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Marlborough's Weeping Broom or Tree Wistaria
(*Chordospartium Stevensoni*).

Photographed in Avon Valley, February, 1931.

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No. 2.

THE NEW ZEALAND TREE BROOM.

By W. Martin, B.Sc., F.R.G.S.

Brooklyn School, Wellington.

In February 1910, the late Mr. T. F. Cheeseman of Auckland received from Mr. George Stevenson of Clarence Valley, Marlborough, flowering and fruiting sprays gathered from a remarkable leafless tree hitherto unknown either to science or to horticulture, which grew near his home. For this tree it was found necessary to establish a new monotypic genus, and a description both of the genus and the species appeared in the Transactions of the New Zealand Institute the following year under the name *Chordospartium Stevensoni*, the subject of this short paper.

The discovery was made on the "foothills near the mouth of the Clarence." Shortly afterwards Cheeseman received further specimens from Mr. C. G. Teschemaker and from Mr. H. F. Hursthouse, both having secured them in the valley of the Avon, a tributary of the Waihopai River, itself a tributary of the Wairau River.

Now, as late as 1928, in the second edition of his "Vegetation of New Zealand," Dr. L. Cockayne writing of the Tree-Broom records that it is "confined so far as is known to two valleys in the North-eastern district." Thus nothing has been published concerning this unique tree since 1910, nor is there anywhere to be found an account of its distribution, its ecology, or its life history save the briefest mention in my "Vegetation of Marlborough" published in 1931.

We have said *Chordospartium* was unknown to horticulture, but there was one remarkable exception. It is a curious fact that this singular and beautiful tree was actually in cultivation in Eng-

land, where it had flowered 'before it had been discovered in New Zealand' so to speak. It came about in this wise. Mr. Humphrey Weld, son of Frederick Aloysius Weld who was Premier of New Zealand in 1864-5, while a guest of Mr. C. G. Teschemaker at Avon Valley, Marlborough, both saw and admired two kinds of flowering broom indigenous to the district—one the so-called Pink Broom and the other the subject of this paper. He asked that ripe seed might be sent to his home at Chideock Manor, Bridport, Dorset, which in due course arrived, and from which plants were successfully raised. As a result Mr Weld had trees flowering in England before Cheeseman first described the tree and gave it its name. In 1927 seed was forwarded to Kew by Mr Teschemaker and from this six plants were successfully raised.

DESCRIPTION OF THE TREE.

Cheeseman, in his "Manual of the New Zealand Flora" speaking of *Chordospartium* says that it "entirely corresponds with *Notospartium* in habit". This however is far from being correct; so much so indeed that the two can be distinguished at distances of over a quarter of a mile. The more outstanding points of difference are these:—

- (1). The ultimate branchlets of *Chordospartium* are pendulous at all times, those of *Notospartium* being rather twiggy and erect or semi-pendulous except when very young or when weighted down with flowers or pods.
- (2). The Pink Brooms (*Notospartium* spp.) never develop a true vertical trunk, and rarely reach arborescent proportions.
- (3). The Pink Brooms most commonly grow on the rocky banks of a stream, or on stony places on a steep hillside overlain with a thin veneer of soil; the Tree Broom on the other hand is an erect tree growing on alluvial soils.
- (4). The Tree Broom always forms an umbrella-shaped tree, and this the Pink Brooms never do.

Chordospartium is a canopy tree attaining a height of twenty feet or more. At a height above the ground usually varying from two to five feet, the erect trunk forks or more usually divides into three main stems, each of which again branches similarly. This is repeated till a wide-spreading canopy of long, green, pendulous, leafless branches results. The tree is at all times leafless except as a one or a two-year old seedling.

The bark is pale grey in colour on the lower half of the tree, and the stems are circled every inch or two with raised rings, which I suspect correspond to periodic intervals of growth. These are particularly noticeable at a height of from 8 to 10 feet. Above this the stems are brown and conspicuously striate. They then become greener till terminated by the ultimate cladodes. These striate, grooved stems bear no small resemblance to those of the

rather remarkable 'Stick-plant' (*Corallospartium crassicaule*) occasionally encountered on the shingle screes of Canterbury and Otago. Particularly striking is this resemblance in the case of the main stem of young, rigidly erect stems of *Chordospartium* 4 to 6 feet high.

According to Mr. H. F. Hursthouse, flowering occurs once every two years, and my own experience supports the view that flowering is not an annual event; Mr. Teschemaker says that longer intervals sometimes elapse, which is undoubtedly true. From one or more nodes on the ultimate, pendulous branchlets a number of racemes, usually 1 to 3, of pale lavender, pea-like blossoms make their appearance in early December. Each of these is from 1 to 3 inches long and bears up to 20 flowers. Blossoming occurs as a rule in early January, though in the shaded valley of the Swale it occurs as late as the first week of February, while in cultivation in Blenheim blossoming takes place in mid-December. The seed is borne in short, rhomboidal, silky, indehiscent pods and is ripe about the latter half of April. Cheeseman's statement that the seeds take over a year to mature is quite untrue.

The largest tree measured by me had a girth, one foot above the ground, of 43 inches, corresponding to a diameter of over 14 inches. This tree was one of 20 growing in the valley of the Jordan River, some three miles from its junction with the Awatere River. The tallest tree measured, also growing in this area, was 25 feet high and had a spread of 20 feet compared with 24 feet in the case of the other. Cheeseman gives the diameter of the stem as 6 to 8 inches, but the average diameter of adult trees is between 11 and 12 inches. Indeed the first branch may be 10 inches thick.

DISTRIBUTION OF *CHORDOSPARTIUM*.

As the Tree Broom is quite a rare plant confined to a narrow strip of country stretching across the Marlborough Province to which it is endemic, some facts relating to its present known habitats are here recorded.

The two habitats mentioned by Cheeseman in the Manual mark the eastern and western limits of its distribution, but it is not restricted to these localities. It grows in the valley of the Grey which flows into the Awatere near Upcot, and again in the Jordan, a tributary of the same river taking its rise in the Camden Range. If one follows the pack track above this river it leads to the Medway, and to the Swale a tributary of the Clarence. In both valleys *Chordospartium* is to be seen, some fine trees growing near the shepherd's camp in the Swale. Further trees are known in the valley of the Jam, a precipitous stream rising in the Seaward Kaikouras. A thorough search of the numerous stream valleys leading into the Clarence from the Seaward and Inland Kaikouras would doubtless reveal other stations, but these are very difficult of access. The total of trees known to me in the area of distribution scarcely exceeds fifty, and it appears unlikely that the total number much exceeds 100.

ECOLOGY.

Every specimen of the Tree Broom known to me grows beside a stream at the base of a valley, and rarely more than a few feet above the ordinary level of the water. Thus of 20 trees in the Jordan Valley only two grow more than 6 feet above the stream level; and whereas the species of *Notospartium* which commonly grow in the same area occupy rupestral stations rarely less than 6 feet above the water, *Chordospartium* is never found in such a station. On the contrary it is a plant of alluvial soil or of loamy soil near the base of a valley. Like the Kowhai (*Edwardsia microphylla*) or the lacebark (*Hoheria angustifolia*) the Tree Broom is intolerant of deep shade save in the earliest stages.

Though the seed germinates quickly after it falls, in nature seedlings are very rarely met with. This is to be attributed to the presence of stock, goats, and deer which are very fond of chewing the stems of the adult plants, and presumably eat down the seedlings, which spring up on free, damp, well-drained soil under or near the parent tree. Indeed, the only seedlings that have much chance of surviving to-day are such as germinate in a thicket or close to a bushy shrub. A fairly close search has revealed the existence of a very small number of seedlings or young plants in any area examined. On the roots of adult trees and to a lesser extent on the roots of quite young seedlings, nodules were present. The altitudinal range of the tree lies between 1000ft. and 2000ft.

CULTURE.

In cultivation seed germinates freely under any specimen that has recently blossomed. If sown as soon as ripe in trays of nicely prepared soil, a good strike may easily be obtained. The first stem consists of a flat strap-shaped shoot from the margins of which true leaves grow at intervals, while a long tap-root strikes deep into the soil. In the second year this shoot commonly turns to a straw colour, and the leaves either disappear or are replaced by very tiny leaves unless the tray has been kept in a very damp and shady situation. At this stage the seedling appears to have died and is apt to be discarded. If left alone, however, it will be found that it is still making growth, and the following year will usually see the first round stem of the adult stage pushing its way vertically upwards. For a time there are few branches and these too short to be pendulous, but by the fourth year the main physiognomic features of the adult have been established.

When cultivated in a rich garden soil, the growth remains spindly, and the shrub requires to be staked up for a time; but in such a station numerous long, pendulous branches develop rapidly and the plant acquires a graceful weeping habit which makes it a distinctive ornament to any garden. Flowering commences about the sixth year, and a well grown shrub in full flower is an attractive plant of which any owner may justly be proud. Each raceme bears

upwards of 20 flowers of a pale lavender shade, and the origin of yet another local name for this broom—Native Wistaria—is not difficult to explain.

When a large tree has been cut down, contrary to the usual result with most New Zealand trees, a large number of shoots sprout from the top of the stump, and such a decapitated tree may in a year or two develop a veritable dome of blossom. A large tree thus cut down and transplanted in the heart of summer to his home garden, was found by Mr. D. Lester of Avon Valley to grow splendidly in just such a manner.

As a shrub or as a tree, the New Zealand Tree Broom is well worth the attention of horticulturists, who, once they recognise its merits, may be the means of preserving a unique and rare plant, whose possible extinction even during this century is by no means an impossibility in its native habitats, through the agency of browsing animals and fire. In some cases the growth of a sward of introduced grasses also militates against the germination of the seed. Several large trees in the Jordan Valley were dead and others had fallen over due to recent undermining of the bank by the stream in periods of flood.

Thus it is clear that positive measures to secure permanent preservation are vitally necessary. At the present time comparatively few plants have found their way into cultivation, but once it is better known *Chordospartium Stevensoni* may well become as common as it deserves to be. The writer recently saw some fine nursery stock in the gardens of Messrs Duncan and Davies of New Plymouth and doubtless other nurserymen may have stocks also but hitherto few horticulturists seem to have known of New Zealand's Tree Broom.

LILIES

By F. J. SILANKS.

The intrinsic merit of the lily and its claims on our consideration as a valuable garden plant rest on a quite secure foundation. There are three fundamental qualities in flowers, viz., colour, form and perfume. Whilst quite a number of lilies have no scent, all the species in cultivation possess, in a marked degree, the other two essential attributes of the perfect flower. In some of the species the scent is not the least of the flower's charm, but *L. pyrenaicum* has an especially objectionable smell which, particularly in the evening, is diffused over a considerable portion of the garden from even a small clump of flowering plants.

It is perhaps another tribute to the true lilies that their name has been conferred on so many flowers which have no claim in botanical fact to that distinction. The following instances may be quoted:

Day lily:	<i>Hemerocallis</i>
Belladonna lily:	<i>Amaryllis belladonna</i>
Plantain lily:	<i>Funkia</i>
Spider lily:	<i>Nerine</i> species
Chatham Islands lily:	<i>Myosotidium hortensia</i>
Peruvian lily:	<i>Alstroemeria</i>
St. Bruno's lily:	<i>Anthericum</i>
Arum lily:	<i>Calla</i> or <i>Richardia</i>
Torch lily:	<i>Tritoma</i>
Bugle lily:	<i>Watsonia</i>
Lily of the Field:	<i>Sternbergia</i>

None of the above flowers has the slightest claim, other than that of a somewhat poetic imagination and perhaps a desire to do honour to the plants concerned, to be called a lily. Our "cabbage tree," *Cordyline australis*, has a much better claim to be called a lily as it belongs to the great botanical family of the Liliaceae. Several of the fritillarias are also known as lilies but with more justification, as they are near relatives of the true lilies. As a matter of fact, one species of fritillaria so closely resembles lilies that botanical experts in the Old Country have not yet agreed on its proper classification.

CULTIVATION.

The lily bulb consists of a series of fleshy scales arranged more or less loosely, according to the species, and in this respect the lily differs materially from all other bulbous plants with the exception of several of the Western American fritillarias and of the newly discovered *Nomocharis* introduced from China within the last ten years. In all the lily species, roots are freely produced from the base of the bulbs as in other bulbous plants but, in certain lilies, roots are also produced from the stem of the plant, just at the point where it emerges from the apex of the bulb. These stem roots have an important bearing on the well-being of the current year's stem and flowers of the plant.

Briefly, for preliminary cultural purposes, lilies may be divided into two classes—base rooting and stem rooting—and, in the former category, are included most of the lilies that require a minimum of attention and little, if any, special skill in cultivation. Many of the stem-rooting varieties, however, also possess these amiable qualities, and these will be mentioned later on. It is important to remember that the basal roots of all lilies grow continuously and thus, at no season of the year, is the bulb really dormant. In effect, this means that the roots as well as the scales of lily bulbs deteriorate rapidly under drying influences when the bulbs are lifted. When transplanting lilies, therefore, see that they are replanted the same day and, if possible, the same hour as they are lifted. When purchasing these bulbs, those that are in any way dried or shrivelled should be avoided. By observing these simple precautions, checks in growth and possible complete failures are minimized.

As regards the soil and situation for lilies in the garden, it is well to remember that, with not more than six exceptions, all the species of *Lilium* are natives of the temperate zones of the Northern Hemisphere, that almost without exception they are found in high and even sub-alpine country and that all of them grow naturally in close association with grasses and shrubs. The factor of altitude secures almost automatically the perfect drainage that is essential to their well-being, whilst an atmosphere, containing an appreciable degree of moisture and some shade afforded by passing clouds, is also secured in their mountain habitat to those species that specially require these conditions. These last mentioned, however, are not among the most easily cultivated species and, at best, we can only do our utmost to reproduce in our gardens the conditions natural to them.

In preparing the soil for lilies, we should bear in mind their natural associations where they have the advantage of an annual mulch from fallen leaves and the decayed growths of grasses that are, in the main, uneropped by herbivorous animals. Sharp drainage and deep digging are essential and, if the soil is a good dark loam, no further preparation is necessary to grow successfully most of the well-known species. I am of opinion that manure in any form, organic or chemical, should not be used in the cultivation of lilies. In sandy or clayey soils, the addition of well-rotted turf and leaf mould, to be dug in a few weeks before planting time, is recommended. The presence of stones in the soil is not a disadvantage as these assist drainage. An open situation suits many lilies and, with very few exception, they appreciate a position which enables them to send their stems and flowers up into the sunlight while their roots are kept cool by a ground covering of either low-growing shrubs, herbaceous perennials or even annual flowering plants. Azaleas, andromedas and dwarf rhododendrons are suitable plants for associating with most of the American lilies—*pardalinum*, *Humboldtii*, *Parryi*, *canadense*, *parvum*, *Grayi* and *superbum*—while any small shrubs whose root systems are not too vigorous will serve for

other lilies. Evergreen shrubs have the additional advantage of maintaining the interest in the borders in the winter months while the lilies are sleeping. For a sunny border, the dwarf brooms and the many species and varieties of the cistuses or rock roses are suitable, while the shrubby helianthemums, the dwarf daphnes, *Mezereum* and *Cneorum*, and *ceratostigma Wilmottiae* may all be pressed into service. *Antirrhinums* are useful, but, if hardy annuals are depended upon for the purpose, it is better to sow the seed in the autumn so that growth will be well advanced in the spring. The possibilities of effective associations of other flowering plants with lilies for the purpose of securing colour harmonies and contrasts are almost unlimited, but it is suggested that anyone possessing a well grown and healthy clump of *lilium candidum* should plant near it several roots of any pale blue delphinium, d. belladonna for preference, especially if a background of green leaves is available.

Opinions differ as to the best time for planting lilies, but it seems to be generally conceded that the autumn is the best season for the purpose. *Lilium candidum* must be planted before the middle of February to do well as it has only a few weeks' respite from leaf bearing. In the writer's experience all lilies should be transplanted at the earliest possible date after the foliage turns yellow to minimize the check to the bulbs and to ensure good growth for the following season. Lilies should not be moved until it is absolutely necessary on account of over-crowding, and even then some of the original clump should be left undisturbed. Sand under and around the bulb serves a useful dual purpose in preventing moisture and slugs from damaging the bulb. The ground should be watered thoroughly when planting is finished and care should be taken not to damage the roots when lifting or replanting. It is a generally accepted practice in bulb planting that the bulb should be covered with approximately its own diameter of soil. Base rooting lilies should have this proportion at least doubled; thus a lily bulb of a diameter of two inches should have not less than four inches of soil above the apex of the bulb. The stem rooting lilies require to be planted at least double the depth mentioned. The two following base rooting lilies are exceptions to the suggestions already mentioned: *Lilium candidum* requires not more than one inch of soil above the bulb, and with *Lilium giganteum* the top of the bulb requires to be level with the surface of the soil. Deeper planting of the latter lily will delay the flowering until the bulb can push itself up to the surface.

The following is a brief description of twenty of the most suitable lilies for garden cultivation:—

- | | |
|------------------------|---|
| <i>Candidum</i> : | the old white Madonna lily: warm, fairly dry place; shallow planting. |
| <i>Chalcedonicum</i> : | the scarlet Turk's cap lily: same situation as <i>l. candidum</i> . |

Croceum :	the orange lily : open position.
Davidi :	a refined tiger lily of easy culture : open position.
Testaceum :	Nankeen yellow, possibly the most beautiful of all lilies ; open position.
Hansonii :	distinct, thick petalled, reflexed flowers, yellow spotted black.
Henryi :	very easily grown ; orange reflexed flowers after style of <i>l. speciosum</i> .
Longiflorum :	white trumpet-shaped lily ; easily grown in open situation ; many varieties.
Martagon :	the old purple Turk's cap lily ; easily grown. The white form is a very beautiful plant.
Monadelphum szovitzianum :	easily the best yellow lily ; sweet scented, turban shaped flowers, early flowering.
Pardalinum :	the easiest grown American lily ; scarlet and yellow ; moist position in full sun.
Philippinense formosanum :	one of the best garden lilies ; two forms—Price's variety, 2 feet, and Wilson's variety, 4 to 7 feet ; flowering January and March respectively.
Pomponium :	European lily, scarlet vermilion reflexed flowers, easy culture and probably more permanent than <i>lilium chalcedonicum</i> .
Pyrenaicum aureum :	small early flowering lily ; yellow, black spots, scarlet anthers ; lovely foliage ; worth while despite unpleasant smell.
Regale :	considered to be the best garden lily.
Sargentiae :	a taller and later regale ; longer trumpets and deeper external colouring.
Speciosum :	too well known to require description ; any of the forms are well worth while ; deep planting essential.
Umbellatum :	everybody's lily ; many varieties ; Golden Fleece is one of the most distinct.
Elegans :	similar to above but dwarfer ; variety <i>atro-sanguineum</i> one of the best coloured forms.
Willmottiae :	orange red reflexed flowers born gracefully on fine leafy stem ; easy culture.

Lilium Tigrinum, the well known tiger lily, may well be added to this list on account of its easy culture, late flowering and value for garden decoration. There are three forms, *splendens*, *fortunei* and the old double variety, all of which are thoroughly satisfactory plants.

The reason for not including *lilium auratum* in the above list is that in many gardens it is a somewhat disappointing plant. Where the natural soil suits it and, provided healthy bulbs are planted, this

lily thrives amazingly, but under other conditions many failures to hold the bulbs after their first or second flowering season have resulted in disappointment to gardeners.

The propagation of lilies is effected naturally by two and in the case of certain species by three methods, i.e., by seeds and offsets in all species and by bulbils produced naturally in the axils of the leaves in the case of the following four species—*L. bulbiferum*, *sargentiae*, *sulphureum* and all the varieties of *tigrinum*. The two following artificial means of propagation are also adopted:—by separating and planting the loose outside scales of the bulb and by wrenching out the stem of the lily when flowering and lightly covering the base of the stem with earth, thus inducing the formation of offsets underground. Offsets are produced at the base of the bulb of all base rooting species and at the apex of the bulb of all stem rooting species, although some of the last mentioned will also produce offsets underneath the bulb. They should be removed when the stem and leaves are turning yellow, by which time they will be about the size of a small marble, and planted in a nursery bed, giving about three inches of space each way between the small bulbs. Bulbils, where they occur, should be detached at the same season and treated in the same way. After remaining in the nursery bed for twelve months, the young bulbs can be removed to their permanent quarters, where many of them, according to species, will flower the following summer. The most interesting and also the most desirable method of propagation, however, is by means of seeds, for the reason that a much wider selection is available and that the cost is fractional as compared with the other methods. Moreover, there is a reasonable prospect of raising disease-free stocks if lilies are grown from seed, and this method effectively disposes of the problem of acclimatizing new lilies in New Zealand. It is important that the seeds be sown as soon as they are available as this has a direct bearing on the time taken in germination. Fresh seeds of *regale*, *formosanum*, *tenuifolium*, *longiflorum* variety *praecox* and *cernuum* will germinate in three to four weeks, and all of these species will flower within two years of sowing. Others take longer to germinate and flower, but the seed pan or box should not be discarded until the following spring if there is no appearance of the seedlings, as seeds have been known to lie dormant for nine to ten months and then to grow well. Some species, such as *auratum* and its varieties, *martagon* and its varieties, *monadelphum szovitzianum* and others, produce bulbs underground without vegetating, and, unless this fact is kept in mind, seed boxes containing many healthy young bulbs might be discarded. The seedlings should remain in the box for twelve months and may then be treated as recommended for offsets. The quicker growing varieties can, however, be pricked out as is done with annuals and then grown on and planted in their permanent quarters when their foliage dies down the first year. As all lily seeds are quite hardy, seeds can be sown in the open ground, but results are quicker by growing them in boxes.

To propagate by scales, a fairly deep box is required, say, six inches at least. It should be filled with good potting soil and drills should be drawn about an inch wide and a similar depth, two inches separating the drills. Sand should be sprinkled in the drills. The outside scales of a healthy lily bulb are then removed carefully and placed, concave side downwards, in the prepared drills, covered with good earth, moistened and placed in a shady part of the garden. This process is carried out just after the leaves commence to wither, and by the end of the same autumn examination of the scales will show that each has produced one to two small offsets. These can be removed and grown on as recommended previously. The open ground will serve the purpose for scale propagation of the stronger growing lilies. It is not necessary to disturb the old bulbs to secure a supply of scales as the earth can be removed carefully from an established clump and a few scales removed from each of the bulbs, which apparently have no objection to the operation.

Like all other plants, lilies are subject to diseases. Perhaps the most troublesome in New Zealand is known as *botrytis cinerea*, the disease which attacks *Lilium candidum* in a wet spring and which spreads to many other lilies if they are growing nearby. This disease, when present, manifests itself about October by small livid patches on the basal leaves of the plant. These patches spread fairly rapidly, and, if the damp weather conditions persist, are likely in a few weeks to affect the whole stem and leaf system and to prevent the plant from flowering. It may spread to other lily species in the vicinity and, although the bulbs remain undamaged, the season's flowers are lost. Treatment consists of dusting the affected leaves with flowers of sulphur or spraying with a solution of potassium sulphide, half-ounce to each gallon of water, as soon as the patches appear. If the trouble has progressed too far, the stems should be cut off and burned and the bulbs should be taken up in the early autumn, liberally dusted with sulphur and replanted in another part of the garden. It is a wise precaution, however, to plant *Lilium candidum* bulbs as far away from other lilies as possible.

Lilies require regular watering during active growth, and, as with other tall growing plants, attention must be given to staking. When growth is completed in the autumn, the dead stems should be cut off. A mulch of fallen leaves, kept in place by a slight sprinkling of soil or sand, is of considerable advantage.



GEORGE A. GREEN.

GEORGE A. GREEN

Mr. George A. Green, Dominion Organizer of the New Zealand Institute of Horticulture, died at Auckland on the 27th September, 1935, in his sixty-eighth year.

At an early age, Mr. Green took up nursery work with his father and in 1897, with Mr. Francis Bennett, he founded the nursery firm of Bennett and Green. About 32 years ago, he assisted in the initiation of the New Zealand Association of Nurserymen, now known as the Horticultural Trades' Association of which he was Dominion Secretary and Organizer until the date of his death. Through his connection with nurserymen, he had unique opportunity, when travelling, of meeting horticulturists and finally assisted mainly in the formation of the New Zealand Institute of Horticulture about 1923. His organization of the nurserymen and later of the seedsmen and florists into the Horticultural Trades' Association and of the New Zealand Institute of Horticulture are his two greatest monuments.

Mr. Green also took keen interest in citrus culture and published many valuable reports thereon, being closely in touch with the Department of Scientific and Industrial Research, the Auckland Citrus Committee of the Institute of Horticulture and its Test Area, the Auckland Citrus Association and all citrus growers throughout the North Island. He was also well known throughout Australia and California for his work with citrus.

The immense amount of energy and time expended by Mr. Green in obtaining exhibits for the various National Flower Shows will not soon be forgotten nor his wonderful displays of citrus trees, fruit, etc. at these shows. He will be sadly missed in Horticultural Week.

Of very likeable personality and great charm, Mr. Green had an abundant faith in his ideals and unlimited energy in enlisting the support of others in the direction of realising them. His loss is a severe blow to organized horticulture but he lived to see the fruition of his life work.

Mr. Green is survived by his widow, daughter and two sons.

THE LODER CUP COMPETITION.

The Loder Cup was formerly awarded annually to the winner of an open competition for New Zealand plants staged at specified Flower Shows arranged alternately under the auspices of the Horticultural Societies in the four centres. The competition was usually held at a National Flower Show in Horticultural Week.

The Cup was then awarded for the best collection of New Zealand plants grown by the exhibitor under bona fide garden conditions. The display could consist of either living plants growing in pots or tubs, or portions of plants taken from living specimens grown by the exhibitor. Competition in this form was continued over a number of years but the new Loder Cup Committee then decided that the intention of the donor of the Cup could be better met by an alteration in the conditions governing the award.

For the year 1934 the Cup was unanimously awarded to Viscount Bledisloe for his able advocacy of the preservation of our forests and indigenous wild life which has vastly helped in the care and perpetuation of our native bush.

A copy of a circular to interested bodies, scope of the competition and conditions of award are appended:—

Box 1237, Wellington.

8th July, 1935.

I have been directed by the Loder Cup Committee, a Committee established in Wellington by the Hon. Minister of Agriculture, of which he himself is Chairman, to communicate with you for the purpose of seeking the co-operation of your Society and its branches in giving effect to the conditions of the competition, general outlines of which are set out in the first enclosure.

The Cup was presented by Mr. Gerald W. Loder (now Lord Wakehurst), of Sussex, England, in the year 1926, to the lovers of nature in New Zealand as a challenge cup to be competed for annually in accordance with such conditions as may be approved by the Minister of Agriculture, in whose custody the Cup was placed.

The Cup was open to competition for several years under a scheme that was recognised to be far too restricted to give anything like full effect to what the donor had in mind.

In consequence of this a new scheme has been devised. Under this scheme, as indicated in the second enclosure, the Cup will be open to competition to the whole of New Zealand, and will be awarded to the person or organisation who or which, in the opinion of the Committee, has performed the most meritorious act during the year or whose work has culminated in that year in furthering the sentiments of the donor as inscribed on the Cup itself, namely " to encourage the protection and cultivation of the incomparable flora of the Dominion."

My Committee confidently anticipates securing the co-operation of your Society, and would appreciate a reply to this effect in due course.

G. NICOLL,
Hon. Secretary,
Loder Cup Committee.

CONDITIONS OF ANNUAL AWARD OF LODER CUP.

OBJECT OF AWARD.—The object of the award is to carry into effect the intention of the donor of the Loder Cup (Lord Wakehurst, formerly Mr. Gerald W. Loder), as expressed in the inscription on the Cup, which inscription is in the following terms: "Offered to lovers of nature in New Zealand to encourage the protection and cultivation of the incomparable flora of the Dominion."

ADMINISTRATION, CUSTODY AND AWARD OF CUP.—All matters relating to the administration, custody and award of the Cup shall be controlled by a Committee to be known as "The Loder Cup Committee" (hereinafter called "the Committee").

CONSTITUTION OF COMMITTEE AND TERM OF OFFICE.—The Committee shall consist of the Minister of Agriculture (who shall be the Chairman), and nine other members to be appointed by the Minister for a term of one year commencing from the 1st day of March in any year. Any member of the Committee shall be eligible for re-appointment and may at any time resign his office by writing addressed to the Minister.

DEPUTY CHAIRMAN.—At its first meeting in any year the Committee may elect one of its members to be Deputy Chairman for the ensuing twelve months.

NOMINATIONS FOR AWARD.—Any person, association, society, firm, company, local body or body of persons (whether corporate or unincorporate) may be nominated for the award by any of the following persons or bodies:—

- (a) The Royal Society of New Zealand, or any Society affiliated thereto;
- (b) The New Zealand Institute of Horticulture, or any Society affiliated thereto;
- (c) The New Zealand Forestry League, or any Society affiliated thereto;
- (d) The New Zealand University, or any Constituent College thereof;
- (e) Any private person through one of the above-mentioned Societies.

NOMINATION PARTICULARS.—Every nomination must be supported by a statement of the work accomplished by the nominee, together with any documentary or other corroborative evidence thought desirable by the nominators, and such statement shall be verified by the certificate of the nominator.

CLOSING DATE FOR NOMINATIONS.—Every nomination shall be transmitted direct to the Committee so as to be delivered to the Committee on or before the 30th day of November in any year.

AWARD OF CUP.—The Cup shall be awarded annually to the person or body of persons (whether corporate or unincorporate) who or which has been nominated for the award as hereinbefore provided, and who or which, in the opinion of the Committee, has excelled all other nominees in the year of the award in furthering the aims and objects of the donor of the Cup. (The Committee may refrain from making an award in any year if in its opinion the quality of the work of nominees does not justify the making of an award for that year.)

For the purpose of facilitating an award of the Cup in any year, the Committee may consult any person having special knowledge of particular aspects of the work of any nominee, and the decision of the Committee with respect to any award shall be final.

PUBLICATION OF RESULT OF AWARD.—The decision of the Committee with respect to every award shall be published as soon as practicable after the 30th November in any year, but not later than 31st March in the following year.

CERTIFICATE OF AWARD.—A Certificate of Award shall be issued to every person or body of persons (whether corporate or unincorporate) to whom or to which an award of the Cup is made in any year.

LOCATION OF CUP.—The Cup shall be exhibited annually at a place to be selected by the Committee, together with a complete list of all previous awards, and a statement of the particular merits of the work of the successful nominee in respect of the award for the current or last preceding year.

LODER CUP.

SCOPE OF COMPETITION.

The following is an extract from a report considered by the Committee in connection with the scheme finally adopted:—

“ In awarding the cup there should also be taken to full account, the nature and quality of the winner's work for that particular year and the extent of its influence on the highest objective, viz.: the greatest number of the people of the Dominion striving to protect and/or cultivate the native flora; therefore the conditions should be wide enough to embrace:—

1. The layman, who, knowing that a devastating blight was threatening some species, discovers and makes public, an effective specific or remedy.
2. The statesman who, by promoting legislation, reserves for all time, the native flora forming the watersheds of our rivers and streams.
3. The school teacher who has incited his scholars to establish the best school garden of native flora and who, by example and effective publicity, has thus induced other teachers to vie with him in his achievement.

4. The county engineer who has persuaded his local body to plant streets, parks or plantations.
5. The author of a book catching the popular mind and stimulating any phase of protection or cultivation of native flora.
6. President, secretary or organiser of any society which, by propaganda, enlists the people's interests and assistance.
7. The donor to the public of an area of native bush.
8. The person who, by organisation of his fellows, frees any reservation from deer, goats, pigs or other wild animals prejudicial to its welfare or existence.
9. The artist who, having painted and extensively exhibited the blooms of our flora, thereby stimulates the cultivation of such plants or trees.
10. The writer of fiction who produces a popular book and incidentally inculcates the care and cultivation of native flora.
11. The railway porters who, by planting station gardens with native plants, cause widespread interest and admiration.
12. The commercial artist who, by designing and circulating a striking poster, makes an effective appeal to the public to use care with fire in forests, etc.
13. The plant lover who gathers and distributes gratis the seeds or plants of any species of native flora.
14. The discoverer of some useful or ornamental plant, shrub or tree which will suppress economically, the growth and spread of noxious plants.
15. The originator of some idea which fires the childish mind with a love for native flora.
16. The sawmiller who demonstrates an economic method of milling the native timber, leaving the immature to provide future crops and restocking vacant places with native trees.
17. The forest lover who, by persuasion, induces the dedication to the public of a large number of plots of native flora.
18. The writer of a poem which inspires numbers of his fellows to become interested in the preservation or cultivation of native flora.
19. The nurseryman who, by practical experiments, demonstrates the economic or aesthetic value of native plants.
20. The person who demonstrates by planting in situ the largest area of native plants.
21. The afforestation company that plants the largest area in native trees.
22. The exhibitor who educates.
23. The writer or lecturer who advocates,
etc., etc.

The winner to be the person, firm, company, association, local body, etc., who, in the opinion of the Committee or its appointees, during that particular year, has, by word or deed, excelled all others in achieving the greatest results in the protection or cultivation of the peerless flora of New Zealand.

NATIONAL CONFERENCE ON HORTICULTURE.

The sixth National Conference on Horticulture will be held at Auckland commencing on Tuesday, 3rd March, 1936, the programme being as follows:—

Tuesday, 3rd March:—Annual Conference of the New Zealand Horticultural Trades' Association.

Wednesday, 4th March:—Annual Conference of the New Zealand Institute of Horticulture.

Banks Lecture at 8 p.m.—“A brief history of the Royal Horticultural Society” by Mr. T. Waugh, N.D.H. (N.Z.).

NOTE.—The Horticultural Seedsman's Association of New Zealand and the Association of Directors of Parks and Reserves will each arrange its own Conference.

Thursday, 5th March:—Official opening of National Flower Show at 2 p.m.

Friday, 6th March:—Continuation of National Flower Show.

Saturday, 7th March:—Final day of the National Flower Show taking the form of a Floral Fete.

NATIONAL FLOWER SHOW, 1936.

Arrangements in connection with the National Flower Show of 1936 to be held in Auckland on March 5th, 6th and 7th are well forward. By courtesy of the Auckland Racing Club, the Show will be held in the grounds and buildings of the Ellerslie Racecourse. It is doubtful if any more beautiful setting could be found in New Zealand and the Committee appointed is leaving no stone unturned to make this the largest show of its kind ever held in the Dominion. As dahlias will be at their best about this period in Auckland, it is confidently expected that the wonderful improvements made in these flowers will be amply demonstrated at this Show. Special classes have been included in the schedule for New Zealand raised dahlias and local raisers will have a wonderful opportunity of showing gardeners that it is quite possible for New Zealand to compete with the world in raising new dahlias.

The Schedule Committee has endeavoured to cater for every class of exhibitor and several novel classes have been included. Perhaps the one that will create the most interest is for a Bridal Suite of three Bouquets to be given to the first bride applying on the Monday previous to the Show.

On Saturday, 6th March, a Monster Floral Fete will be held and it has been agreed to hand over fifty per cent of the gate takings on this day to the Mayor of Auckland's Fund for the endowment of the Wilson Home for Crippled Children. Such a worthy object, it is felt, will interest everybody and the special Committee appointed will reward patrons with an excellent programme of exciting events.

To commemorate the first truly National Show to be held in Auckland, a special Souvenir Magazine is being printed containing no less than 45 specially written articles and the schedule for the show, and this will be on sale shortly for the sum of one shilling, truly wonderful value.

INSTITUTE NOTES.

JOURNAL.—Publication of this Journal has been delayed through the death, referred to elsewhere, of the Dominion Organiser, Mr. G. A. Green.

BLEDISLOE (FRUIT) CUP.—The competition for the Bledisloe Silver Challenge Cup, valued at fifty guineas, has been transferred from the Imperial Fruit Show, London to the Autumn Shows of the Horticultural Societies in the four centres, provided such shows are deemed "National Shows" so far as this competition is concerned and that the principal prize thereat shall be this Cup. As the Cup is at present in Otago, the first competition will be held at Dunedin at its Show in the first week in May. Thereafter the Competition will proceed in rotation northwards.

The competition is to be for a special class of two cases of apples packed and finished as though for export; the variety in competition to be selected by the Society holding the competition and only that variety is to be exhibited. The control of the Cup is vested in the New Zealand Fruit Export Control Board which has agreed, with the donor's consent, to hand it over to the Institute for the purposes of the foregoing competition.

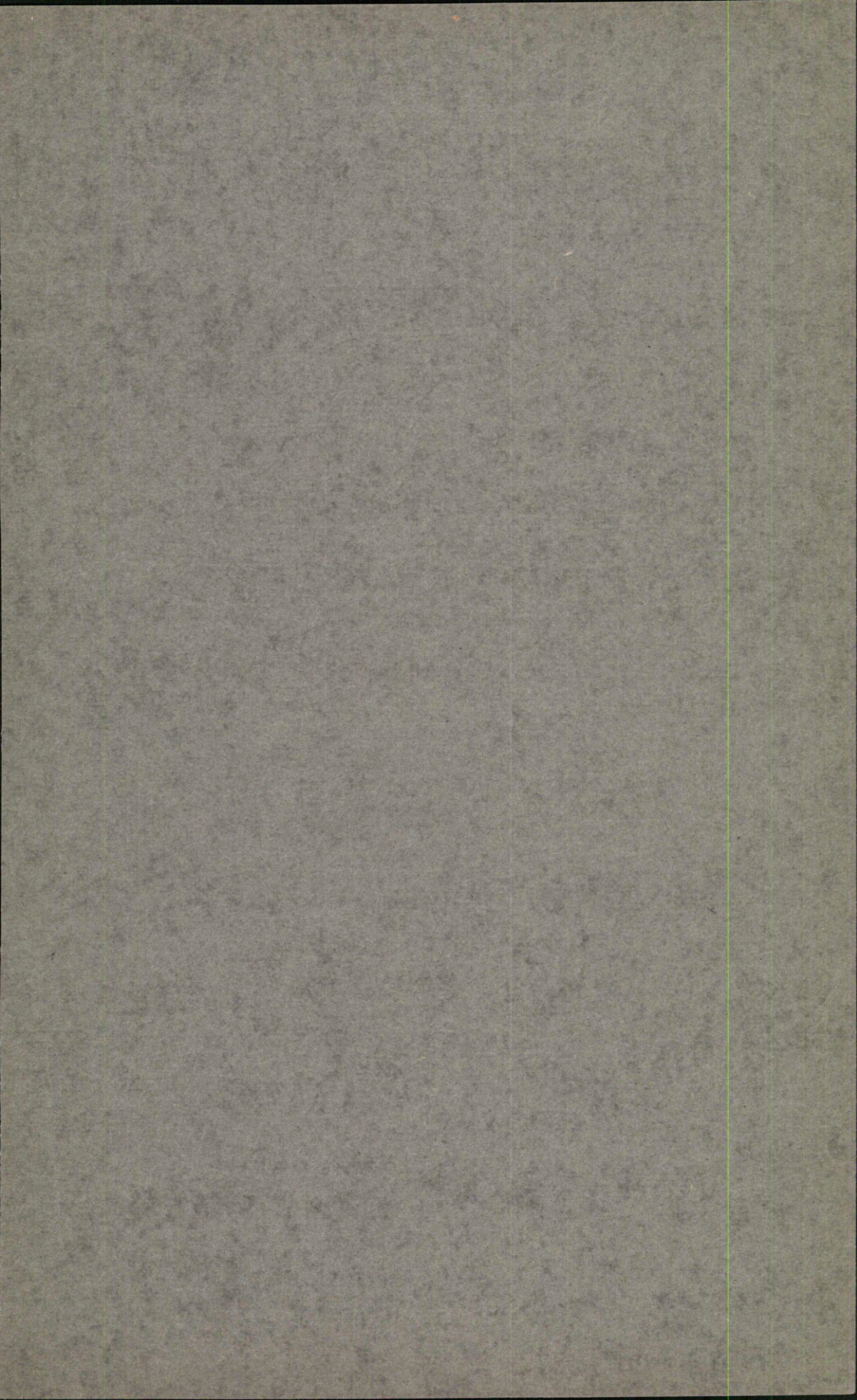
LODER CUP COMPETITION.—Nominations for the Loder Cup close on the 30th November. Conditions of the competition are published in this issue.

DISTRICT COUNCILS.—**AUCKLAND:** The address at the annual meeting was given by Dr. E. Marsden, D.Sc., O.B.E. on "The Work of the Plant Research Station." The Chairman of the District Council, Mr. G. F. Joseph, made an interesting report dealing with Citrus Survey, Test Area, National Flower Show and other activities. Miss E. F. Kibblewhite has been appointed Hon. Secretary vice Mr J. W. Kealy. **CANTERBURY:** Successful Field Days are reported to be the means of bringing members into closer touch besides providing enjoyable outings. **SOUTHLAND:** At the Annual meeting on the 17th September, an illustrated lecture "Kew—Mother Garden of Empire" was given by Mr B. P. Mansfield. Mr G. M. Broughton has resigned the Hon. Secretaryship and Mr B. F. Mansfield succeeds him.

EDUCATIONAL.—The Institute's 1935 Horticultural Examinations will be held on the 7th November and the number of candidates shows a gratifying increase. The candidates so far are mainly from the South Island, viz., Canterbury, Otago and Southland, where active educational programmes are being carried out with the assistance of the Parks and Reserves Superintendents. A deputation from

the Executive Council recently waited on the Reserves Committee of the Wellington City Council to urge the provision of greater facilities for the employment of horticultural students and was accorded a sympathetic hearing. It was admitted that the lack of sufficient glass and supporting houses prevents trainees from receiving the necessary experience at present. A deputation from the Wellington Horticultural Society, following on the Institute's deputation, urged the provision of a Winter Garden from a special fund held by the City Council as compensation for Reserves property acquired by the Railway Department. The matter is to come up again at the end of the year. Several applications have been considered by the Examining Board for Florists' and Seedsmen's Certificates and will be finally dealt with at the next meeting of the Executive Council.

DAFFODIL NOTES.—The National Daffodil Society of New Zealand held two most successful shows this season. The North Island Show was held in conjunction with the Wanganui Suburban Horticultural Society at the Drill Hall, Wanganui on the 12th and 13th September and the South Island Show in conjunction with the Dunedin Horticultural Society, at the Town Hall, Dunedin on the 2nd and 3rd October. During the course of this Show the annual meeting of the Society was held.



NEW ZEALAND INSTITUTE OF HORTICULTURE

(INCORPORATED.)

Patrons: Their Excellencies VISCOUNT GALWAY, Governor-General
and LADY GALWAY.

Vice-Patron: The Hon. the Minister of Agriculture.

President: F. J. NATHAN, Esq., Palmerston North.

Hon. Editor: Dr. W. R. B. OLIVER, Dominion Museum, Wellington.

Dominion Secretary: G. S. NICOLL, P.O. Box 1237, Wellington.

Hon. Secretaries of Local District Councils:

Auckland: Miss E. F. Kibblewhite, 4 Charlton Avenue, Mount Eden.
Hastings: W. M. H. Diamond, 617 Nelson Street.
Palmerston North: J. J. Stevenson, Boys' High School.
Canterbury: J. N. McLeod, 108 Paparua Street, Papanui, Chch.
Otago: C. Rhodes, 42 Princes Street, Dunedin.
Southland: B. P. Mansfield, Box 51, Invercargill.

Membership:

Individuals: 12/6 per annum (including Member's wife).
Juniors under age eighteen: 2/6 per annum.
Societies, Firms, etc., 21/- per annum.

Journal (quarterly):

To Members: Free.

Examinations:

Examinations are held yearly in November.

Students desiring examination should make early applica-
tion to

DOMINION SECRETARY,

N.Z. Institute of Horticulture,

P.O. Box 1237, Wellington.