cabbage	per load	30 0	70 0
Cauliflowers	per flasket	1 6	7 0
Lettuce	per tray	1 0	1 6
Spinach	"	0 9	1 0
Scallions	per bunch	1 6	1 9
Asparagus	"	1 0	1 4
Rhubarb	"	0 9	1 6
Peas	per float	1 0	6 0
Radish	per bunch	0 6	0 8
Turnips (White)	"	0 8	1 0
Carrots	"	0 6	0 10

R. J. B.

Miscellaneous Section.

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

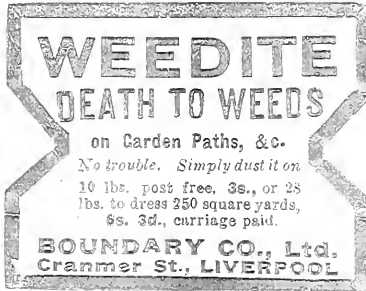
TRAINING IN

**Agriculture, Forestry, Horticulture
and Creamery Management.**

Persons who desire to attend any of the courses in the above mentioned subjects, to be provided by the Department during the year 1917-18, should apply without delay for prospectuses, &c., to the Secretary, Department of Agriculture and Technical Instruction for Ireland, Upper Merrion Street, Dublin.

SEED of choice and rare ALPINES, from a very large collection. All those who possess a ROCK GARDEN should send for my Catalogue, they will find something new and desirable. H. CORREYON, CHENE-BOURG, GENEVA.

Save weary Weeding and Backache



WEEDITE
DEATH TO WEEDS

on Garden Paths, &c.
No trouble. Simply dust it on
10 lbs. post free, 3s., or 25
lbs. to dress 250 square yards,
6s. 3d., carriage paid.

BOUNDARY CO., Ltd.
Cranmer St., LIVERPOOL

NOW IS THE TIME TO ORDER.—KELWAY & SON, *The Royal Horticulturists*, Langport, Somerset, are now booking orders for their Choice Hardy Perennial Plants to be delivered in the Autumn. Plant a *Colour Leader* this Autumn, and you will be able to enjoy its beauty for many years without any additional expense or trouble. Send the measurements of your borders, and they will recommend a selection of flowers suitable for your district and quote their REDUCED prices. Paeonies, Delphiniums, Phloxes, Gaillardias and other beautiful flowers included in their Colour Schemes, which provide blooms from early Spring to late Autumn.

Write now to the Retail Plant Department for REDUCED Price Lists.

My Hardy Plant Catalogue

IS

NOW READY . . . Post Free on Application

SPECIALITIES

PHLOX, DELPHINIUMS ::
MICHAELMAS DAISIES, ALPINES

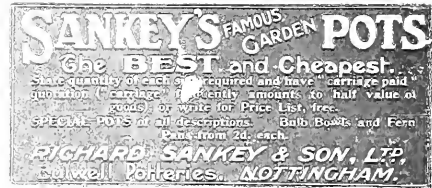
W. WELLS, Junior
Hardy Plant Nurseries
MERSTHAM—SURREY

IF YOU COULD GO

to each reader of this paper and could personally draw his attention to your own advertisement, at the cost of a few shillings only, and without wasting a minute of your time, you would be given the chance.

You can do this now comes to the same thing—use an Illustration Block in your advertisement that will compel his attention. You can get up sketches and supply blocks for Advertisements, Booklets, and Catalogues, &c.

IRISH PHOTOENGRAVING CO.
50 MID DUBLIN ST. DUBLIN

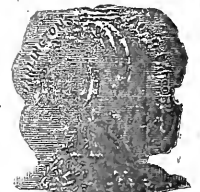


SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest.
Same quality of each as required and have carriage paid quotation (carriage & freight amounts to half value of goods) or write for Price List, free.
SPECIAL POTS of all descriptions. Bulb Baskets and Fern Pots from 2d. each.
RICHARD SANKEY & SON, LTD.
Solewholesale Potteries, NOTTINGHAM.

AUTO-SHREDS Is CERTAIN
to Lead-ning Maggots, Mealy Bug and all Pests infesting plants under glass, &c.
Simple to use, no apparatus required.
In Boxes to Fumigate 1,000 cubic feet, 6d.;
No. 4 Packet 2,500 cubic feet, 1/- each;
for tender and ordinary plants, 10,000 cubic feet, 3s. 6d. each. Obtained of Seedsmen and Florists; if unobtainable apply direct—

W. DARLINGTON & SONS,
Ltd.
Wholesale Horticultural Sundriesmen,
HACKNEY, LONDON, E. 8.

Trade Terms and Catalogue of Sundries upon receipt of business card



Laxton's New Strawberries for 1917

LAXTONIAN

The best maincrop yet raised

OPEN GROUND RUNNERS, 20s. 100; 4s. doz.
In pots, 30s. 100; 6s. doz.

The Grand New Forcing Variety—

LAXTON'S KING GEORGE V.

In Pots, 20s. 100; Open Ground, 6s. 100.

Also ADMIRAL, THE DUKE, and BOUNTIFUL

LAXTON'S THE EARL . LAXTON'S THE QUEEN
LAXTON'S MAINCROP

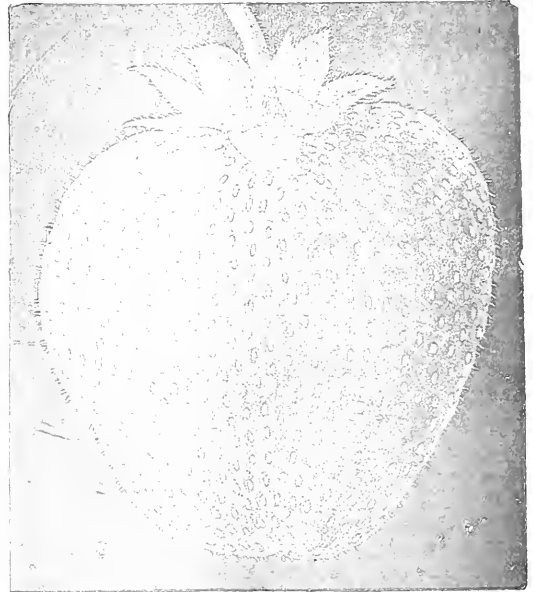
Early Potted Runners of

ROYAL SOVEREIGN

For Forcing, 20s. 100; Open Ground, 6s. 100.

The Largest Cultures in Europe. Grown specially for
Runners. Grand Plants. Millions Sold Annually.

*A Full Priced Catalogue and Cultural Hints
will be sent on application.*



LAXTONIAN

LAXTON BROTHERS, BEDFORD

ESTABLISHED 1832. TELEPHONE 3351 (Private Branch Exchange). TELEGRAMS—"BROOKS," DUBLIN

HORTICULTURAL GLASS, PAINTS, &c.

- | | |
|-----------------|---|
| GLASS | Cut to dimensions, packed and delivered at your railway station. Also stocked in the regular box sizes. |
| PAINT | "BROMAS" for general household and estate purposes |
| | "VALENTINE" for hay barns, &c., doubles the life of galvanized iron. |
| | "PETREX" for conservatories, does not flake off. |
| "DEAUTITE" . . | Plastic Repair Compound for repairing leaky roofs and cracked glass, also for General Repair Work, |
| BOILERS | and heating plants, newest Types. Please ask for lists. |
| GREENHOUSES | And GARDEN FRAMES. |

Also TIMBER, SLATES, BRICKS, IRONMONGERY, and every Building Requisite

BROOKS THOMAS & CO.

LTD.

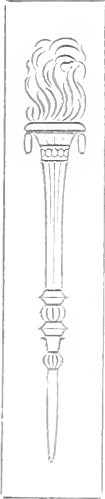
Dublin

BUILDERS' PROVIDERS, Sackville Place,

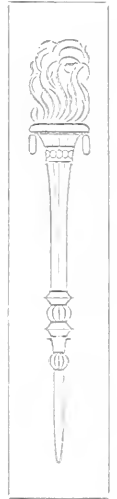
Royal Horticultural



Society of Ireland



AUTUMN SHOW & FÊTE



*In aid of the project for supplying
Fruit and Vegetables to our Sailors*

Lord Iveagh's Grounds, Dublin

(BY KIND PERMISSION)

TUESDAY & WEDNESDAY
AUGUST 21st and 22nd, 1917

ENTRIES CLOSE
AUGUST 13TH

Schedules post free from E. KNOWLDIN, Sec., 5 Molesworth Street, DUBLIN

LITTLE'S

PESTICIDE

For BLIGHT, "BLACK SPOT,"
&c., on Apple or other Fruit Trees

1 Gal. Drums £. - each
5 & 10 Gal. Drums 7/6 per gal.
40 Gal. Casks 6/6 per gal.

ANTIPEST

Kills Red Spider, Caterpillar, &c.

Used by all the leading Gonscherry Growers
4/6 per gallon

Weed Destroyer

KILLS ALL WEEDS, MOSSES, &c.
On Carriage Drives, Gravel Paths

More than . . .

DOUBLE THE STRENGTH
OF MOST WEED KILLERS
1 Gallon to 60 Gallons of Water

1 Gal. Drum 4/6 (Drum Free)
40 Gal. Cask 140/- (Cask Free)

Morris, Little & Son, Ltd., Doncaster

By APPOINTMENT TO



HIS MAJESTY THE KING.

MACKENZIE & MONGUR, LTD.

HOTHOUSE BUILDERS

HEATING, VENTILATING AND ELECTRICAL ENGINEERS AND IRONFOUNDERS.

Although we are at present employed largely on National War Service, we are still in a position to carry out private work in the way of repairs and renewals. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

EDINBURGH { Registered Office and Works **BALGARRIES STREET,**
(and Edinburgh Foundry, **SLATEFORD ROAD.**

LONDON—8 Camden Road, N.W. **GLASGOW**—121 St. Vincent St.

W. RICHARDSON & Co.

SPECIALISTS IN THE
MANUFACTURE OF ALL KINDS OF

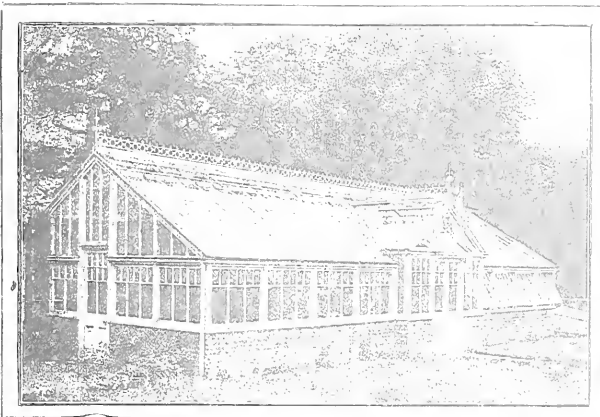
HORTICULTURAL BUILDINGS,

ALSO

HEATING ENGINEERS

PLANS AND ESTIMATES prepared free
of cost.

LARGE CATALOGUE of photographic
views of Horticultural Buildings free
on application.



DARLINGTON

(LONDON OFFICE: Belgravia Chambers, Victoria St., S.W.)

Gardeners and Foresters under the Department of Agriculture.

ATTENTION is directed to the announcement in our advertising columns relative to courses of training in Horticulture and Forestry to be held during the year 1917-18 under the Department of Agriculture.

The Horticultural School attached to the Albert Agricultural College, Glasnevin, Dublin, will be open to two classes of resident students, viz.—(1) Horticultural Instructors in Training and (2) Apprentices. No applicant will be eligible for admission to the first mentioned course who has not had from five to seven years' continuous experience of gardening. Applicants for admission as apprentices will not be required to have had any special experience of this nature.

Students admitted as Horticultural Instructors in Training will receive an allowance of 10s. per week and be provided with board and residence at the College. Apprentices will be provided with board and residence at the College and will, after some months' training, be eligible to receive in addition an allowance of 7s. per week.

The course for Horticultural Instructors in Training will provide facilities for the study of the sciences bearing on horticulture. Indoor

instruction will be supplemented by work in garden and orchard, special attention being devoted to fruits, vegetables, plant diseases and insect pests. In the case of the apprentices, outdoor instruction will be supplemented by special classes designed to enable an apprentice to understand the principles underlying horticultural practice.

Arrangements have also been made for a course of instruction for non-resident pupils, open to both male and female students. These students will be required to take part for seven or eight hours daily in all the operations carried out in the College gardens. They will, in addition, receive class-room instruction in the sciences bearing on gardening operations. No remuneration will be allowed in the case of these extern students. The instruction will be provided free.

Applicants for apprenticeships in forestry are not expected to have had any special knowledge of forestry, but preference is given to those who have had experience of work in woods.

Apprentices are allowed 11s. per week, with furnished lodging, during the period of training.

The Department also offer valuable scholarships in horticulture and forestry tenable at the Royal College of Science, Dublin. The scholarships are renewable for a total course of four years and enable the holders to obtain, free of cost, the most advanced technical and scientific training.

WEBBS'

The Best Cabbage for August Sowing

Vegetable Seeds FOR AUGUST SOWING

- WEBBS' Emperor Cabbage 6d. and 1 - per pkt. ; 1 6 per oz.
- WEBBS' Favourite Cabbage 6d. and 1 - per pk. ; 1 6 per oz.
- WEBBS' Red Globe Tripoli Onion.
- WEBBS' Monster White Tripoli Onion.
- WEBBS' Mammoth Red Tripoli Onion, each 1 - per packet.
- WEBBS' Winter White Cos Lettuce.
- WEBBS' Hardy Green Cabbage Lettuce, each 6d. and 1 - per pkt.
- WEBBS' Prizetaker Turnip 6d. pkt.
- WEBBS' Early Frame Radish 6d. pkt.

Post Free.



WEBB & SONS
THE KING'S SEEDSMEN LTD
Wordsley, STOURBRIDGE

WEBBS' EMPEROR ("Britain's Great Cabbage")

6d. and 1s. per packet ; 1s. 6d. per ounce. Post Free

The earliest and best cabbage in cultivation. Remarkably free from any tendency to bolt

Review.

Farming by Motor.*

THIS is one of a series of books issued by the Temple Press and designed to urge the necessity of greatly increasing our area of cultivated land with the object of producing far more of our necessary foodstuffs within our own shores. No matter what the future may hold in store—and no one knows—there is little doubt that never again shall we allow ourselves to be menaced with a food shortage. Labour has in the past been a limiting factor, but by the greater use of machinery this obstacle will be overcome. With more highly trained men on the land—technically and scientifically—there will result a greater production. Motor power has come to stay, and the book under notice is a worthy attempt to show what has already been accomplished in the use of farm machinery worked by motor. Many types of motors are illustrated and described, and their adaptations to ploughing, harrowing, rolling and sowing clearly shown, while their use at harvest time is not omitted. No doubt motor power will be most serviceable on large level farms, and it is conceivable that the cost of working will be most economical on such.

In any case this is a matter which can no longer be ignored by anyone engaged in farming, and we heartily commend the booklet to all our readers who are in anyway interested in farm management and maximum production.

The Shipping Shortage.

CANADIAN APPLE GROWERS WANT AN EMBARGO ON IMPORTS.

A DELEGATION representing apple growers visited Victoria and asked the Government to support their appeal to the federal authorities at Ottawa for an embargo against imported apples, to be put in force so long as the British embargo due to shipping difficulties continues. British Columbia growers are expecting a large apple crop this year, and with a restricted market in sight will have to meet greater competition than formerly, unless the embargo requested is declared. The Premier informed the delegation that the Government would go into the question and do what it could for their relief. The party is now on its way East, holding conferences *en route* with representatives of farmers' institutes on the prairies, and will confer with Ontario and maritime province men in Eastern Canada, after which a united delegation will visit Ottawa and place their request before the Government.—*Canadian News Items*, July, 1917.

Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held at 5 Molesworth Street, Dublin, on the 13th ult., Mr. A. V. Montgomery presiding. Application was received from the Kingstown Horticultural Society for affiliation, which was granted; judges were nominated for the Autumn Show to be held in Lord Iveagh's grounds on the 21st and 22nd insts., and other preliminary arrangements made

* The Temple Press, Ltd., 7-15 Rosebery Avenue, London, E.C.1. Price 1/6 net.

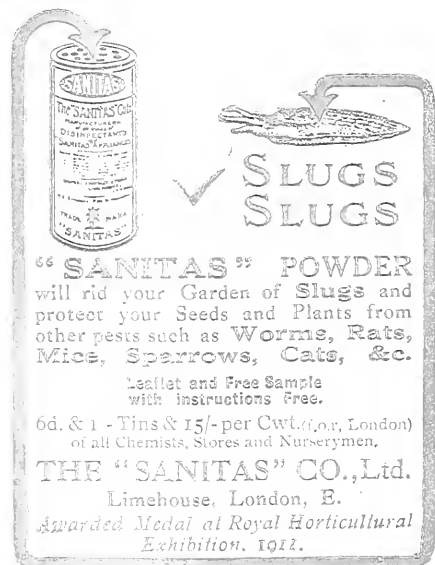
in connection with it. It was decided that personal tickets of admission to the show, bearing a stamp covering the Amusements Tax, should be issued to annual members, with the six transferable tickets as heretofore marked "complimentary." Members who have not yet paid their subscriptions for the current year are requested to do so, so as to avoid delay in the issue of these tickets covering the tax. "The Adjutant," a beautiful seedling Delphinium with solid massive spikes of sky-blue flowers flushed with royal purple, sent by Mrs. D. O'Connell Miley, Almsbury Road, was granted the Society's Award of Merit.

Trials of Oriental Poppies and Tall Bearded Irises at Wisley, 1917.

THE following awards have been made to Oriental Poppies and Tall Bearded Irises by the Council of the Royal Horticultural Society after trial at Wisley.

Oriental Poppies.—Highly Commended.—No. 66, Beauty of Livermere, sent by Messrs. Wallace. No. 17, Bobs, sent and raised by Mr. Notcutt, Woodbridge. No. 67, Boadicea, sent and raised by Messrs. Barr, Taplow. No. 35, Cerise Beauty, sent and raised by Messrs. Barr. No. 3, Elsie G. Harkness, sent and raised by Messrs. Harkness. No. 20, Felix, sent and raised by Mr. Notcutt. No. 59, Hesperia, sent by Messrs. Bunyard. No. 32, Mrs. J. Harkness, sent by Messrs. Harkness. No. 26, Mrs. Perry, sent by Messrs. Barr, raised by Mr. Perry. No. 48, Orange Globe, sent and raised by Messrs. R. Veitch. No. 30, Rose Queen, sent by Messrs. Wallace. No. 52, Royal Scarlet, sent and raised by Messrs. Barr. No. 56, Taplow Scarlet, sent and raised by Messrs. Barr. No. 33, V. L. Harkness, sent and raised by Messrs. Harkness. Commended.—No. 44, Silverblick, sent by Mr. Notcutt.

Tall Bearded Irises.—Award of Merit.—No. 841, Dominion, sent and raised by Mr. A. J. Bliss, of Tavistock. Nos. 58, 138, 139, 144, 635.



SANITAS
 THE "SANITAS" CO., LTD.
 LIMEHOUSE, LONDON, E.

✓ SLUGS SLUGS

"SANITAS" POWDER will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions free.

6d. & 1/- Tins & 15/- per Cwt. (at or, London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
 Limehouse, London, E.
 Awarded Medal at Royal Horticultural Exhibition, 1912.

"ACME" WEED MILLER

For Destroying Weeds, Moss, &c., on Carriage Drives, Garden Walks, &c.

Awarded Gold Medal by Anglo-American Exhibition; Commended by Royal Horticultural Society.

POWDER WEED KILLER

Dissolves quickly in Cold Water.

SIZE OF TINS:

No. 1.	Sufficient to make 12½ gallons.	1/4.	1/5 and 5/6.
No. 2.	" " " 25 "	2/3.	" 6/1.
No. 3.	" " " 50 "	4/2.	" 7/1.
No. 3.	" " " 100 "	8/-. Post free.	

LIQUID WEED KILLERS

One gallon to be mixed with 25 gallons of water.

PRICES.—1 gallon, 2/6 (in 1/-); 5 gallons, 10/- (draw 5/6); 10 gallons, 19/2; 20 gallons, 36/8; 40 gallons, 71/8.

Carriage paid on 5 gallons. Drums or Casks of 10 gallons and over charged 8/- each, allowed when re-uried. Strength, 2 in 50. Prices on application.

SOLUBLE PARAFFIN.—Mixes instantly with water and does not separate. 1 lb., 2/-; 1 oz. sufficient for 1 gallon water.

ARSENATE OF LEAD PASTER for destroying all leaf-eating insects. 1 lb., 1/3. Postage 5/6. 1 lb. sufficient for 25 gallons water.

"FUMERITE" for destroying all ground vermin, slugs, &c. (To be dug into the soil.) 7 lbs., 2/6; 50 lbs., 12/6, carriage paid.

EXTRACT OF QUASSIA INSECTICIDE.—Pint, 1/-; 1 gallon, 3/-.

COMPOUND EXTRACT OF QUASSIA-TOBACCO INSECTICIDE.—Pint, 1/6, postage 5/6; quart, 2/6, post paid; gallon, 5/6, drum 1/6, carriage paid.

SUMMER SHADING, LAWN SAND, &c., &c. Prices and particulars on application.

THE ACME CHEMICAL CO., LTD.

TONBRIDGE, KENT, and RIVER ST., BOLTON, LANCASHIRE

Sold by Messrs. HAYES, GANNON & ROBINSON, Ltd., Great St. 1st, 100, Messrs. THOMSON & SONS, 37 and 38, DUNDEE ST., DUBLIN.

Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE DAY "NIOUAS"

(NON-POISONOUS) IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use. It can be applied with syringe or pump, or used for dipping.

PRICES.—Half-pint, 1/-; pint, 1/6; quart, 2/3; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 45/-; 1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers. Analyze on Application.

Sold in Tins, 6d., 1/-, 2/6, 3/6 each; and in Kegs, well secured, to prevent loss through exposure, 2d lbs., 8/6; 56 lbs., 13/6; 112 lbs., 22/6

CORRY'S

"OPTIMUS" WORM POWDER

(NON-POISONOUS)

For the complete destruction of Worms on Lawns, Bowling Greens, Putting Greens, and Golf Links.

NOT INJURIOUS TO ANIMALS OR BIRDS.

Prices—

Lbs.	7	14	28	56	112	5 cwt.	10 cwt.	1 ton
Each	1/3	2/6	5/6	7/6	12/6	for 57/6	110/6	210/6

For Fumigating in Greenhouses,

"LETHORION"

IMPROVED METAL CONES

Registered No. 62,587

To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 6d. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 3d. each.

No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

FOWLER'S LAWN SAND

This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, 1/2 cwt., 8/6; 1 cwt., 16/-; 1 cwt., 30/-

ELLIOTT'S

"SUMMER CLOUD" SHADING

Registered Trade Mark No. 14,629.

(The only genuine original and improved article)

For Greenhouses. A pleasant green shade is given to the glass. In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

Sole Manufacturers:

CORRY & Co., Ltd., LONDON

Merchants and Manufacturers of Nurserymen, Seedsmen and Florists' Sundries and Tobacco Preparations Free of Duty, for Agricultural and Horticultural Purposes.

ONLY MEDAL INTERNATIONAL EXHIBITION EDINBURGH-1886 ONLY GOLD MEDAL EDINBURGH-1891.

THOMSON'S FERTILIZERS

REGISTERED TRADE MARK

PERFECT PLANT FOODS.

Formulated for all garden uses. Prices: Vine, Plant and Vegetable Manure—1 cwt., 2/6; 20 lbs., 12/6; 28 lbs., 7/6; 14 lbs., 4/6; 7 lbs., 2/6. Tins 2/6, 1/- and 6d. Carriage paid anywhere on 56 lbs. and 28 lbs. Special Chrysanthemum and Top Dressing Manure—56 lbs., 2/6; 28 lbs., 1/6; 14 lbs., 6/6; 7 lbs., 3/6. Tins, 1/- Carriage paid anywhere on 28 lbs. and up. Sold by all Seedsmen. Sole makers, Wm. Thomson & Sons, Ltd., Clontarf, N.B.

pallida, Dalmatica, from Messrs. Forbes, R. Veitch, and Wisley, Nos. 276, 778, *pallida* Princess Beatrice, from Messrs. Barr & Bunyard, No. 686, *pallida* Rev. W. Wilks, sent by Messrs. Bunyard, (No. 686 is identical with Nos. 276 and 778.) Highly Commended.—No. 582, *Le Reve*, sent by Mr. Perry, Enfield; Mary, from Mr. G. Reuthe, Keston, Commended.—Nos. 123, 536, *Calypto*, sent by Messrs. Barr and Mr. Perry, No. 810, *Dawn*, sent by Messrs. Wallace, Colchester, Nos. 527, 628, *Innocenza*, sent by Mr. Perry and Messrs. Forbes, No. 837, *Rosalind*, sent by Mr. Bliss, of Tavistock.

Trials of Broad Beans and Annual Poppies at Wisley.

The following awards have been made to Broad Beans and Annual Poppies by the Council of the Horticultural Society after trial at Wisley, and one variety of Mid-season Pea which received an Award of Merit last year has now received a First-class Certificate after further trial.

Broad Beans.—Award of Merit, No. 5, *Broad Windsor*, from Messrs. Dobbie & Co., No. 26, *Exhibition Longpod*, from Messrs. Dobbie & Co., No. 43, *Green Giant*, sent by Messrs. Sutton & Sons, Highly Commended.—No. 22, *Erdington Gem*, sent by Messrs. Holder & Tilt, Birmingham, No. 1, *Giant Windsor*, sent by Messrs. Sutton & Sons, No. 41, *Green Leviathan*, sent by Messrs. Carter & Co., No. 10, *Green Windsor*, sent by Messrs. Sutton & Sons, No. 2, *Mammoth Windsor*, sent by Messrs. Carter & Co., No. 25, *Prizetaker Exhibition Longpod*, sent by Messrs. Bunyard, No. 33, *Prolific Longpod*, sent by Messrs. Sutton & Sons, Commended.—No. 39, *Invicta*, sent by Messrs. Nutting, No. 8, *Market Garden Windsor*, sent by Messrs. Carter & Co.

Mid-season Pea.—First-class Certificate.—*To Pea Clipper*, sent by Messrs. Sydenham (A.M.), 1916.

Annual Poppies.—Award of Merit.—No. 21, *Dwarf Scarlet Fringed*, sent by Messrs. R. Veitch, No. 20, *Scarlet King*, sent by Messrs. Barr, Highly Commended.—No. 24, *Cardinal Blush*, sent by Messrs. Dobbie, No. 25, *Cardinal Scarlet*, sent by Messrs. Dobbie, No. 5, *Dainty Lady*, sent by Messrs. Barr, No. 7, *Danebrog*, sent by Messrs. Barr, No. 52, *Peacock Poppy* (P. pavoninum), sent by Messrs. Barr, No. 33, *Strain of Dwarf Double Paony-flowered mixed*, sent by Messrs. Barr, Nos. 37 and 38, *Strain of New Double Queen*, sent by Messrs. Barr and Messrs. R. Veitch, Nos. 50 and 51, *umbrosum*, sent by Messrs. Dobbie and Barr, No. 4, *The Admiral*, sent by Messrs. Barr, No. 14, *White Colossal*, sent by Messrs. Barr, No. 15, *White Swan* (syn. *Snowdrift*), sent by Messrs. Barr, Commended.—No. 43, *Picotee*, sent by Messrs. Barr.

Show Fixtures, 1917.

August 1st—Kingstown Horticultural Show, Hon. Sec.—R. Macdonald, M.A., Technical Institute, Kingstown.

August 8th—Terenure and Districts Horticultural Society, Hon. Sec. E. Carroll, 1 Rosinevor Terrace, Rathgar.

August 21st and 22nd—Royal Horticultural Society, Lord Iveagh's Grounds.

Dublin Wholesale Markets.

During the month there were to be seen large supplies of fruit, flowers and vegetables. The weather conditions were favourable for the ripening of the several kinds of fruit, especially Strawberries. Of these splendid samples were to be seen in the market in punnets; packed in crates containing twenty-four per crate (a punnet holding one pound approximately). This mode of packing prevents the squashing of the fruit in transit. Other consignments arrived in trays of several pounds each and also in four pound baskets. Gooseberries were sent in the green state, until the middle of the month, when some choice lots of ambers in a ripe condition were noticed; also Black and Red Currants of good quality. There were Cherries on show, also Peaches, the latter were not in good demand.

In the flower section the supply of Roses, Carnations, Sweet William (red and pink), Sweet Pea and Cornflowers were abundant. There was a brisk demand and good prices.

In the vegetable department York Cabbages of fair quality continue to hold prices above the average. Cauliflower, Lettuce and Spinach were equally well supplied and readily disposed of. Peas, Beans, White and Yellow Turnips, Radishes, Carrots and Cucumbers sold well. Small quantities of Rhubarb were seen, but it is displaced by the season's fruit.

The following is a price list for the month:—

		From	To
	FRUIT.	s. d.	s. d.
Strawberries	per 24 punnets	6 6	9 6
"	per lb.	0 6	1 6
Raspberries	"	0 1	0 6
Black Currants	"	0 1	0 6
Red Currants	"	0 3½	0 5
Gooseberries	per float	4 6	5 0
	(Ambers)		
"	per 12-lb. basket	4 6	5 0
	FLOWERS.		
Asters	per doz. bunches	0 6	0 8
Cornflowers	"	0 4	0 6
Sweet Pea	"	1 3	1 6
Carnations	"	4 0	4 6
	(Mahmaison)		
Roses	"	2 0	2 6
Sweet William	"	0 4	0 6
	VEGETABLES.		
Cabbage (York)	per load	11 0	60 0
Cauliflower	per dozen	2 0	2 6
Salad	per tray	0 6	1 0
Peas	per float	2 0	3 6
Beans (Broad)	"	0 9	1 4
Kidney Beans	per tray	0 8	1 0
Onions	per doz. bunches	0 6	0 8
Scallions	"	0 6	0 7
Parsley	per tray	0 5	0 6
Parsnips	per bunch	0 10	1 0
Carrots	"	0 1	1 8
Cucumbers	per dozen	2 4	3 0

R. J. B.

Miscellaneous Section

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND

TRAINING IN Agriculture, Forestry, Horticulture and Creamery Management

Persons who desire to attend any of the courses the above mentioned subjects, as by an order of the Department during the year 1917-18, should apply without delay for prospectuses, &c., to the Secretary, Department of Agriculture and Technical Instruction for Ireland, Upper Mount Street, Dublin.

NOTICE TO THE PUBLIC
The following is a list of the names of the persons who have been appointed to the various positions in the Department of Agriculture and Technical Instruction for Ireland, Upper Mount Street, Dublin.

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DEATH TO WEEDS
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The Grand New Forcing Variety—

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Also ADMIRAL, THE DUKE, and BOUNTIFUL

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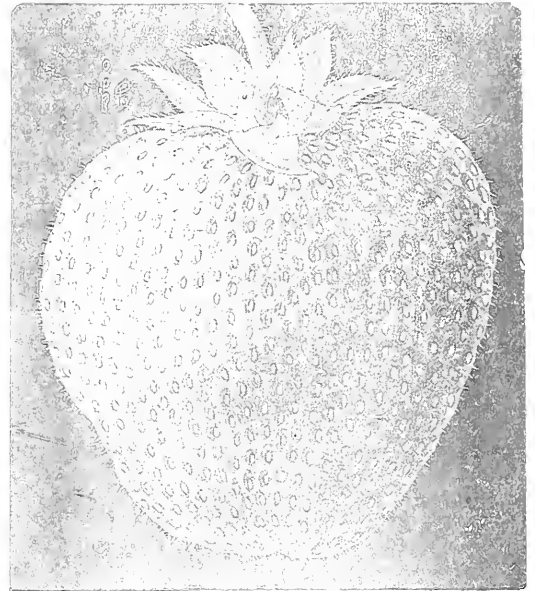
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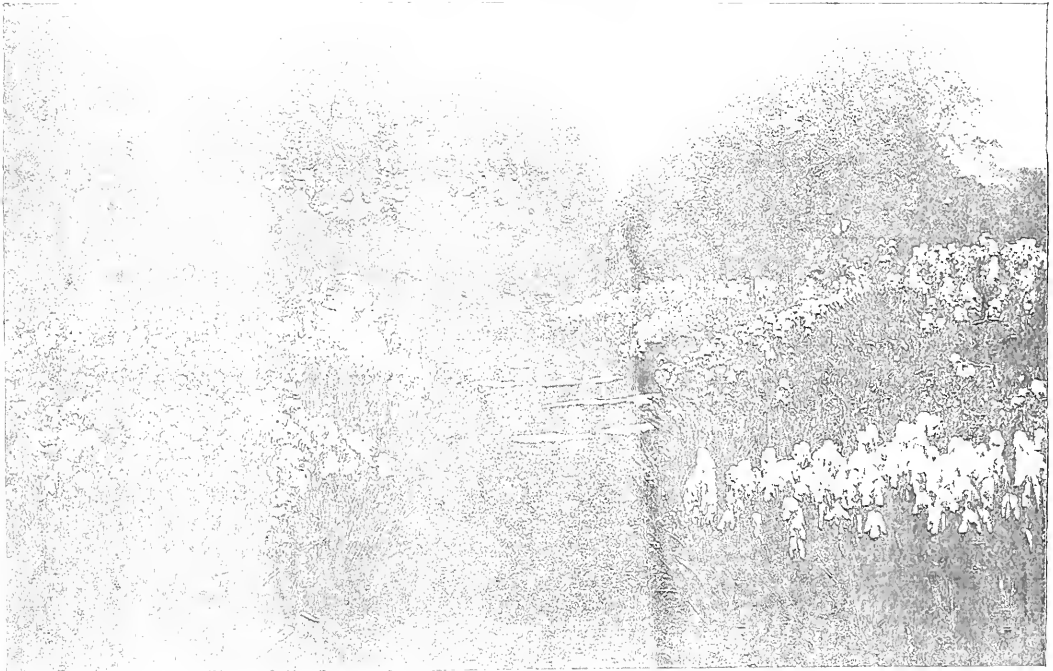
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"Man has availed himself of the great laws of evolution in mightier matters than the Iris; but in no theatre of his unsleeping efforts has he created purer beauty or wakened for flower-lovers a truer joy than among the bearded Irises of June."—EDEN PHILLPOTTS in *Country Life*, June 24th, 1917.

NOW is the time to plant the **BEARDED IRISES**

OUR NEW IRIS LIST is much more than a mere catalogue. It introduces a new system of Classification. The Irises are arranged according to Colour Groups and Time of Flowering. It is well illustrated and has a complete list of the best and newest types, and offers for the first time a list of Irises raised by Wallace's Nursery, including **EDENPHICHA**, the finest Iris yet raised.



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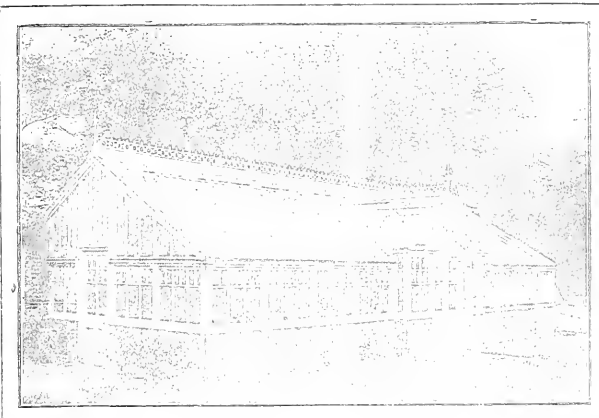
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DYRLINGTON

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Royal Horticultural Society of Ireland.

Tullamore Show.

FLOWER SHOW AND FETE FOR THE SUPPLY OF
FRUIT AND VEGETABLES TO THE FLEET.

ALL will agree that under present circumstances the display of fruit, flowers and vegetables, though lacking somewhat in the number of entries, was well up to the usual high standard of quality. This was particularly noticeable in the vegetable classes, where the produce generally was of the highest excellence. Fruit, considering the season, was good, while the display of hardy cut flowers was of the best, and notable for the number of choice varieties exhibited. The weather was on the whole favourable, and the music discoursed by the bands of the Royal Irish Fusiliers and Royal Irish Constabulary added greatly to the pleasure of the gathering. On the second day His Excellency the Lord Lieutenant and Lady Wimborne made a tour of inspection, accompanied by the Marquis of Headfort, Sir Frederick Moore and Mr. Knowlton, Secretary. Tasteful exhibits were put up by Messrs. Watson, (Tontarf, who showed beautiful Roses and many fine herbaceous plants, Mr. Coey, Donard Nurseries, showed rare and beautiful trees and shrubs: Messrs. Drummond, herbaceous plants: Messrs. Jones, Kilkenny, lovely Gladioli, and Mr. Mills, Tereure, Roses, fruits, &c. Special mention should be made of the competitive exhibits from allotment gardens, which showed considerable skill, and which we hope will become a permanent feature of future shows.

We believe this was the first flower show held in conjunction with the King's County Farming and Industrial Society. The Horticultural Instructor, Mr. Clarke, and Mr. W. Roberts are to be congratulated on its success.

The town was full of people brought together by both the agricultural and horticultural aspects of the show, and in the hotel the previous very wet evening one heard lengthy discussions on the Corn Production Bill and the price of crops and beasts. The weather cleared up on the morning of the show; a fine warm day brought a large concourse of visitors, and the crowds of people among the throbbing farm tractors and other agricultural implements exhibited in the show grounds created a lively scene.

One large marquee was devoted to the flower show and a small separate charge of admission made. A native who approached the entrance to inquire what was within turned away remarking, humourously, that bacon and cabbage was more in his line, so there is work for horticulturists in King's County, and nothing is more certain than that exhibitions held annually, and as well managed as this year's show, will stimulate the pursuit of gardening throughout the county.

Mr. W. Roberts, Charleville Gardens, staged a fine collection of fruit in all seasonal varieties, his grapes in the well-finished style familiar to his fellow competitors in Dublin Show. The amateurs' entries were small but encouraging.

LITTLE'S

PESTICIDE

For BLIGHT, "BLACK SPOT,"
&c., on Apple or other Fruit Trees

1 Gal. Drums 8/- each
5 & 10 Gal. Drums 7/6 per gal.
40 Gal. Casks 6/6 per gal.

ANTIPEST

Kills Red Spider, Caterpillar, &c.

Used by all the leading Gooseberry Growers
4/6 per gallon

Weed Destroyer

KILLS ALL WEEDS, MOSSES, &c.
On Carriage Drives, Gravel Paths

More than . . .

DOUBLE THE STRENGTH
OF MOST WEED KILLERS

1 Gallon to 60 Gallons of Water

1 Gal. Drum 4/6 (Drum Free)
40 Gal. Cask 140/- (Cask Free)

Morris, Little & Son, Ltd., Doncaster

and the trade exhibits formed the major part of the show. In Class 1, for the best collection of Roses arranged for effect in a space of 32 square feet, Messrs. Watson & Sons, Clonfarl and Killiney Nurseries, won first prize, and Messrs. Alex. Dickson & Sons, Ltd., second prize. Notable in Messrs. Watson's group were tall stands of Red Letter Day and General McArthur, backed with taller pillars of Wichuraianas. Mme. Edouard Herriott (not to use its incorrect and less pleasing cognomen, "Daily Mail Rose") was fine, also J. L. Moek; and a border of Rod-hatte round the base of the group was striking. The last is one of the best dwarf Polyantha Roses for bedding, and possesses handsome foliage as well as a continuous profusion of flowers. Messrs. Watson were again first, and Messrs. Alex. Dickson & Sons second in Class 2, for the best collection of herbaceous flowers. The Phloxes were in good form in the first prize group.

First prize for collection of vegetables fell to Messrs. Alex. Dickson & Sons, Ltd., who also staged an interesting series of seed trials in pans, these examples showing the excellent germination of Hawlmark seeds. Other non-competitive exhibits included a large collection of cut specimens of flowering shrubs, roses and herbaceous flowers from Messrs. Pennick, of Delgany. Their Wichuraiana Roses were remarkably fresh and bright in colour. Messrs. Ramsay & Son, Ballsbridge, staged a group of plants suitable for room decoration, and Messrs. Jones, seedsmen, Kilkenny, put up a selection of their choice varieties of Gladioli.

Terenure and Districts' Show.

THIS society held its annual show on Wednesday, 8th August. This year's show was announced to be principally a show of food products without excluding flowers altogether. Exhibitors rose to the occasion, and the show of vegetables and hardy fruit made a display for number of entries and quality of exhibits long to be remembered. In the flower section the Sweet Peas were wonderfully good, and the hardy cut flowers and rambler Roses made a good display.

The show was opened informally at 1 o'clock. At 6 o'clock, when the general attendance was about its best, Sir T. W. Russell, M.P., gave an address, the significance of which cannot be underrated as dealing with food production principally by allotments. Replying to a vote of thanks, Sir T. W. Russell was drawn into the question of control of cattle prices, which was an important digression, though outside the scope of the show. These speeches were duly reported in the daily papers of Thursday, 9th August, and will well repay perusal.

The Sweet Pea Cup was won by Viscount Powerscourt, K.P., with an outstanding collection. Miss Field, of Shanganagh Park, was second, and Mrs. J. W. Cleve, of Salisbury House, Marlfield, Clonmel, third.

Roses generally, except ramblers, were poor. The Rose Cup was won by Viscount Powerscourt, K.P.

The Challenge Cup for hardy cut flowers was

retained by W. Seymour Bird, Esq., K.C., this being his second time of winning.

The Challenge Cup for a Collection of Six Vegetables also remains with the winner at the last show—Col. R. Claude Cane.

An exhibit of Border Carnations, grown from home-saved seed, was put up by E. Kelly, Esq., of Kingstown. The competitive exhibit won easily in its class, and this, together with a non-competitive exhibit of Carnations, was recommended by the judges for a silver medal.

The Irish School of Gardening for Women, at Meance, Terenure, put up an excellent professional exhibit of vegetables and flowers. Another attractive exhibit of a similar character was that of St. Gatten's School of Market Gardening. Each of these stands was recommended a silver medal.

The only trade exhibit was that of E. Mills, Rose Villa Nurseries. It was excellent in every way. The only real good Roses, outside the ramblers, put up at the show were on this stand, and they were good. Violas also were shown in good form; also an exhibition Tomato grown in pot wonderfully covered with fruit. The judges directed special mention of the Roses and Tomatoes, and recommended a silver medal.

This show was held under the auspices of the Joint V.A.D. Committee for Ireland, to the aid of which the net proceeds are to be presented. The show concluded with an auction of produce kindly presented by exhibitors, and bidding was extremely spirited.

This was a really good show, and the promoters are to be congratulated on its success. The Rathmines U.D.C. presented prizes for their allotment holders, but the competition for these prizes was disappointing. Beginners are notably diffident. Probably this year's experience will give them confidence, and lead to stronger competition another year.



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FOR IMMEDIATE PLANTING.

COLCHICUMS:	per doz.	per 100	per 1,000
	s. d.	s. d.	s. d.
Autumnale album	3 0	20 0	
" " " "	10 6		
" " " "	3 6	20 0	
" " " "	3 0	17 6	
" " " "	1 6	10 0	
" " " "	2 6	15 0	
" " " "	2 6	15 0	
" " " "	2 6	15 0	
" " " "	10 6	70 0	
" " " "	15 0		
" " " "	3 6	20 0	

CROCUS SPECIES.

Autumn flowering—			
Asturion	3 6		
Cypri	1 6	7 6	
" "	2 0	10 0	
" "	1 6	7 6	
" "	1 6	6 0	
" "	1 6	8 0	
" "	—	7 6	10 0 - 65 - 85
" "	1 0	7 0	
" "	—	6 2	7 - 5 5 - 1 1
" "	—	—	—
Winter flowering—			
Andromeda	2 0	12 6	
" "	2 0	—	
" "	1 6	10 0	
" "	3 0	20 0	
" "	—	6 0	
" "	5 0	40 0	
" "	3 0	20 0	
Spring flowering—			
Arcus	24 0	—	
Aureus	1 6	7 6	
Bambus	3 0	—	
" "	2 0	10 6	
" "	3 0	—	
" "	3 0	17 6	
" "	—	1 4	7 6
" "	2 6	15 0	
" "	1 6	6 0	

Complete Collection, with descriptions, will be found in Bulb List, which will be posted on application.

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A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use. It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 45/-; 1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)
Exceeds all others in General Fertilising Properties and Staying Powers
Analyse on Application
Sold in Tins, 6d., 1/-, 2/5, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 28 lbs., 8/6; 56 lbs., 13/6; 112 lbs., 22/6

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(NON-POISONOUS)

For the complete destruction of Worms on Lawns, Bowling Greens, Putting Greens, and Golf Links.
NOT INJURIOUS TO ANIMALS OR BIRDS.

Prices—
Lbs. 7 14 28 56 112 5 cwt. 10 cwt. 1 ton
Each 1/9 3/- 5/- 7/6 12/- for 57/5 110/- 210/-

For Fumigating in Greenhouses.

"LETHORION" IMPROVED METAL CONES

Registered No. 62,597
To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.
No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 6d. each.
No. 2. For small greenhouses up to 1,500 cubic feet. Price, 8d. each.
No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

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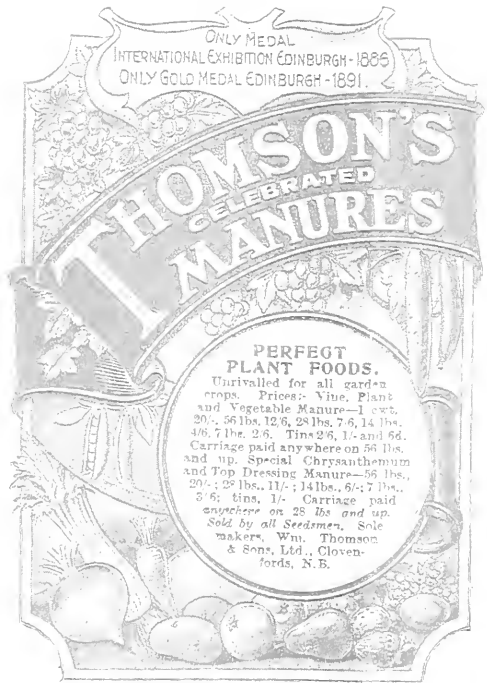
This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.
Tins, 1/6, 2/6, and 5/- each; Kegs, 1/2 cwt., 8/6; 1 cwt., 18/-; 2 cwt., 30/-

ELLIOTT'S "SUMMER CLOUD" SHADING

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Correspondence.

NOTES FROM A COUNTY DOWNS GARDEN.

YOUR article on Allotment Gardens after the war seems to be a very timely one, as surely the end is nearly in sight.

In the town near which I live over 100 allotments were taken up last year, and those, it is generally understood, have done immense good in the neighbourhood in many ways. They have brought all classes together in friendly rivalry; politics, religion, differences, and social distinctions have been sunk, and all have assisted each other in their wooing of Mother Nature.

I do not think building operations will interfere for several years, and then only by gradual stages; and I do think the allotment garden has come to stay, as it is a great means of grace and its reward is certain.

In games a man may sow but sometimes will not reap, as when a long practised cricketer goes out for a "duck," and golf requires a decade, if then, to be in the first rank. It is not so with the Allotment, "a man reaps as he sows." Dig deeply, manure heavily, topdress frequently, are not bad "saws."

I was well pleased with your fruit chart, it shows up the prospects at a look. I would like to assist next year.

Is *Atropa Belladonna* an English wildflower? I cannot see it in John's Flowers of the Field [Yes, but not very common.—Ed.] I think it will do best in sun like other plants if it has a deep root-run. Has Mrs. Bland read "The Harvester," by Gene Stratton Porter? It would interest her. I do not think Cabbages in Rose beds are a success, but Leeks might do; I am trying them.

WALTER SMYTH.

Holywood, Co. Down.

Irises and Iris Gardens.

UNDER this title Messrs. R. Wallace & Co., of Colchester, have issued a delightful booklet dealing with the several beautiful sections of Iris which do so much to beautify our gardens in early summer. The booklet is more than a mere catalogue; it is produced in high-class style and is a valuable work of reference. The classification of the various sections has been designed so as to enable Iris lovers to choose exactly what they want and place their Irises just right as regards time of flowering, colour and height. This is a distinct convenience and renders the book a true garden companion. The illustrations are many and beautiful, and give an excellent idea of many of the newest and best varieties, as well as of the effect produced by groups and masses. The descriptions are very well done and will be a distinct help in making a selection and in arranging to the best advantage. The present is considered a good time to plant Irises, and in our advertisement columns will be found further particulars of Messrs. Wallace's collections. We strongly advise lovers of Irises to secure a copy of "Irises and Iris Gardens" without delay.

Dublin Wholesale Markets.

At this season of the year it is always expected that large supplies of fruit, flowers and vegetables would be sent into the market, and during August this expectation was

fully realised. The dry weather last month had a detrimental effect upon Strawberries, Raspberries, Gooseberries, Currants (black, red and white) were sent in in large quantities, but the supply became exhausted rather early in the month. Apples of very good quality and free from disease were a prominent feature of the market, Beauty of Bath, Irish Peach and Mr. Gladstone were much sought after and fetched good prices. Grapes, Pears, Plums, Peaches, Apricots and Nectarines were abundantly supplied and the prices realised held firm above the average. Indeed it is a matter for surprise that such good prices obtain having regard to the scarcity of sugar, which one would think would seriously affect the demand. In consequence of the shipping difficulty in the way of foreign imports, home-grown Tomatoes, which have been extensively cultivated this season, were disposed of to great advantage.

There were fairly large lots of flowers, which arrived in a fresh condition, and were easily disposed of—Asters, Carnations, Gladiolus, Gypsophyllia and Sweet Pea. As regards the latter, the continued showery weather during the end of the month adversely affected this much prized flower, large supplies of vegetables were in evidence. York Cabbage sold at the average price, but for extra quality prices ranged very high. Turnips were more or less a glut on the market, and the same might be said of Mushrooms, Cauliflowers, Brussels Sprouts, Onions, Lettuce, Thyme and Cucumbers, all of good quality, brought good average prices.

The following is the price list for the month:—

	FRUIT.	From s. d.	To s. d.
Apples	per barrel	15 0	20 0
"	per float	2 0	6 6
Pears	"	5 0	7 0
Apricots	per tray	7 6	8 0
Peaches	per dozen	3 0	5 0
"	extras	12 0	—
Nectarines	"	3 0	4 6
Grapes	per lb.	1 8	3 0
Tomatoes	"	0 8	1 4
Gooseberries	per stone	5 0	7 6
Black Currants	per lb.	0 3½	0 10
Raspberries	"	0 7	0 9
FLOWERS.			
Asters	per bunch	0 3	0 5
Carnations	"	0 8	0 10
Gladiolus	"	0 6	0 7
Gypsophyllia	"	0 6	0 9
Sweet Pea	"	0 8	0 10
VEGETABLES.			
Cabbage (York)	per load	14 0	20 0
"	extra	30 0	40 0
Brussels Sprout	per float	3 0	3 3
Lettuce	per dozen	1 0	—
Turnips	per bunch	0 3	—
Onions	"	0 10	1 0
Cucumbers	per dozen	3 0	4 0
Carrots	per bunch	0 6	0 8
Parsley	per tray	0 4	0 5
Thyme	"	0 6	0 7

R. J. B.

LAXTON'S FRUIT TREES

MANY NEW FRUITS FOR 1917.

MANY THOUSANDS of Well Trained, Beautifully Rooted APPLES, PEARS, PLUMS, PEACHES, NECTARINES, APRICOTS, CHERRIES, FIGS, VINES, NUTS, GOOSEBERRIES, CURRANTS, RASPBERRIES.

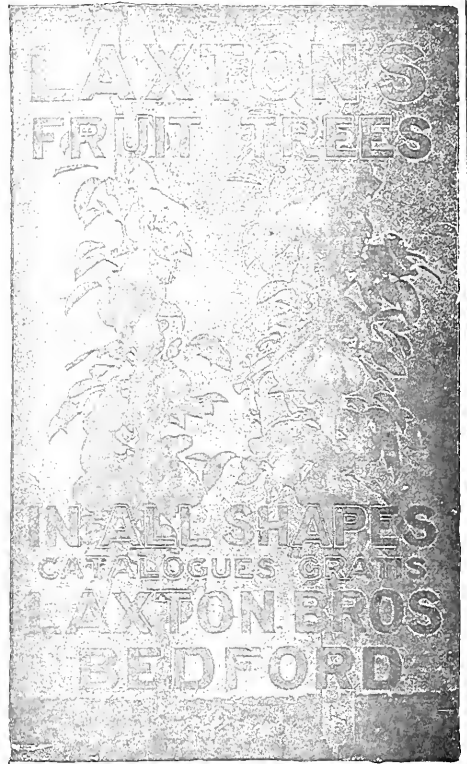
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STANDARDS, 2/6 each, 24/- doz.; BUSHES, 1/6 to 3/6 each; PYRAMIDS, 2/6 to 5/- each; ESPALIERS, 3/6 to 5/- each; CORDONS, from 1/6 to 2/6 each; WALL TREES, 3/6 to 7/6 each.

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Pamphlet with valuable Cultural details, post free for rd. stamp.

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For BLIGHT, "BLACK SPOT," &c., on Apple or other Fruit Trees

1 Gal. Drums . . . 8/- each
5 & 10 Gal. Drums . . 7/6 per gal.
40 Gal. Casks . . . 6/9 per gal.

ANTIPEST

Kills Red Spider, Caterpillar, &c.

Used by all the leading Gooseberry Growers
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KILLS ALL WEEDS, MOSSES, &c.
On Carriage Drives, Gravel Paths

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DOUBLE THE STRENGTH
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1 Gallon to 60 Gallons of Water

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40 Gal. Cask . . . 140/- (Cask Free)

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* * * * *

NOTICE

TO THE ::
 READERS OF
 IRISH :: ::
 GARDENING

READERS of IRISH GARDENING are asked to kindly introduce the paper to any of their friends interested in plants and gardening. They will recognize that it well sustains its old standard of Excellence as to authoritative articles on both the practical and scientific side of Gardening.

Every Irish Gardener and every owner of any size Garden in Ireland should obtain IRISH GARDENING (monthly), and read it; and having read it should preserve it for binding. It is worth it! The current No. introduces new features and new writers of undoubted authority in the world of horticulture.

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Although we are at present employed largely on National War Service, we are still in a position to carry out private work in the way of repairs and renewals. We ask our patrons to give us as much time as possible for the carrying out of such work, so that we may arrange to have it done without reducing our War Service output.

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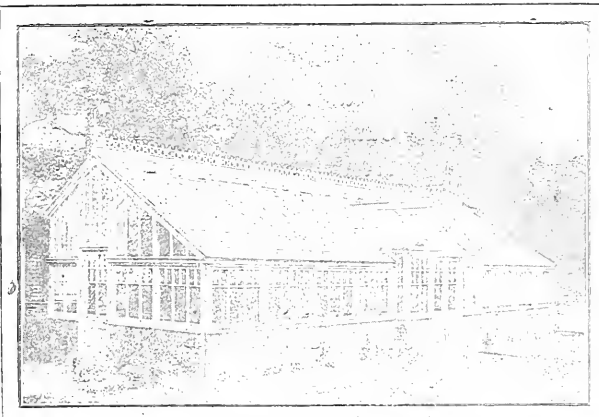
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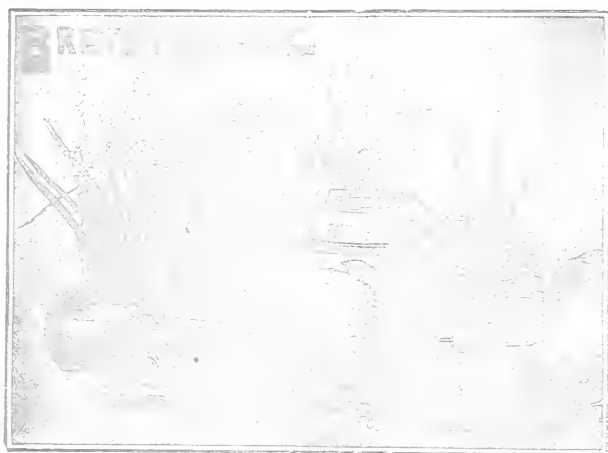


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Round Bowls

1 6, 2/6, 3 6, and 4 6

Oval Bowls

4 6

Oblong Bowls, plain

1/6, 2 - and 3 6

Prepared Fibre

per bushel 4/6

per peck 1/6

Narcissus and Daffodils

	Per 100—s.
Barri Conspicuous , yellow, with crimson cup	0 9
Bicolor Empress , white perianth, golden trumpet	1 6
— Madam Plomp , the finest bicolor	1 0
— Victoria , a fine flower of perfect form	1 4
Emperor , primrose perianth and golden trumpet	1 6
Golden Spur , clear golden-yellow	1 6
Sir Watkin , golden-yellow; a grand flower	1 3
Von Sion or Telamonius Plenus (DOUBLE DAFFODIL)	1 6

Polyanthus Narcissus

	s. d.
Grand Monarque , white, with yellow cup	2 3
Scilly White , pure white, early	1 3
White Pearl , early white	1 6

Snowdrops

	Per 100—s. d.	Per doz.—s. d.
Single	4 0	0 8
Double	5 0	0 9

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SEED AND BULB MERCHANTS

10 DAME STREET—DUBLIN

SEND FOR CATALOGUE

Royal Horticultural Society of Ireland.

THE monthly meeting of the Council was held at the Society's offices, 5 Molesworth Street, Dublin, on the 13th inst., Dr. R. T. Harris presiding. A financial statement of the Fête and Show held in Lord Iveagh's grounds, August 21st and 22nd, was submitted by Sir Frederick Moore, Hon. Secretary, and the Finance Committee, and accounts in connection with both passed for payment. It was noted by the returns that substantial help will be afforded to the Irish Branch of the Vegetable Products Committee for supplying fruit and vegetables to our sailors, and it was ordered that results and acknowledgments be furnished to those ladies and gentlemen who organised and carried out the fête so efficiently, and those who kindly contributed to its success as soon as possible.

Mr. Herbert Beddington, The Cottage, Ballyhooly, Co. Cork, was elected a member of the Society. Messrs. Chas. Ramsay & Son, The Royal Nurseries, Ballsbridge, were awarded a First Class Certificate and cultural commendation for stands of Cactus and Collarette Dahlias exhibited at the meeting.

Trials at Wisley, 1918.

THE Royal Horticultural Society will hold trials of Achilleas (all kinds), Candytufts (perennial varieties), and Chrysanthemum maximum and its allies at Wisley in 1918. Three plants of each variety to be tried, together with the necessary entry forms (one for each variety), should reach the Director, R.H.S. Gardens, Wisley, Ripley, Surrey (Station, Horsley, L. & S. W. R.), by November 30, 1917. Forms of entry can be obtained from the Director at the above address.

Trial of Late Peas at Wisley, 1917.

THE following awards have been made to Late Peas by the Council of the Royal Horticultural Society after trial at Wisley:—*Award of Merit*. No. 24. Latest of All; sent by Messrs. Barr. Nos. 57, 58. Longstander; sent by Messrs. Sutton and Messrs. Barr. No. 42. Rearguard; sent by Messrs. Hurst. *Highly commended*.—No. 30. Autocrat; sent by Messrs. Simpson. No. 23. Perpetual Bearer; sent by Messrs. Barr. No. 2. Reliable; sent by Messrs. Harrison. Nos. 12, 14. The Gladstone; sent by Messrs. Simpson and Messrs. Barr. *Commended*. No. 25. Anticipation; sent by Messrs. Carter. No. 20. Late Queen; sent by Messrs. Nutting. No. 45. Michaelmas; sent by Messrs. Barr. No. 55. Ne Plus Ultra. Selected; sent by Messrs. Barr.

Home-Grown Bulbs.

EDMONDSON BROTHERS, of 10 Dame Street, Dublin, are now offering a good selection of all the finest hardy bulbs, corms and tubers. Dutch bulbs, such as early Tulips and Hyacinths are not available so far, but with the many fine things which can be grown at home these will hardly be missed. What could be more beautiful than Daffodils in March and April, Cottage and Darwin Tulips in April and May, Spanish Irises in June: Snowdrops, too, that come in February, and the nodding Scillas or Bluebells which flower in May are beautiful, and have the great advantage over early Tulips and Hyacinths in that they may be planted where they can remain, and will increase in beauty every year. These, as well as Grape Hyacinths, Jonquils and Lilies, Messrs. Edmondson offer at reasonable rates. Of other spring flowers for autumn planting a good selection is offered—Violas, Forget-me-Nots, Arabis, Alyssum, Polyanthus and Primroses, all of which go well with bulbs. Amateurs and allotment holders will find the lists of tools and manures useful. Now is the time to apply Basic Slag to allotments, and it can be purchased in suitable small quantities very cheaply. Those who contemplate investing in a spade or other tool will find the illustrations useful. It would not be a bad thing if some of the excessively long-handled spades still seen about Allotments were discarded in favour of a decent short-handled tool, which will do twice as much work in half the time, and do it better with less strain on the worker. You must call or send for the Catalogue.



"SANITAS" POWDER
will rid your Garden of Slugs and protect your Seeds and Plants from other pests such as Worms, Rats, Mice, Sparrows, Cats, &c.

Leaflet and Free Sample with instructions Free.

6d. & 1/- Tins & 15/- per Cwt. (f.o.r. London) of all Chemists, Stores and Nurserymen.

THE "SANITAS" CO., Ltd.
Limehouse, London, E.

Awarded Medal at Royal Horticultural Exhibition, 1911.

Colchicums & Crocus Species

FOR IMMEDIATE PLANTING.

COLCHICUMS:—	per doz.		per 100		per 1,000	
	s.	d.	s.	d.	s.	d.
autumnale album	10	6	20	0		
.. .. plenum 1/- each	3	6	20	0		
.. .. plenum	3	0	17	6		
.. .. maximum	1	6	10	0		
.. .. mixed	2	6	15	0		
Bornmuellerii	2	6	15	0		
giganteum	2	6	15	0		
speciosum	2	6	15	0		
.. .. album 1/6 each	10	6	70	0		
.. .. [maximum (T.S.) 1/6 each	15	0				
Veratrifolium	3	6	20	0		

CROCUS SPECIES.

Autumn flowering:—

Asturicus	3	6	—			
Clusii	1	6	7	6		
Græcus	2	0	10	0		
Ochroleucus	1	6	7	6		
Salzmanni	1	6	8	0		
Siculus	1	6	8	0		
Speciosus Aitchisonii	—	—	7 6 & 10	—	65/- & 85/-	
Tingitanus	1	6	7	6		
Zonatus	—	—	6 & 7	—	55/- & 65/-	

Winter flowering:—

Ancherii	2	0	12	6		
Cancellatus var. Da-pascensis	4	0	—			
Chrysanthus	1	6	10	0		
.. .. fusco-tinctus	3	0	20	0		
Hymantus	1	6	8	0		
Isauricus	5	0	40	0		
Vitellinus	3	0	20	0		

Spring flowering:—

Aerius	24	0	—			
Aureus	1	6	7	6		
Bannaticus	3	0	—			
Heuffelianus	2	0	10	6		
Kotschyanus	3	0	—			
Mæsiacus	3	0	17	6		
.. .. stellaris	1	4	7	6		
Versicolor obscurus	2	6	15	0		
.. .. violaceus	1	6	6	0		

Complete Collection, with descriptions, will be found in Bulb List, which will be posted on application.

T. SMITH, DAISY HILL NURSERY, NEWRY

DICKSON'S HAWLMARK BULBS

Owing to the prohibition of the importation of bulbs we cannot offer Hyacinths, Crocus or early Tulips this season. We have, however, large stocks of Darwin Tulips, Narcissus, Iris, Snowdrops, Anemones, Gladioli and many other choice Spring bulbs.

Quality good. Price moderate. See our Catalogue.

ALEX. DICKSON & SONS, LTD.
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Ask Your Nurseryman or Seedsman

For the following Well Known and Highly Efficient Horticultural Preparations.

THE CHEAPEST INSECTICIDE OF THE DAY "NIOUAS".

(NON-POISONOUS) IMPROVED

A Concentrated Extract of Quassia, combined with other valuable ingredients, forming a cheap, safe, and effective Insecticide for syringing and dipping. It destroys all Insect Pests infesting Trees and Plants, whilst no possible injury to vegetation can result from its use.

It can be applied with syringe or pump, or used for dipping.

PRICES—Half-pint, 1/-; pint, 1/6; quart, 2/6; half-gallon, 4/-; gallon, 7/6; five gallons, 25/-; ten gallons, 45/-
1 gallon sufficient for 80 gallons of water.

STANDEN'S MANURE

(Established over 35 Years)

Exceeds all others in General Fertilising Properties and Staying Powers
Analysis on Application

Sold in Tins, 6d., 1/-, 2/6, 5/6 each; and in Kegs, well secured, to prevent loss through exposure, 22 lbs., 8/6; 56 lbs., 13/6; 112 lbs., 22/6

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"OPTIMUS" WORM POWDER (NON-POISONOUS)

For the complete destruction of Worms on Lawns, Bowling Greens, Putting Greens, and Golf Links.

NOT INJURIOUS TO ANIMALS OR BIRDS.

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Lbs. 7 14 28 56 112 5 cwt. 10 cwt. 1 ton
Each 1/9 3/- 5/- 7/6 12/- for 57/6 110/- 210/-

For Fumigating in Greenhouses.

"LETHORION"

IMPROVED METAL CONES

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To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and "lean-to's" up to 1,000 cubic feet. Price, 6d. each.

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No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

FOWLER'S LAWN SAND

This preparation is for destroying Daisies and other weeds on lawns and at the same time stimulating the growth of the grass. If one tin is tried as a sample, its value will be at once appreciated. Sales are largely increasing.

Tins, 1/-, 2/6, and 5/- each; Kegs, ½ cwt., 3/6; 1 cwt., 18/-;
2 cwt., 30/-

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For Greenhouses. A pleasant green shade is given to the glass. In packets, 1/- for 100 feet of glass, and 2/6 each for 300 feet.

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Catalogues.

"HAWLMARK" BULBS.

UNDETERRED by war prohibitions or any other war-time difficulties Messrs. A. Dickson & Sons have got together a stock of bulbs, corms and tubers which should go far to satisfy their numerous clients during the coming planting season and, of course, next spring. As in other cases Dutch bulbs are not available, but, notwithstanding, there are "oceans" of the beautiful hardy things we can grow at home, and what could be better? All sorts of popular spring and summer flowering plants are offered—Aubrietias, Forget-me-Nots, Pansies and Polyanthuses, Iceland Poppies and Wallflowers, Foxgloves, Canterbury Bells and Sweet Williams: and to mingle with them there are Darwin and Cottage Tulips in rare selection, as well as Daffodils and Irises. St. Brigid Anemones grown in Ireland, and charming "Glory of the Snow" (*Chionodoxa*) Freesias for indoors, and many-hued Hellebores to flower from early spring onwards. Cyclamens and Ixias, Muscaris and Kaffir Lilies, all help to swell the list. Not the least important section of the Catalogue is the list of Sweet Peas for autumn sowing. All the finest varieties are offered, and "*mirabile dictu*" most of them at 3d. a packet. Send for a Catalogue.

POWER'S BULBS.

THE well-known Waterford firm are now ready to send their bulb list to all who care to ask for it. Like all other bulb merchants they are short of some few kinds which are usually imported, but otherwise they will be able to supply quantities of the most beautiful hardy bulbs, tubers and corms. Daffodils, Narcissi, Jonquils and Cottage Tulips, with Anemones, *Chionodoxas*, Muscaris and Irises will suffice to make the garden gay in spring and early summer. Ixias, so lovely in their varied colours, should be planted freely in light, warm soil, and will more than compensate for the lack of Hyacinths and early Dutch Tulips. Snowdrops and Winter Aconite are lovely harbingers of spring, and give early promise of still further beauty to follow. The list can be obtained from Wm. Power & Co., Waterford.

Dublin Wholesale Markets.

FOR the past month garden produce of all kinds has been fairly well forwarded, and prices remained fairly steady.

This being a very favourable season for the growth of Cabbages, they have been supplied in abundance. The quality was excellent, and the

prices reasonable enough, but, owing to the increase in quantity, they were not so dear as in the previous month, although at the end of the month prices increased a little. Cauliflowers of good quality are scarce, and the demand being good they are selling well. There has been no dearth in White Turnips, Vegetable Marrows, Peas and Lettuce, and they sold at moderate prices. Carrots and Parsnips were plentiful and sold at reasonable prices. French Beans and Parsley are plentiful and hard to dispose of at reasonable prices. The supply of Beet has been poor, therefore it is selling fairly well. There being no foreign Onions imported now the home grown article is selling exceptionally well.

At the beginning of the month small fruits in season were selling much the same as they were the previous month. Large quantities of mixed lots of Apples, such as thinnings and windfalls, were supplied in the beginning of the month, with the result that they sold badly. Towards the end of the month Apples of good quality were supplied, properly graded and packed, and brought good prices. Plums seem to be scarce this year and demand good prices. Owing to the scarcity of Pears the prices were very good. Blackberries have been very moderately supplied, and command a ready sale.

There was a good demand for cut flowers, and they were selling well.

The following is a price list for the month:—

	FRUIT.	From		To		
		s.	d.	s.	d.	
Apples	per float	.	2	0	4	6
"	per tray	.	2	0	6	0
"	per barrel	.	8	0	22	0
Pears	per float	.	4	0	8	6
Plums	per handle	.	1	8	3	0
"	per float	.	5	0	6	6
Grapes	per lb.	.	1	3	1	6
Damsons	per bushel	.	6	6	7	0

VEGETABLES.

Cabbages	per load	.	12	0	25	0
Cauliflowers	per doz.	.	1	6	2	2
White Turnips	per bundle	.	0	6	0	8
Cucumbers	per dozen	.	1	6	3	0
Veg. Marrows	"	.	1	0	2	6
Spinach	per float	.	0	3	0	5
Broad Beans	per bag	.	12	0	14	0
Beet	per bunch	.	0	3	0	5½
Onions, Tripoti	"	.	1	0	2	3
Thyme	"	.	0	6	1	0
Carrots	per doz. bunches	.	0	10	1	4
Parsnips	"	.	1	4	1	8

FLOWERS.

Asters	per doz. bunches	0	6	0	8
Chrysanthemums	"	0	6	1	0
Helianthus	"	0	4	0	8

Miscellaneous Section.

KING'S ACRE FRUIT TREES

Have Produced the Finest
Apples and Pears on Record

60 Acres of Choice Fruits to select from. Please see our
Illustrated Catalogue, free by post, before ordering elsewhere.

King's Acre Nurseries, Ltd.,
HEREFORD

THE NONE-SO-HARDY Nursery Products

Are absolutely healthy and regularly transplanted
(Department Inspected)

A few lines are . . .

APPLE TREES, in fruiting state, 10/- to 15/- doz.
LARCH, SCOTCH, SPRUCE, splendid planting
stuff, from 2/6 per 100; also from 25/- per 1,000
SITKA SPRUCE, DOUGLAS FIR,
THUYA OCCIDENTALIS, and other Orna-
mental Conifers.

THORN QUICKS, from 10/- to 25/- per 1,000
A small trial order will convince of the very meritorious
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Very extensive stock to select from. Satisfaction
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NOW IS THE TIME TO PLANT.

KELWAY & SON, THE ROYAL HORTICUL-
TURISTS, LANGPORT, SOMERSET, are now
booking orders for their Choice Hardy Perennial
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and you will be able to enjoy its exquisite beauty
for many years, without any additional expense or
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Send the measurements of your borders.

Paeonies, Delphiniums, Phloxes, Gaillardias, and
other beautiful flowers, included in their Colour
Schemes, which provide blooms from early Spring
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Write now to the Retail Plant Department for
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SEED of choice and rare ALPINES, from a very large
collection. All those who possess a ROCK GARDEN
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new and desirable. H. CORREVON, CHENE-BOURG,
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SANKEY'S FAMOUS GARDEN POTS
The BEST and Cheapest
State quantity of each required and have "carriage paid"
quotation ("carriage" is usually amount to half value of
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SPECIAL POTS of all descriptions. Bulb Bowls and Fern
Pots from 2d. each.

RICHARD SANKEY & SON, LTD.
Ratwell Potteries, NOTTINGHAM.

AUTO-SHREDS IS CERTAIN

DEATH to
Leaf-mining Maggots, Mealy Bug and
all Pests infesting plants under glass, &c.
Simple to use, no apparatus required. In
Boxes to fumigate 1,000 cubic feet, 6d.;
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Department of Agriculture and Technical Instruction for Ireland.

LIST OF THE DEPARTMENT'S LEAFLETS.

No.	Name	No.	Name
1	The Warble Fly.	54	Calf Meals.
2	The Use and Purchase of Feeding Stuffs	55	The Apple.
3	Footrot in Sheep.	56	Cultivation of the Root Crop
4	The Sale of Flax.	57	Marketing of Fruit.
5	Celery Leaf-Spot Disease or Blight	58	Sprouting Seed Potatoes.
6	Charlock (or Preshaugh) Spraying	59	Testing of Farm Seeds.
7	Fluke in Sheep.	60	The Packing of Butter.
8	Timothy Meadows.	61	Field Experiments—Wheat.
9	The Turnip Fly.	62	The Management of Dairy Cows.
10	Wireworms.	63	"Redwater" or "Blood Murrain" in Cattle.
11	Prevention of White Scour in Calves.	64	Varieties of Fruit suitable for cultivation in Ireland.
12	Liquid Manure.	65	Forestry: The Planting of Waste Lands.
13	Contagious Abortion in Cattle.	66	Forestry: The Proper Method of Planting Forest Trees.
14	Prevention of Potato Blight.	67	Forestry: Trees for Poles and Timber.
15	Milk Records.	68	Forestry: Trees for Shelter and Ornament.
16	Sheep Scab.	69	The Prevention of Tuberculosis in Cattle.
17	The Use and Purchase of Manures.	70	Forestry: Planting, Management, and Preservation of Shelter-Belt and Hedgerow Timber.
18	Swine Fever.	71	Forestry: The Management of Plantations.
19	Early Potato Growing.	72	Forestry: Felling and Selling Timber.
20	Calf Rearing.	73	The Planting and Management of Hedges.
21	Diseases of Poultry—Gapes.	74	Some Common Parasites of the Sheep.
22	Basic Slag.	75	Barley Sowing.
23	Dishorning Calves.	76	American Gooseberry Mildew.
24	Care and Treatment of Premium Bulls.	77	Scour and Wasting in Young Cattle.
25	Fowl Cholera.	78	Home Buttermaking.
26	Winter Fattening of Cattle.	79	The Cultivation of Small Fruits.
27	Breeding and Feeding of Pigs.	80	Catch Crops.
28	Blackleg, Black Quarter, or Blue Quarter.	81	Potato Culture on Small Farms.
29	Flax Seed.	82	Cultivation of Main Crop Potatoes.
30	Poultry Parasites—Fleas, Mites, and Lice.	83	Cultivation of Osiers.
31	Winter Egg Production.	84	Ensilage.
32	Rearing and Patterning of Turkeys.	85	Some Injurious Orchard Insects.
33	Profitable Breeds of Poultry.	86	Dirty Milk.
34	The Revival of Tillage.	87	Barley Threshing.
35	The Liming of Land.	88	The Home Bottling of Fruit.
36	Field Experiments—Barley.	89	The Construction of Piggeries.
37	" " Meadow Hay.	90	The Advantages of Early Ploughing.
38	" " Potatoes.	91	Black Scab in Potatoes.
39	" " Mangolds.	92	Home Preservation of Eggs.
40	" " Oats.	93	Marketing of Wild Fruits.
41	" " Turnips.	94	Cost of Forest Planting.
42	Permanent Pasture Grasses.	95	Store Cattle or Butter, Bacon and Eggs.
43	The Rearing and Management of Chickens.	96	Packing Eggs for Hatching.
44	"Husk" or "Hoos" in Calves.	97	Weeds.
45	Ringworm on Cattle.	98	Tuberculosis in Poultry.
46	Haymaking.	99	Seaweed as Manure.
47	The Black Currant Mite		
48	Foul Brood or Bee Pest.		
49	Poultry Fattening.		
50	Portable Poultry Houses.		
51	The Leather-Jacket Grub.		
52	Flax Growing Experiments.		
53	The Construction of a Cowhouse		

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1	Catch Crops—Spring Feeding for Stock.	10	Pig Feeding—The Need for Economy.
2	Autumn Sown Cereals.	11	Poultry " " " "
3	Eggs and Poultry.	12	Digging and Storing Potatoes.
4	The War and Food Production.	13	Sulphate of Ammonia.
5	Spring Wheat.	14	Flax Seed for 1918 Sowing.
6	Winter Manuring Grass Lands.	15	Purchase of Basic Slag.
7	Feeding of Pigs—Use of Boiled Swedes.	16	Prices of Superphosphate.
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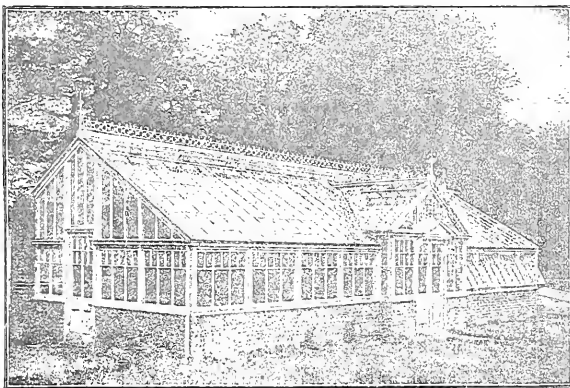
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	Per doz.—s. d.
Barri Conspicuous , yellow, with crimson cup	0 9
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"Of the 2,200 Apple Trees I got from you two years ago, not one died. They are fine and hardy, with no sign of disease, and when you are in the district you ought to call and see them. My first planting is yielding a barrel to the tree."—J. B. P., Esq., Co. Kildare.

Roses.

The Roses both in our Clontarf and Killiney Nurseries have attracted numerous visitors this year, the collection including all recent novelties, right up to those sent out for the first time in 1917. For quality, ripe vigorous growth and abundance of fibrous roots, our Rose Trees will compare with those of any firm in the United Kingdom. "Watson's Special Rose Discount," as detailed in new Rose Catalogue, is a discount worth having. Send for new price list.

All Communications to WM. WATSON & SONS, LTD., CLONTARF NURSERIES, DUBLIN.—[ADVT.]

Royal Horticultural Society of Ireland.

The monthly meeting of the council was held at the offices, 5 Molesworth Street, Dublin, on the 12th ult., Dr. R. T. Harris, and subsequently the Marquis of Headfort (President of the Society), presiding. Also present—Sir Frederick W. Moore, W. F. Gunn, J.P.; J. E. Geoghegan, M.A.; J. Wylie-Henderson, H. Bill, W. Usher, D. L. Ramsay, J.P.; G. M. Ross, M.A.; Robert Anderson and Jas. J. McDonough. Regrets were received from Messrs. E. D'Olier, A. V. Montgomery, E. H. Walpole, George Watson, and F. V. Westby, D.L. Concluding business of the last Fete and Show was dealt with, and a vote of sincere sympathy and condolence was passed to Mr. and Mrs. Westby and family on the loss of their son, killed in action in France. A certificate of merit and cultural commendation was awarded to Messrs. Wm. Watson & Sons, Ltd., for a collection of Perennial Asters exhibited at the meeting.

The Irish Forestry Society.

In response to an appeal for the celebration of the National Arbor Day for Ireland, officially fixed for the first Saturday in November, many encouraging replies from County Councils, rural authorities, and other public bodies have been received by the committee. The movement has further been splendidly taken up by the masters and mistresses of Boys' and Girls' National Schools, under the National Board of Education, prompted by a circular letter from the Commissioners of the National Board. The origin of the Arbor Day movement is thus given in the opening page of a pamphlet issued by the Irish Forestry Society (to be obtained from the Secretary, 5 Molesworth Street, Dublin)—viz:

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An Excellent Stimulant.

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7/6; 14 lbs., 4/6; 7 lbs., 2/6; Tins, 2/6,
1/-, and 6d. Carriage paid on 56 lbs.
and up anywhere in United Kingdom.

Special Topdressing Manure—56 lbs.,
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autumnale album	3	0	20	0		
.. .. . plenum 1/- each	10	6				
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Bornmullerii	2	6	15	0		
giganteum	2	6	15	0		
speciosum	2	6	15	0		
.. .. . album 1/6 each	10	6	70	0		
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Veratrifolium	3	6	20	0		

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Autumn flowering:—

Asturicus	3	6	—		
Cusii	1	6	7	6	
Graecus	2	0	10	0	
Ochroleucus	1	6	7	6	
Salzmanni	1	6	8	0	
Siculus	1	6	8	0	
Speciosus Aitchisonii	—	7	6	10	65/- & 85/-
Tingitanus	1	6	7	6	
Zonatus	—	6	7	55	& 65/-

Winter flowering:—

Aucherii	2	0	12	6
Cancellatus var Damascenus	4	0		
Chrysanthus	1	6	10	0
.. .. . fuscotinctus	3	0	20	0
Hyemalis	1	6	8	0
Isauricus	5	0	40	0
Vitellinus	3	0	20	0

Spring flowering:—

Aerius	24	0	—	
Aureus	1	6	7	6
Bannaticus	3	0	—	
Heuffelianus	2	0	10	6
Kotschyanus	3	0	—	
Mesiacus	3	0	17	6
.. .. . stellaris	1	4	7	6
Versicolor obscurus	2	6	15	0
.. .. . violaceus	1	6	6	0

Complete Collection, with descriptions, will be found in Bulb List, which will be posted on application.

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Prices—

Lbs. 7 14 28 56 112 5 cwt. 10 cwt. 1 ton
Each 1/9 3/- 5/- 7/6 12/- for 57/6 110/- 210/-

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To destroy Insect Pests. The Candle attached to each Cone only needs lighting, and there is no further trouble. They are most efficacious.

No. 1. For frames and “lean-to’s” up to 1,000 cubic feet. Price, 6d. each.

No. 2. For small greenhouses up to 1,500 cubic feet. Price, 8d. each.

No. 3. For a well secured house of 2,000 to 2,500 cubic feet. Price, 1/- each.

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perceiving that the trees, the great source of wealth to the States, were being felled without any provision for planting, and that a scarcity of timber was imminent, planted a tree on his marriage day. He appealed to every young man similarly circumstanced to follow his example. The result in his own State of Nebraska since that day is that over six hundred millions of trees have been planted, perpetuating the supply of timber, and enriching the State to an enormous extent. The movement spread to other States, which took it up and gave grants of land and money. Arbor Day was established as a public holiday, and has become a national institution."

Dublin's Arbor Day celebration will this year, by permission of the Rathmines and Rathgar Urban Districts Council, be held in Harold's Cross Park on Saturday, November 3rd, proceedings commencing at 3 p.m., at which George Metcalfe, Esq., J.P., will preside, and various public men have been invited to speak in the interest of the Arbor Day movement generally, and of the urgent need of tree-planting throughout Ireland in particular.

Trials of Spring Sown Onions at Wisley, 1917

The following awards have been made to Spring Sown Onions by the Council of the Royal Horticultural Society after trial at Wisley:—

Highly Commended.—No. 35, A1, sent by Messrs. Sutton, Reading, No. 20, Ailsa Craig, sent by Messrs. Dobbie, Edinburgh, No. 12, Bedfordshire Champion, sent by Messrs. Sutton, Reading, No. 32, Champion, sent by Messrs. E. W. King, Coggeshall. *Commended*.—No. 26, Up-to-Date, sent by Mr. Gray, Sandy, Beds.

Trial of Spring Sown Beet at Wisley, 1917.

The following awards have been made to Beet by the Council of the Royal Horticultural Society after trial at Wisley:—

First Class Certificate.—No. 41, Green Top, Sutton's Strain, sent by Messrs. Sutton. *Award of Merit*.—No. 57, Brydon's Exhibition, sent by Messrs. Barr, No. 45, Cheltenham Green Top, sent by Messrs. Sydenham, Nos. 36, 37, Dewar's Northumberland Red, sent by Barr and Nutting, No. 38, which was sent in as Covent Garden Compact Top by Messrs. Barr but was considered identical with Nos. 36 and 37, No. 49, Sutton's Perfection, sent, raised, and introduced by Messrs. Sutton, No. 53, Nutting's Selected Red, sent by Messrs. Nutting. *Highly Commended*.—Nos. 67, 68, 69, Deep Blood Red Non-Bleeding, sent by McLennan, Veitch, Bell; raised and introduced by Bell, No. 65, Sutton's Black, sent by Sutton, No. 66, Dobbie's Purple, sent by Dobbie. The Committee consider 65 and 66 to be identical, No. 48, Market Favourite, sent, raised, and introduced by Sutton, No. 29, Veitch's Intermediate, sent by Sutton, No. 73, Yates' Non-pareil Red, sent by Barr, raised by Yates. *Commended*.—No. 31, Carter's Perfection, sent

raised, and introduced by Carter, No. 52, Pragnell's Exhibition, sent by Barr, No. 23, Queen of the Blacks, sent by Barr.

Awards to Potatoes.

AWARDS to Potatoes resistant to Wart Disease grown at Wisley to compare cropping and cooking qualities.

The names in brackets following the names of the variety are of those who presented the seed, or from whom it was purchased. The seed was in each case grown in Scotland or Ireland.

Award of Merit.—Nos. 30, 31, Golden Wonder (Dobbie, Sutton), Nos. 6, 7, 8, Great Scot (Dobbie, Sutton, Veitch), with which the Committee considered No. 9, Sir Douglas Haig (Sands) and No. 10, Southampton Wonder (Toogood) to be identical, No. 20, King Albert (Sands), No. 5, King George (Sutton), Nos. 27, 28 Langworthy (Dobbie, Sutton), with which the Committee considered No. 29, Whats Wanted (Sutton) to be identical. *Highly Commended*.—No. 26, Burnhouse Beauty (Dobbie), No. 4, Conquest (Sutton), No. 45, Dominion (Dobbie), Nos. 13, 14, Favourite (Dobbie, Sutton), Nos. 32, 33, Rob Roy (McAlister, Veitch), No. 44, St. Malo Kidney (Fidler), No. 22, The Crofter (Dobbie), No. 24, Twentieth Century (Sutton), Nos. 42, 43, White City (Dobbie, Sutton), No. 49, Western Hero (Veitch). This variety has not yet been grown in the trials carried out under the Board of Agriculture for wart-resistance.

Catalogues.

MESSRS. WATSON, Clontarf Nurseries, Dublin, are now in a position to submit catalogues of their Roses and Fruit Trees, and those who have not already done so may well send a P.C. for copies. In their Rose List everything that is best in Roses of all kinds is offered—Hybrid Teas, Perpetuals, Ramblers, &c., are offered in forms to suit all. A feature of the Rose List is the full and accurate descriptions accompanying each variety. The delicate art shades found in many of the newer Roses are by no means easy to describe on paper, but Messrs. Watson have succeeded in conveying a very accurate impression by means of carefully worded descriptions.

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At their extensive new nurseries at Killiney Messrs. Watson have got together a fine collection of the best Fruits of all kinds, and have given particular attention to Apples, which have a great future in Ireland. Kitchen and dessert varieties are grown extensively, and can be obtained in all shapes suitable for garden and orchard. Pears, Peaches and Plums, Apricots, Cherries and small fruits are extensively grown, and all the requirements of a modern fruit grower can be met from the stock grown at Killiney. The nurseries occupy an open exposed situation ensuring sturdy, short-jointed, well-ripened growth, which will render the young trees amenable to after cultivation anywhere.

No time should be lost in sending for catalogues and obtaining any necessary trees or bushes.

Miscellaneous Section

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No.	Name	No.	Name
1	The Warble Fly.	54	Calf Meals.
2	The Use and Purchase of Feeding Stuffs	55	The Apple.
3	Footrot in Sheep.	56	Cultivation of the Root Crop
4	The Sale of Flax.	57	Marketing of Fruit.
5	Celery Leaf-Spot Disease or Blight	58	Sprouting Seed Potatoes.
6	Charlock (or Freshaugh) Spraying	59	Testing of Farm Seeds.
7	Fluke in Sheep.	60	The Packing of Butter.
8	Timothy Meadows.	61	Field Experiments—Wheat.
9	The Turnip Fly.	62	The Management of Dairy Cows.
10	Wireworms.	63	"Redwater" or "Blood Murrain" in Cattle.
11	Prevention of White Scour in Calves.	64	Varieties of Fruit suitable for cultivation in Ireland.
12	Liquid Manure.	65	Forestry: The Planting of Waste Lands.
13	Contagious Abortion in Cattle.	66	Forestry: The Proper Method of Planting Forest Trees.
14	Prevention of Potato Blight.	67	Forestry: Trees for Poles and Timber.
15	Milk Records.	68	Forestry: Trees for Shelter and Ornament.
16	Sheep Scab.	69	The Prevention of Tuberculosis in Cattle.
17	The Use and Purchase of Manures.	70	Forestry: Planning, Management, and Preservation of Shelter-Belt and Hedgerow Timber.
18	Swine Fever.	71	Forestry: The Management of Plantations.
19	Lady Potato Growing.	72	Forestry: Felling and Selling Timber.
20	Calf Rearing.	73	The Planting and Management of Hedges.
21	Diseases of Poultry—Gapes.	74	Some Common Parasites of the Sheep.
22	Basic Slag.	75	Barley Sowing.
23	Disbudding Calves.	76	American Gooseberry Mildew.
24	Care and Treatment of Premium Bulls.	77	Scour and Wasting in Young Cattle.
25	Fowl Cholera.	78	Home Buttermaking.
26	Winter Fattening of Cattle.	79	The Cultivation of Small Fruits.
27	Breeding and Feeding of Pigs.	80	Tea Crops.
28	Blackleg, Black Quarter, or Blue Quarter.	81	Produce Culture on Small Farms.
29	Flax Seed.	82	Cultivation of Main Crop Potatoes.
30	Poultry Parasites—Fleas, Mites, and Lice.	83	Cultivation of Osiers.
31	Winter Egg Production.	84	Ensilage.
32	Rearing and Fattening of Turkeys.	85	Some Injurious Orchard Insecta.
33	Doorn's Breeds of Poultry.	86	Dirty Milk.
34	The Rental of Tillage.	87	Barley Threshing.
35	The Lining of Land.	88	The Home Bottling of Fruit.
36	Flax Experiments—Barley.	89	The Construction of Piggeries.
37	" "	90	The Advantages of Early Ploughing.
38	" "	91	Black Scab in Potatoes.
39	" "	92	Home Preservation of Eggs.
40	" "	93	Marketing of Wild Fruits.
41	" "	94	Cost of Forest Planting.
42	Permanent Pasture Grasses.	95	Store Cattle or Butter, Bacon and Eggs.
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44	"Husk" or "Hoose" in Calves.	97	Weeds.
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46	Haymaking.	99	Seaweed as Manure.
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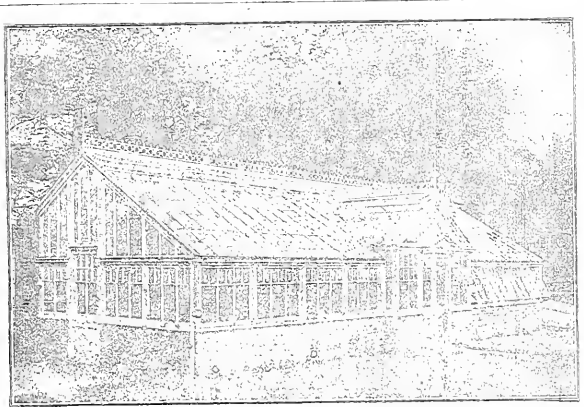
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	per bushel of
Grand Monarque , white with yellow cup	2 6
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Single	4 0	0 8
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The Roses both in our Clontarf and Killiney Nurseries have attracted numerous visitors this year, the collection including all recent novelties, right up to those sent out for the first time in 1917. For quality, ripe vigorous growth and abundance of fibrous roots, our Rose Trees will compare with those of any firm in the United Kingdom. "Watson's Special Rose Discount," as detailed in new Rose Catalogue, is a discount worth having. Send for new price list.

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Rathmines Bushy Park Allotments, Terenure.

PRIZES AND AWARDS GAINED BY MEMBERS
DURING 1917.

(1) *Terenure and Districts Horticultural Society's Show*, held August 8th, 1917:—(a) Collection of 4 vegetables (confined to Rathmines U. D. C. Allotment Holders)—1st Prize, J. J. Sheehan, Plot 108; 2nd Prize, F. S. Smith, Plot 62; 3rd Prize, A. W. H. MacGarvey, Plot 63; V.H.C., L. J. Mason, Plot 17. (b) Collection of 4 vegetables (open to residents of Terenure and Districts)—1st, 2nd and 3rd Prizes as in (a). (c) Round Potatoes (confined to Rathmines U. D. C. Allotment Holders)—1st Prize, P. Mulvany, Plot 57; 2nd Prize, Wm. Salmon, Plot 20. (d) Kidney Potatoes (confined to Rathmines U. D. C. Allotment Holders)—1st Prize, Wm. Smith, Plot 34A; 2nd Prize, Wm. Salmon, Plot 20. (e) Runner Beans (open to Terenure and District)—3rd Prize, L. J. Mason, Plot 17.

(2) *Royal Horticultural Society's Autumn Show*, held 21st and 22nd August, 1917:—Collection of 4 vegetables—open to allotment holders (not necessarily amateurs)—3rd Prize, A. W. H. MacGarvey, Plot 63; 5th Special, William Humphries, Plot 64; H.C., T. Peat, Plot 86.

(3) *Local Land Cultivation Produce Show*, held 1st September, 1917:—(a) Collection of not less than 5 vegetables—1st Prize, A. W. H. MacGarvey, Plot 63; C. F. S. Smith, Plot 64. (b) Collection of 4 vegetables—H.C., Wm. Salmon, Plot 20. (c) Potatoes—1st Prize, T. Peat, Plot 86; H.C., Wm. Salmon, Plot 20.

(4) *Rathmines U. D. C. Prizes for Plots* (confined to Rathmines U. D. C. Allotment Holders)—1st Prize, A. W. H. MacGarvey, Plot 63; 2nd Prize, L. J. Mason, Plot 17; 3rd Prize, A. E. Yeomans, Plot 32; 4th Prize, J. J. Sheehan, Plot 108; 5th Prize, Wm. Humphries, Plot 64; 6th Prize, T. Peat, Plot 86.

(5) *Prize presented by Chairman of Rathmines U. D. C. for Potatoes* (confined to Bushy Park Allotment Holders). Three roots dug up by



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*Awarded Medal at Royal Horticultural
Exhibition, 1917.*

Judges in each competition:—1. Ridge Cultivation—1st Prize, W. J. Brown, Plot 1 (points obtained, 27); 2nd Prize, M. Greenwood, Plot 24 (points obtained, 24); 3rd Prize, T. Calvert, Plot 92 (points obtained, 20). Drill Cultivation—1st Prize, J. A. Robb, Plot 48 (points obtained, 55); 2nd Prize, T. Peat, Plot 85 (points obtained, 51); 3rd Prize, F. S. Smith, Plot 62 (points obtained, 44).

It is interesting to note that, as regards this No. 51 competition, the average yield of ridge cultivation is only one-half of that of drill cultivation. Both ridge and drill were judged on the same lines.

The total value of the prizes won by Bushy Park Allotment Holders amounts to £9 18s. 6d.

Yours faithfully,
 Lotus J. Mason.

Dublin Wholesale Markets.

This market for the previous month was well supplied with fruit, flowers, and vegetables.

Owing to the large quantity of vegetables being supplied, prices were not so good as they were the previous month. Both York and Savoy Cabbages of good quality were supplied in abundance, and sold at somewhat low prices.

Cauliflowers were plentiful, and met with a ready demand. Celery was also plentiful, and the quality far superior to that of last season's crop, but the demand was poor.

There was a particularly dull inquiry on White Turnips, and terms were correspondingly low.

Lettuce, Parsley, Artichokes, and Brussels Sprouts were selling at ordinary prices. Carrots and Parsnips were fairly well supplied, and easily disposed of. A feature of last month's markets was the appearance of a quantity of French Onions, which sold at good prices; but it appears now to be the intention of the Government to retain all the best Onions in France for the future. Home-grown Onions were scarce, and readily bought up.

Apples of good quality, in barrels, bushel boxes, and trays, were selling exceedingly well, but small sorts were not selling so well. The markets were fairly well supplied with Pears of good quality, which commanded high prices. At the beginning of the month Grapes were cheap, but towards the end of the month they were selling better. The delays in voyage and transit of foreign commodities has a deteriorating effect on the condition of same, with the result that Algeria grapes, &c., arrive in very poor and unselectable order.

Chrysanthemums, Roses and Violets were the most notable flowers in the market, and were easily disposed of.

The following is the price list for the month:—

VEGETABLES.	From	To
	s. d.	s. d.
Cabbage (York) per load	7 0	21 0
" (Savoy)	8 0	12 6
Cauliflowers per basket	2 3	4 0
" (Small)	1 3	2 0
Celery (White) per dozen	1 0	3 0
" (Pink)	1 0	1 9
Lettuce	0 2	0 6
Parsley	0 4	0 8

		From	To
		s. d.	s. d.
Sprouts	per float	1 0	1 6
Spinach	"	0 8	1 0
Artichokes	"	1 0	1 9
White Turnips	per bunch	0 3	0 8
Parsnips	per dozen	1 9	2 0
"	per cwt.	5 0	6 0
Carrots	per doz. bunches	1 0	1 2
"	per cwt.	5 6	6 0
Scallions	per bunch	0 6	1 0
Onions	per bag	37 0	—
"	per float	5 0	5 6
Leeks	per bunch	0 4	1 0
Onions (French)	per bag	37 6	—

FRUIT.

Apples (Dessert)	per tray	3 6	6 6
" (Cooking)	per bushel	12 0	15 0
"	per barrel	25 0	36 0
" (Dessert)	"	35 0	43 0
" (Small)	per float	3 0	4 0
Pears	per tray	4 6	9 6
"	per float	1 0	1 3
" Selected	per dozen	6 6	7 0
Grapes (Purple)	per lb.	2 0	2 2
Tomatoes (Irish)	"	0 4	0 8

FLOWERS.

Chrysanthemums	per bunch	0 6	1 0
Roses	"	0 1	0 8
Violets	"	0 2	0 3

J. S. T.

1918

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