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NEW ZEALAND PLANTS AND GARDENS

The Official Journal of the Royal New
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FLOWER SHOWS

The importance of flower shows can hardly be questioned. They may, quite legitimately, be described as the shop windows of horticulture. To understand this clearly we must know what is meant by a flower show and what is its function.

There is the small local show with its various competitive classes for fruit, flowers and vegetables which serves the admirable purpose of stimulating local prowess in cultivation but possesses little of interest for those not immediately concerned.

The larger shows that possess a much wider significance have more extensive functions. To be justified they must be designed to attract the public in general and the gardener in particular and the aim must be to stimulate a greater interest in horticulture in all its branches. Evidence of the advancements being made in plant breeding will be seen in the exhibits by specialist growers and this particular section of the horticultural trade is obviously taking its exhibiting seriously. Specialists in such genera as dahlias, gladioli, chrysanthemums and certain others take considerable care in the choice of the right kind of containers, blooms for display are selected carefully and the general aim is to provide a feast of colour to attract the visitors to a show and also to satisfy the craving of the keen gardener for 'something new.'

Whether it is desirable to encourage the staging of those large and spectacular displays one can see at Chelsea and Ghent is open to question. Exhibiting today is costly if it is to be done in a worthy fashion but, so long as it is supported by substantial stocks of the plants being displayed it may well prove to be one of the best means of advertisement, particularly if an exhibit contains a good representation of the worth while new plants that are being introduced year by year. The flower show undoubtedly offers one of the best means of publicising plant novelties and the actual sight of the living plant or flower must always have a superior value over the written word.

In New Zealand we are fortunate in having so wide a variation in climate that permits the cultivation of a great range of plants. This fact leaves no doubt as to the material being available to make our

national shows unique in themselves. But exhibiting should not be approached in any light-hearted manner and a careful study of Mr. S. Challenger's article that appears in this issue cannot fail to be of great assistance.

These notes have been penned purely from the outlook of a plantsman and in no way apply to floral art which occupies a plane of its own and already has reached a high standard in New Zealand.

—G. A. R. Phillips.

GASTERIAS

F. R. LONG, A.H., R.H.S. (South Africa).

The *Gasteria*, a genus of some forty to fifty species, is endemic to Southern Africa. Many species have been in cultivation in the gardens of Europe for a couple of hundred years and several of these are now unknown in South Africa. It is one of those succulent plants that take a lot of killing if left lying about, so, it is presumed, they made their way alive to the botanic gardens of Amsterdam, Kew and Paris by way of the sailing boats in the far off East Indian Company days. Like the *Haworthia*, *Stapelia* and *Aloe*, the originals or their progeny are still to be found in these gardens.

The *Gasteria* ('gaster' or belly describes the swollen flower tube before it contracts and splits up into the segments of the perianth) is one of the *Liliaceae*. It was at one time included in the *Aloe* as was the *Haworthia*. All the species are stemless or almost so, the leaves are most attractive having a marble like mottling in green, grey and almost blue, with spots and splashes of a contrasting but similar colouring. They are therefore always attractive for they are permanent, not in any way deciduous. Some have leaves smooth and shining, others are rough.

Some species are very dwarf as for instance *G. armstrongii*, not much bigger than a *Lithops*, others are 3ft. high (flower stems 4 to 5ft.) as in *G. croucheri*. Some have their leaves in a distichous or fan shape manner, others in attractive spiral whorls.

The flowers without exception are beautiful, very graceful in that the individual flowers hang and swing in the wind; they are attached to long peduncils or stalks, some of which are simple, others much branched.

The simple stalks as in *G. verrucosa*, now rare in the wild state, have as many as thirty flowers each, other inflorescences such as in *G. acinacifolia* or *G. croucheri* have very many flowers on each of the branches of the inflorescence is most attractive and ranges from almost scarlet as in *G. obtusifolia* to pink, pale pink, with green or white tips in some species. The flower stalks make delightful floral arrangements.

Habitat

I should put the main area in which the *Gasteria* is found as the Cape, from the coast to the Karroo and S.W. Africa but also in other provinces and in Rhodesia. They are found in well drained soil, fully exposed, sometimes on slopes, a few on the seashore. At times they are tucked away amongst low bushes but this may be for protection against animals trampling them out. They therefore make the ideal rockery plant. They last for years quite undisturbed and need little or no attention when once established. They stand dry heat and many are resistant to dry frost. Long dry periods without rain will induce flowers. In other words, do not coddle them! Most species make ideal pot plants for the verandah or sunny room, do not be afraid of leaving them pot bound for a year or so. *G. lilliputiana*, seen in the photograph growing in a tin, gives an idea of how to grow some species.

Cultivation

All species may be raised from seed, if obtainable. It is unusual to find them listed in the seedsmen's catalogues although there are one or two nurserymen in South Africa who specialise on this and other succulents. Seed of some may be had from the National Botanic Gardens, Kirstenbosch, Cape Town.

Seed should be sown in a coarse sandy mixture and as soon as germination is seen, do not over-shade them. Certain seedlings of some species will remain fan shaped (distichous) for the first year or so before developing into their normal spiral shape.

A few species succour freely and these side growths can be detached.

Most leaves can be cut and inserted at an angle in sand an inch or so deep and these will in time produce tiny plants (as in the case of some begonias and gloxinias) which of course may be detached and potted up.

In the North Island of New Zealand, I should say the *Gasteria* would make the ideal rock garden plant to say nothing of the pot plant for the verandah.

A Few Species Described

It is quite time some botanist made a revision of the genus. There are many anomalies due no doubt to there being many old plants without records growing in overseas collections. Mr. F. J. Stayner, formerly of Port Elizabeth and now Curator of the Karroo Gardens, Worcester, Cape Province, South Africa (a branch of Kirstenbosch Botanic Gardens), has been doing a lot of intensive collecting of the genus, making particular notes of the habitats and boundaries of the various species in the Cape. We hope he will soon put his findings in book form.

Let us now consider a few of the outstanding species. Beginning with the largest, *G. croucherii*, found on the sand dunes within 3 miles from where this article is being written, nestling in the lee of a bush and growing in pure fine sea sand with a little accumulation of leaf mould with plenty of lime. The flowers are pendulous, hanging on large side branches up to 4ft. in height. The leaves are evenly mottled green, angular and bold. A noble subject for any collection. Its habitat seems restricted as I have only found it on the shores of Algoa Bay, but it has been seen at Kromme River mouth, and on the coast near Plettenberg Bay to the west.

G. acinacifolia (Jacq) (needle leaved). Here is another of the large species. It is found in the valley of the Gamtoos River, also in bush land. This needle pointed leaf species runs to 2ft. or another 1 ft. when in flower.

At Hankey and the Klein River it is plentiful and can be found with *Aloe humulis* (L.) Haw and *Haworthia radula* (Jacq) Haw. What a delightful collection of succulents in their natural surroundings.

In the laterite hills overlooking the City of Port Elizabeth a species of fairly recent discovery is *G. stayneri* V.P. named by Dr. von Poellnitz after its discoverer F. J. Stayner. This species is quite a miniature, only 3 to 6 inches in height but with broad leaves as in *G. croucherii*. The seedlings are quite unlike the adult.

Another interesting species but coming from a place much further inland, in fact in the Karroo near Bruintjes Hoogte, is *G. planifolia*. The interest lies in the fact that some plants have leaves well mottled whilst others are quite plain without markings whatsoever, all collected in one spot. What is the cause of this strange variation? *G. planifolia* keeps rigidly to its distichous or fan like shape and is never spiral.

G. verrucosa (Mill) Haw is a suitable species for greenhouse cultivation. It is dwarf, densely suckers, leaves not more than 8 inches long and the flowers are in simple racemes, deep rose pink in colour. It is easily divided up when propagation is necessary.

Quite another shaped species is *G. obtusifolia* (Thunb) Berger or the tongue leaved *Gasteria*. This is found far to the west of Port Elizabeth, namely Oudtshoorn and further west. This species is always distichous.

G. nigricans Haw was found by Mr. Stayner at Springbokolakte and determined as the true species by Dr. von Poellnitz.

G. maculata var. *chamaegigas* V.P. is a delightful miniature species found near the mouth of the Sundays River on the way to Grahams-town.

G. beckeri Schoen seems to cling to the coast line. It is a rosulate, spiral species found on the Hills overlooking Hankey and recorded by Dr. Schoenland at Clumber (S. of Grahamstown) — the type locality. The inflorescence is a pretty branched raceme and the individual flowers a delicate pink shading to white, *G. nitida* being similar.

An interesting natural hybrid *G. armstrongii* x *G. beckeri* is found near to Jeffrey's Bay, namely midway between the two habitats of Gamtoos River Hills of the former and Hankey Hills of the latter. Generally speaking gasterias readily hybridize. Seed saved in Botanic Gardens or from collections therefore are most unreliable if the aim of the grower is to cultivate true species. Inter-generic hybrids of *Aloe*, *Gasteria* and *Haworthia* are not uncommon. It will be recalled that in pre Haworth's day, they were all grouped under the genus *Aloe*.

Aloe hybrids, both garden and natural, make fascinating collections. Many are very beautiful subjects.

It is quite time a revision of the genus *Gasteria* was published. Dr. von Poellnitz was busy in describing new species and varieties just before the war, to quote two, *G. herreana* V.P. and *G. longiana* V.P. but the work as far as I know has never been finalised.

Yes, *G. longiana* is a fairly newly discovered species and was named after the writer by the late Dr. von Poellnitz. It is an upright, pointed leaf species.

No succulent grower will ever regret accumulating the various species of *Gasteria*. They are charming both in the leaf as well as in the flower. To see a flower peeping out of the grass in the veldt always gives me a thrill.

My first introduction to a *Gasteria* when quite a small boy (but I did not know it as such) was in my dear old Aunt Rose's greenhouse in Lymington, near Southampton about the year 1898! But it never flowered. Probably it never received a long enough resting (drying) period.

THE FLORA OF THE THREE KINGS ISLANDS

Professor G. T. S. BAYLIS (University of Otago).

On the morning of January 4th, 1643, Abel Tasman's ships lay between a cape and an island both of which have since become familiar landmarks to seamen rounding the far north of New Zealand. To the cape he gave the name of Maria van Diemen in honour of the wife of his sponsor the Governor of the Dutch East India Company at Batavia, and the island he named Three Kings Island because he came to anchor there on the eve of Ephiphany. Later usage has extended Tasman's name to cover the small group of rocks and islands of which the original Three Kings Island, now called Great Island, is by far the largest.

The Three Kings Group was well known to the Maori whom Tasman found belligerently in possession, but the warning in the *New Zealand Pilot* that 'landing is always dangerous and uncertain' has had sufficient obvious truth in it to discourage most European visitors. Naturalists, however, have a special interest in remote

localities since they often harbour something rare or unique. Cheeseman in 1887 was the first to discover that these islands are sufficiently isolated from the North Island to have plants that are not found elsewhere. The six that he described seemed a remarkable total for less than 1,000 acres of land lying little more than 30 miles offshore. But subsequent exploration, and re-examination of the original collections, has brought the list of flowering plants and ferns peculiar to the Group to thirteen.

To discover the extent of the flora and the natural vegetation has been a difficult task since botanical evidence points to an intense exploitation of the islands by Maori settlers. This is not really surprising since the abundant fish and seabirds would have been a valued source of food, and distance and the vagaries of the Tasman sea would have served as a barrier against hostile invaders. The true vegetation has thus been revealed only by pockets of bush in places not easily reached. Of these by far the largest is the five acres of windswept forest that clings to the stony face of West Island. The enthusiasm and skill of amateur and professional seamen has thus played an essential part in exploring the islands, among them pre-eminently Major M. E. Johnson of Auckland and Mr. E. Beaver who has come to know the area well as a fishing ground.

Great Island has longest suffered the consequences of human interference because after the Maori settlers withdrew, which they did about 1840, the island was over-run by goats. These were descendants of a pair which the Marine Department landed to provide food for possible castaways. For this act the Internal Affairs Department made amends in 1946 by sending a party of cullers who with dogs and rifles accomplished the difficult task of hunting down every animal. The processes of plant succession which should some day restore Great Island's grass and teatree to mixed coastal forest were already under way in 1947. But several generations of trees must probably follow one another before there is an approach to the original balance of species, and some may never recover from the great reduction that has taken place in their numbers.

The regrowth of the vegetation of Great Island, however slow and imperfect it may be, will be an interesting process. Several plots have been marked upon which every plant is periodically mapped. Early changes have already made the island most attractive because the handsome large leaved puka (*Meryta sinclairii*), which is known elsewhere only from islands off Whangarei, is becoming plentiful, and black pongas and the robust blue-flowered *Colensoa* are abundant along the streams. On the islets flanking Great Island there have been no goats and the processes of succession are further advanced. Here there are pure stands of smooth trunked puka whose handsome crowns present a remarkable appearance even from the sea.

The plants peculiar to the Group are of two kinds — those that are similar to mainland species and are therefore probably recent in origin, and those that have no near relatives in the North Island, but seem to be survivors of a flora that has vanished therefrom. The Three Kings titoki (*Alectryon excelsum*), cabbage-tree (*Cordyline kaspar*), rangiora (*Brachyglottis arborescens*) veronica (*Hebe insularis*), karo (*Pittosporum fairchildii*), sedge (*Carex elingamita*), karamu (*Coprosma macrocarpa*) and perhaps even the matipo (*Rapanea dentata*) and milk-tree (*Paratrophis smithii*) have relationships with Northland species which are more or less obvious. But *Davillia tasmanii*, *Elingamita johnsonii*, *Tecomanthe speciosa* and *Plectomirtha baylisiana* do not on close inspection seem in any way familiar.

The *Davillia* is a creeping fern with a stiff finely dissected triangular frond. *Tecomanthe* is a large-leaved vigorous climber which is now beginning to become more widely known because of the skill and enthusiasm with which Mr. J. Hunter of the Plant Diseases Division in Auckland has propagated it. Its cream-coloured flowers are 2 to 3 inches in length and are followed by fat capsules full of winged seeds. The leaves of *Elingamita* or *Plectomirtha* might be mistaken for those of karaka but their flowers and fruits show them to be unique. *Elingamita* produces pinkish panicles followed by brilliant red berries. It is found only on West Island and was named to commemorate the intercolonial steamer 'Elingamite' which foundered against this island's sinister cliffs in 1902. The flowers and young fruit of *Plectomirtha* are greenish but what the fruit should ripen into is still a mystery. The flowers are hermaphrodite but like a pear or cherry they appear to be self sterile, and as only one tree survives cross pollination is not possible.

This *Plectomirtha* tree grows on a steep scree of boulders near the highest point of Great Island where its cliffs rise abruptly to nearly a thousand feet above the sea. This is not the sort of place where a kumera plantation would ever be contemplated or which readily carries a fire. Though the tree is less than 20 feet in height it is probably an ancient specimen since it has four slender trunks. These suggest that its real base has been buried, perhaps repeatedly, by movement of the boulders. As this is the sole representative not only of its species, but also of its genus, there can scarcely be a rarer plant on earth.

Tecomanthe also existed only as a single specimen until it was successfully propagated. This strongly growing liane had twined up tall kanuka trees out of the reach of goats. Since two of the most unusual of the Three Kings plants have thus escaped extinction only by the narrowest margin it seems likely that when the Maori first came to the islands there were other unique plants there which are now permanently lost. However, those that remain make the area one of outstanding botanical interest, and their conservation seems now to be assured.

THE NOISETTE ROSE

NANCY STEEN (*Auckland*).

When John Champneys, a lover of roses and a rice grower from South Carolina, decided to cross the Musk Rose, *Rosa moschata* from the Mediterranean area, with the perpetual-flowering 'Old Blush China,' a form of *Rosa indica*, little did he realise that he was starting an entirely new rose family, which was destined to add great charm and beauty to gardens all over the world. This group of climbing roses later became known as noisettes. A neighbour of John Champneys, Philip Noisette, a Charleston florist, was given cuttings of the first of these new roses which was to be called 'Champney's Pink Cluster.' About 1817, he sent seeds of this plant to his brother Louis in Paris, and, about a year later, another Charleston man, John Fraser, raised a new rose from the same cross, plants of which were sent to England about 1820, and distributed under the name of 'Fraser's Pink Musk.' Along with the first seeds sent to France, went a plant that had been raised by Philip Noisette — this proved to be of dwarfier form than the original cross, though it had the same large clusters of flowers and the strong musk scent. Redoute's fine painting of *Rosa noisettiana* gives an excellent idea of this plant. Like the Sweet Briar and the Dog Rose, this early form of *Rosa noisettiana* will climb if given the support of a tall hedge or trees. It is sometimes seen in old gardens and even by the roadside, where, if it is out in the open on top of a clay bank, the bush will be of moderate size, but, when found growing in association with scrub or native bush, there is no doubt of its ability to ramp about.

Roses from the seeds sent to Paris did not prove to be good parents, so plants of 'Champney's Pink Cluster' were introduced, and from these, the first hardy noisettes were raised. They were deliciously scented, the perfume of one parent, the Musk Rose, being particularly noticeable. The flowers are always produced in clusters at the ends of the branches and the laterals — as many as a hundred at a time being seen on one spray of the earliest varieties. There are generally seven leaflets to each leaf stalk. Noisettes are better than ramblers for clothing walls, as they make strong side growths; and they can also be used with decorative effect if trained through trees and allowed to develop freely. The flowers are pale in colour, ranging from white, through blush-pink, to yellow and apricot, these soft tonings showing up plainly against the fine, healthy foliage. They are vigorous roses, and stand up well to pests and disease; but, unfortunately, they do not set seed freely, so very little use has been made of them for breeding purposes in recent years. This means that most of the noisettes can be classed amongst the 'old roses.' A number are still listed in present-day catalogues and rank high as valuable garden plants.

As early as 1826, 'Champney's Pink Cluster' (1811) was crossed with the Yellow Tea Rose, and there evolved, gradually, a new race of

tea noisettes, which soon became famous. 'Desprez a Fleur Jaune,' 'Gloire de Dijon,' and later, 'Reve D'or' and 'Alister Stella Gray' were very hardy roses and would thrive in almost any position; but others, with more tea blood, were less vigorous and required to be planted in warm sunny surroundings if they were to succeed. 'Lamarque,' 'Cloth of Gold,' and 'Marechal Niel' were amongst this number — the last named only doing really well when grown under glass. All these tea-noisettes possessed much larger flowers which grew in smaller sprays than those of the true noisettes, though the blooms were still produced in great numbers. Old rose growers found that they did better when budded on to the hardy yellow Banksian rose, or on to another strong noisette, such as 'Solfaterre' or 'Gloire de Dijon,' so it would be interesting to see whether some of these roses would become more successful out here if budded on such stocks. Most of the fine old bushes of the large flowered noisettes in New Zealand have been grown on their own roots — a slow, but sure, way to do well with them; but present day plants on *multiflora* stock do not appear to be as vigorous as they should be. This has been our experience in Auckland; but in other parts of the country, they flourish abundantly, so it must be that our own growing of them has not been successful.

The following noisettes are still in cultivation today. First comes 'Champney's Pink Cluster' which has large clusters of small double soft pink flowers with a spicy perfume. This can be grown as a large, lax shrub or it will climb up into trees. It is a sweet rose, though not a spectacular one.

Next comes 'Aimee Vibert' or 'Bouquet de la Mariee' (1828). 'Champney's Pink Cluster' and a double form of *Rosa sempervirens* were the parents of this charming variety. This is a true noisette with extremely large clusters of small double white blooms, pink tinted in the bud. The almost evergreen foliage, an inheritance from *Rosa sempervirens*, is of a dark shiny green, each leaf being composed of seven leaflets. 'Aimee Vibert' is an excellent cut flower as the stems are fairly firm and the lovely flower sprays are out on the tips of the branches. The autumn flowering is particularly good but, like all this family, it is a rose that must be pruned sparingly if it is to bloom well. This versatile old rose can be trained up the wall of a house, or allowed to grow freely up through a tree. It can be used as a large shrub, made into a tall standard, or draped over a wire umbrella. A fine coloured illustration of it by Alfred Parsons, R.A. can be seen in Miss Willmott's book, *The Genus Rosa*; and Miss Gertrude Jekyll, a famous gardener, who wrote *Roses for English Gardens*, has included in her book, amongst a host of other illustrations, several very fine black and white photographs of 'Aimee Vibert' growing semi-wild through trees, clothing the walls of a house, and adorning pillars and archways. For a white border, this is a charming plant. The foliage is always fresh looking and the blooms appear for many months, even in the Auckland winter.

Mr. David Hay, who started the Mont Pellier Nursery in Auckland, brought cuttings of this rose from France in an interesting and novel manner. He packed them in dry moss in metal surveyor's tubes, and then sealed these hermetically. In this way, they survived the long sea voyage successfully. 'Lamarque,' 'Cloth of Gold,' 'Marechal Niel' and other French roses were amongst those he brought out in this way.

Mrs. Earle, in her *Potpourri from a Surrey Garden*, wrote that no garden was perfect without a 'Lamarque rose' in it. This rare, lovely noisette, 'General Lamarque,' was bred in France in 1830 by Marechal. It has a young fresh look, with its pale green leaves, and slightly pendant flowers clustered on the ends of the long swaying laterals. The slightly serrated petals of this white rose are lemon yellow at their base and the fragrance is clean and delicious. The blooms, several to each spray, are not up to exhibition standard; but their charm and decorative value are undeniable. Cannon Ellacombe wrote *In a Gloucestershire Garden* that, if he was limited to growing one white rose only, it would have to be 'Lamarque.' Though not generally seen in this country, there are delightful plants of it in several old gardens. Mr. David Hay's niece, Miss Clarke-Walker, of Whangarei, being one of those who grows and loves 'Lamarque,' another being Mr. E. Sage, of Ohaupo.

'Desprez a Fleur Jaune' (Desprez, 1835) is a gem of a rose with unusual colouring and a rich, fruity fragrance. It was bred from 'Champney's Pink Cluster,' and a yellow tea rose, and inherits its lovely soft tonings from the latter parent. A rapid grower, it throws out many laterals — the flower sprays appearing at the tips of these side branches. The individual blooms are flat and quartered, with a button eye — the shape being typical of so many old roses. Peach, apricot and soft yellows blend together to make an enchanting flower. This is a rare treasure and deserves a favoured spot on a warm wall.

'Madame Plantier' (Plantier, 1835) has been listed for years amongst the noisettes; but newer books appear to be in doubt as to which family it should belong. Some class it as an *alba x moschata*, others as Damask *x moschata*, while still others give it as noisette *x moschata*. Certainly it only flowers once, which is unlike the true noisettes; but many well-known writers of the last century, including Edward A. Bunyard, list it under that category. Whatever its ancestry, it is a glorious rose, healthy, non-thorny, with attractive soft lettuce green leaves, and pink-tinted buds, the beauty of which is enhanced by the long leafy calyx lobes. The clusters of medium-sized double white flowers have a green eye — the outer petals reflexing back in a most attractive manner. When the bush is in full bloom, the thin whippy branches are weighted over with the multitude of flowers. Given the support of a trellis or a tree, 'Madame Plantier' will climb and then cascade down in a graceful way. An illustration of this can be

seen in Mr. Graham Thomas' book, *The Old Shrub Roses*. This photograph was taken at Sissinghurst Castle in Kent. Although the rose is not perpetual flowering the blooms appear in profusion over a period of eight to ten weeks, filling the garden with scent, and admired by all who see them. 'Madame Plantier' is grown in many countries today and, out here, it is to be found by the roadside, in cemeteries and old gardens.

'Celine Forestier' (Trouillard 1842) is not so generally seen or known though it is an excellent plant, one of the hardiest of the tea-noisettes. The large full flowers are of a pale yellow with a deeper toned centre, but much lighter in colouring than 'Cloth of Gold' — the petals being folded and quartered in a delightful manner around a button eye. A rich fruity fragrance and fine foliage add to the beauty of this old rose. It will clothe a pillar or a wall, and Sacheverell Sitwell in *Old Garden Roses* describes it growing low along the ground and flowering profusely. A plant we saw in this country was doing equally well in this horizontal position.

'Solfaterre,' raised by Lamarque from 'Lamarque' in 1842, was another of the yellow tea-noisettes. This was used as a stock rose later for the more tender 'Marechal Niel' — a most interesting point. The full flowers were of the pale sulphur yellow so typical of the tea noisettes.

The next year, 1843, saw the introduction of a rose that came to be grown in many old New Zealand gardens, and that, even today, is well known throughout the rose world. 'Cloth of Gold,' or 'Chromatella,' was a seedling from 'Lamarque;' but, in colouring, it inherited more from the yellow tea rose than did its parent. M. Conquereau of Angers raised 'Cloth of Gold' and Thomas Rivers, an English rose grower, said of it 'fashion may change but beauty never.' He was responsible for its introduction into England. Given rich soil and a sunny position, this rose will cover a huge area, as it is long lived, particularly on its own roots. Unfortunately, present day plants do not appear to thrive as well as the old ones, nor show the same vigour so it would be interesting to see them budded on to different stocks as an experiment. In the meantime we have grown our own plant from a healthy cutting and it appears to be doing well. The flowers, of a golden yellow that pales with age, have stronger necks than many of the tea roses. Quite a few of our oldest gardens and settlements, all over the country, boast immense plants of 'Cloth of Gold,' some being nearly a hundred years old.

Most of the rose lovers of the last century who wrote about these plants, mention one rose that they felt they could not be without, and Dean Hole in his *A Book about Roses* was no exception. 'Gloire de Dijon' (Jacotot, 1853) was his particular choice. The fragrant blooms of buff yellow and salmon have a coppery-pink base and open rather flat when fully out. This rose will grow in a semi-shaded position and will stand more cold than most of its type. One plant we saw in the

South Island covered the side of a house and was a mass of flowers. 'Gloire de Dijon' makes plenty of lateral growth, and, if a plant becomes leggy and neglected, some branches can be cut back close to the ground when it will quickly refurnish itself once more. Given the support of a tree, it will climb through the branches to a considerable height, producing stems as thick as a man's arm. Being a prolific seed-bearer, it became the parent of many yellow toned roses.

'Marechal Niel' (Pradel, 1864) more closely resembled the true tea rose in the size of its flowers, its weak neck, and the number of blooms in a spray, than any of the other tea-noisettes; but, unfortunately, it was not hardy outdoors in colder climates and only showed its true worth in hotter areas or when grown under glass. One huge plant, grown in an English conservatory, and trained along the walls nearly horizontally, produced nearly a thousand blooms at a time, making a breath-taking picture. The large, globular deep sulphur yellow flowers are fragrant, but hang their heads, so it is advisable to grow the plants in such a way that the blooms are above eye level. Plants procurable today do not seem to do well, even in sunny Auckland, and we were reluctantly forced to discard our weakly plant. It has not been our privilege to see a really fine specimen of this famous rose 'Marechal Niel.' Rose growers of the last century suggested that it did better if budded on the strong growing yellow Banksian, or other tea-noisettes. Dr. Julius Hoffman in his *The Amateur Gardener's Rose Book* has fine colour plates of this and two other yellow tea-noisettes, 'Gloire de Dijon' and 'William Allen Richardson.' He suggested bending down the long stems, light pruning, and budding only from those shoots that flowered freely. 'Paul's Lemon Pillar,' a favourite climbing rose of today, is descended from 'Marechal Niel.'

'Reve d'Or' (Duchesse 1869), sometimes referred to as 'Golden Chain,' has smaller flowers than its parent 'Gloire de Dijon,' of a deep buff yellow in colour. These blooms come in small sprays which look well against the reddish green foliage. Being a rampant grower, well clothed with leaves towards the base, 'Reve d'Or' will quickly cover a wall or fence. As it resents pruning the most that need be done is to shorten any too vigorous summer shoots. The flowers, though not of exhibition standard, can be very effective in the right setting, and continue appearing quite late in the season, even in the South Island, where good specimens can be seen in old gardens.

Well known to older gardeners in New Zealand is 'Claire Jacquier' (Bernaix, 1888). This rose will climb or can be grown as a large free bush, with long arching branches. Some books list it as a *multiflora* hybrid and some as a noisette — its habit of flowering only in the summer, making it doubtful whether it is really a true noisette. However, the clusters of medium-sized nankeen yellow flowers, which pale as they age to a creamy buff, have definite noisette characteristics, so it may have a rather mixed parentage. Because of its shorter flowering season, it does not rank as high as some of the roses previously

mentioned, nor can it compete in beauty with the only other once-flowering noisette, 'Madame Plantier.'

A sport from 'Reve d'Or,' 'William Allen Richardson' (Ducher, 1879) has medium-sized deep orange yellow flowers that pale to cream at the edges of the uneven petals and are exquisite before they open fully. The foliage is good, and the flowers, when out, last well in water, especially if they are gathered in the half-open stage, before they become bleached by the sun. This is a strong, free flowering, long lived plant, which requires light pruning and which can be grown successfully in a fairly cool position in the garden. It is seldom seen today though fine specimens are to be found. A particularly free-flowering one is growing in an Auckland garden owned by Mr. J. Kealy, S.M.

'Madame Alfred Carriere' (Schwartz, 1879) is a very beautiful blush-white noisette. In *Book of Gardens* (pub. *House and Garden*) there is an excellent colour photograph of this rose taken at Sissinghurst Castle, where it covers a brick wall two stories high. The abundant flowers show up well against the soft green foliage and the mellow old brick of the building. Miss Gertrude Jekyll in her famous garden at Munstead, grew a hedge of 'Madame Alfred Carriere' from which she was able to cut long branches for the house. This is a delightful rose for indoor decoration as the flowers have an airy grace and last well when gathered. 'Madame Alfred Carriere' is one of the earliest roses to bloom in the garden as well as one of the latest, though only the main crop is really spectacular. We arch the branches over and bend them down, and treated in this way, flowers spring out along the stems on short laterals, making the display very effective. However, if the plant is left free, there will be fewer blooms; but the stems will be longer for cutting — a useful point to remember when growing the rose mainly for indoor decoration.

A much later addition to the noisette family is 'Alister Stella Gray' or the 'Golden Rambler' (Paul, 1894). This useful shrub rose takes care of itself and seems to survive, even when found in neglected old gardens. It blooms profusely for many months, and, in the autumn, the fresh young growth that springs up from the base of the plant, often produces spectacular heads of its small greenish-yellow flowers. These are flat with tight inner petals that surround a tiny eye. Though the colour pales with age, the scent is always rich and spicy, and the buds are exquisite. If a hardy rose is required for covering old stumps or unsightly corners, this is the plant to use as it has fine healthy foliage, is a strong grower, and flowers profusely.

No new noisettes have been bred in recent years though some of the hybrid musks approach them in type, particularly such ones as 'Moonlight,' 'Prosperity' and 'Penelope.' It is lucky for us that some of these incomparable 'old roses' are still being listed and there is no doubt of their ability to hold their own with many of the newer varieties, both as good garden plants and for sheer beauty.

STAGING LARGE HORTICULTURAL EXHIBITS

S. CHALLENGER (Lincoln College).

The New Zealand visitor to Britain is invariably impressed by the large and spectacular non-competitive groups he sees at flower shows. These large displays are usually staged by members of the horticultural trade, as a form of advertising. Certainly they draw the public in a way that the uniform ranks of competitive classes never do. In New Zealand, due to economic and other circumstances, trade displays do not assume the importance which they could, and co-operative displays organised by members of specialist societies provide the large exhibits in their place. These notes are written in an attempt to increase interest by the trade and others in large displays. Show work is a most satisfying occupation, and effective show pieces, well staged, can spread the gospel of horticulture besides helping to swell the finances of the society organising the show.

There are numerous types of exhibit and styles of staging. The usual type of exhibit seen is the display of cut flowers in vases or baskets. Dahlias, gladioli, chrysanthemums, perennials, etc., are readily handled this way. Vegetable displays are also staged in baskets and allied equipment. Potted plants may be displayed naturally, where the pot is hidden by being plunged in sawdust or a similar medium, or displayed formally, in bulk, when the effect of the individual plant is lost. Valuable pot plants, such as orchids, are staged with the individual pots wrapped in moss, producing a decorative but unobtrusive effect.

Trees and shrubs are usually treated as cut flowers, with branches staged in pots, but the best effect is produced — where time and money permit — by using balled plants. The exhibit then stays in good condition much longer. It is only a short step from the use of balled plants, though, to the natural type of exhibit which attempts to produce an 'established' effect. The landscaped gardens and rock gardens seen at Chelsea Flower Show are the supreme example of this type of exhibit, and certainly give no inkling that they were not there three weeks before! The cost, and the amount of labour involved varies very considerably, and the 'vase' display is much cheaper than the 'balled' exhibit, whilst the 'natural' exhibit, carried to the extreme, is the most costly of all, although by far the most effective.

The 'natural' exhibit is more easily carried out in a tent than a hall, since some excavating is normally required where pools and water courses are introduced into the design. If excavating is not allowed — the site may be in the centre of the local football pitch — then a natural looking exhibit is more difficult to produce. Large amounts of filling are required so that the water may still run to the lowest point in the exhibit, and ideas for containing the filling have to be worked out. Small 'natural' displays are easily produced on the floor, whilst rock garden plants, for example, are readily displayed in a table-level rock garden.

Vase displays are unsatisfactory unless staging is used. Tiered staging is widely used for the purpose, so that the back row plants are not hidden by those in front. The number of steps, their depths and heights have to be worked out to fit the circumstances. Proportions depend on the width of the staging. A 3 feet staging which is to be viewed from both sides can rarely carry more than one 1 foot step, whilst a 6 feet staging, to be viewed from one side only, could carry four 1 foot steps if the lowest bench is not too high. Much depends on the number of vases and type of flower to be shown. Daffodils, for example, could be well displayed on 6 inch wide steps 6 inches deep, whilst perennials would require much wider and somewhat deeper steps. The lowest bench is usually $2\frac{1}{2}$ feet, but where the back step is to be high, say 5 or 6 feet, then a 2 ft. bench is necessary to avoid a 'leggy' appearance.

A form of staging seldom seen in New Zealand is the upright style, a most useful way of utilising backwall space with a minimum of floor requirement. The back wall is fitted with either a wirenetting screen or else a series of wooden uprights. The flower containers (usually cone shaped metal receptacles) are fixed to the screen or uprights with stout wire, giving as much clearance from the back wall as possible. The flowers are then staged from top to bottom, a horizontal row at a time. If the backwall or supports are not completely obscured by the flowers then draping may be carried out after each row is put up. For dahlias, chrysanthemum, and similar flowers this is an excellent method since it provides a backdrop which can be taken up to 8 or 9 feet high, in front of which a 3 or 4 feet wide border may be arranged. A minimum of floor space is required, and yet the display is visible at a distance by virtue of its height. The height of an exhibit depends upon the numbers expected to attend. If there is any possibility of a crush, then tall exhibits are more easily seen over the heads in front.

Most people prefer wall exhibits, which are more easily staged, but island displays are very useful. A 20ft. x 4ft. wall exhibit, with only 20ft. frontage cannot provide the attraction of a 20ft. by 6ft. island exhibit which has 52 feet of frontage. Where wall displays have to be carried out owing to the nature of the material being staged, then bow fronts or similar methods of breaking a straight front line are very useful, although they do involve a little extra carpentry.

Island exhibits may be flat or tiered according to preference. In general, a tiered exhibit is not quite so attractive, since it loses the spaciousness of a flat exhibit of equal size; nevertheless there are certain types of material for which it is necessary. Where contrasting forms of plant material are being used — perhaps pot plants, with cut flowers and balled shrubs — then a segment of each on a tiered island is better than a hotch potch on the flat. If growers' produce is being displayed in boxes packed for market, then a slope is best to show it off. Island displays using flat benching need not be monotonously flat, although slim metal stands placed on the central line and

at corners can lift individual arrangements, giving height to the display as a whole.

Early arrangements with the show secretary are essential, when space is booked, the type of site arranged, and details of a similar nature cleared up. Some shows may make a charge for space, based on the frontage; others go to the other extreme, offering benchwork without charge, and erecting it for the exhibitor. An intermediate method is intended as an incentive to the exhibitor. The exhibitor has to provide his own benchwork, but the show gives a cash award to defray costs, the award being dependent upon the medal awarded to the finished display. The higher the medal, the greater the cash award.

Tools and equipment depend upon the type of exhibit to be staged. Certain tools are required on every occasion and it is wise to make a small chest to carry these and other oddments. A saw, hammer and nails are essential, whilst tape measure, pincers, chisel, mallet, screw-driver, screws and knife will all be used at some time or another. A stapling gun is preferable to drawing pins for fixing backcloth. String, floral wire, syringe and hose will all be required for staging or refreshing exhibits, and label pins for fixing name cards.

The illustrations show some of the equipment required for staging vegetables. Round baskets, varying from 6 to 18 inches in diameter may have flat bases, rounded bases, or be higher at the back than the front. Oval and square baskets, with or without handles are available in similar styles. Different colours — green, purple, brown or neutral cane — may be used for colour blending or contrasting with the contents. Wire cones of different styles are invaluable. Pointed cones from 1 to 4 feet high, or cones with rounded apices, and cylindrical frames with rounded tops all find their place. Hardboard bases are essential to support these, although they may be also used in round baskets. Triangles, $1\frac{1}{2}$ ft. or 2ft. across, with six spikes are required to display cabbage or cauliflower, whilst round bases 12 to 14 inches in diameter also equipped with spikes are essential to show celery, spinach beet, silver beet and leeks to perfection. A central iron holds the stems erect whilst the foliage is tightly tied to give a pyramidal effect and be partially self supporting. Wooden blocks are necessary to lift individual dishes into prominence, and telescopic metal stands are also used on more elaborate displays. Solid blocks 3in. x 3in. x 5in. and hollow blocks made of $\frac{3}{4}$ in. timber, 5in. x 5in. x 5in., 5in. x 5in. x 7in., 7in. x 7in. x 7in. and 7in. x 7in. x 9in. provide 'lifts' varying from 3in. to 9in. They nest readily and can be carried to the show in a small compass.

Vases may be metal or glazed earthenware, but the base should be sufficiently wide to prevent tipping with a heavy load. A series of sizes are required from 6 to 12in. or more in height. Squat, wide mouth types are essential for decorative displays. Buying vases is an expensive occupation, and if the full quantity cannot be purchased at

once, then some assurance should be obtained from the supplier that an identical repeat will be available. Mixed vases are not desirable.

Back cloth is important. Its function is to enhance the exhibit, not merely to disguise the bush carpentry embodied in the staging. Black cloth is commonly used, since it is unobtrusive, but other colours may be desirable to tone with floral displays. Other colours may be essential if the exhibiting hall is dark. Black Italian cloth is excellent and moderate in price, whilst green cloth makes a useful contrast for front drapes, etc. Black and coloured velvets make a beautiful finish for floral displays, although they are very expensive. Paper may be used, but it is very liable to tear and the colours to run if water is upset. Between shows the backcloth should be laundered; the best exhibit is labouring under a disadvantage if staged upon a dirty backcloth.

Adequate planning is required for a good display. With certain types of exhibit planning should start at least a year ahead to give sufficient time for preparation. Plants have to be balled in the dormant season, sufficient quantities propagated, and maybe unusual seeds obtained. Early plans need not be detailed, but enough consideration is required to avoid missing items that must be handled early. Detailed drawings of how the exhibit is to be staged are totally unnecessary. Even if you make them they will be abandoned at the show in favour of decisions made on the spot. A sketch will certainly clear your mind about tackling the job, particularly if you haven't done it before, but can be only a guide. One veteran exhibitor I know, who had shown at Chelsea for many years, used to work out a rough sketch of his design only a few days before the show; but he made sure his plants were balled sufficiently early and his bulbs potted up in time!

The quantity of materials required has to be known reasonably accurately, even when the initial preparations are being made. It is wiser to prepare too much material than too little, and in any case everything prepared will not be ready for show on the day. Quantities can be worked out from the size of the exhibit, although there are lots of snags which enter into your calculations. A 'natural' exhibit staged by Lincoln College recently required 750 plants for an area 60ft. x 25ft. These plants were quite large, but in a small rock garden, 48 sq. ft. in area, where practically all the plants used were in 4in. pots 150 plants were needed — six times as many for the same area. Vegetable exhibits require roughly about 2 square feet per dish, but even this estimate could be grossly inaccurate if different baskets and staging gear were used.

Plants which have been balled are much better for 'natural' exhibits than tubbed ones, since their shallower roots require less filling for covering. Balling should be done in the winter. Some conifers may be lifted satisfactorily in the growing season if first well soaked, but deciduous plants will not tolerate this treatment. Balling for show-

ing is done with wire-netting and moss, not scrim. The moss is spread on the wire-netting and the plant placed on it with the required amount of soil. Further moss is then placed on top of the soil or root ball, and the wire-netting tightly laced up. Plants prepared this way can be carried over at least two seasons if plunged in sawdust between shows. Roots may grow through, into the sawdust, but will come to no harm if a sheet of plastic is wrapped round the ball when lifted.

Early and late seasons can play havoc with the best of plans, but if forcing and retarding facilities are available, then much of the worry on this score can be avoided. For holding plants in satisfactory condition shade and cool conditions are a great help — removing plants to the shade house at the right stage can put a week to ten days on their flowering life. Alternatively, moderate forcing in a glasshouse can hasten the commencement of flowering. Long term holding can be done with cold stores and I have held potted lilies in full flower for three weeks at 34° F. and still had a satisfactory staging life from them. Some experience in handling the plants is normally desirable — there is nothing more annoying than holding a plant too long and then having to finish up forcing like mad the day before the show!

Balled and potted plants should have dead flowers and leaves picked off, and all be given a thorough soak just before loading for the show. They may have to stand three or four days in trying conditions with only a syringe over to keep them fresh.

Root vegetables must be washed with a soft sponge as soon as lifted, and kept on moist sack until packed. With parsnips grown in bore holes it is essential that they be kept moist or splitting will almost certainly result. If a really big exhibit is planned then roots such as carrot should be lifted late — they tend to produce root hairs if held moist too long. Trimming off the extra roots after lifting is essential of course. Peas should be handled only by the stem, not the pod, or the 'bloom' will be lost. This detailed type of attention is essential with many vegetables. Potatoes and parsnips, for example, must be covered as soon as washed or the whiteness of skin will soon be lost. Even when staged, these vegetables, and cauliflower too, should be covered with paper until the show actually opens.

Much time — and bad language — will be saved if good, well matched specimens only are actually taken to the show. It is a waste of time to take anything which cannot be used. Quantities will depend on the size of the baskets or containers used. An 18 inch. cone of tomatoes, for example, will require a full 12 lbs. of fruit, whilst a large basket of onions may require 70 - 80 good specimens. Experience is the best guide in this matter.

Flowers require thorough watering after cutting and before packing. Some, such as gladioli, may be packed dry and allowed to recover in water at the show, but this is anathema to most flowers. Lupins, which have an over-powering tendency to become twisted on the slightest excuse, must be packed upright with several spikes tied together.

Firm packing of all produce is essential for transport. More damage will be done by branches whipping back and forth than by firm contact. Vegetables may be packed in tea chests or bushel boxes. A label tacked to the outside of each box showing the contents will save much searching. Pot plants are best packed into trays, with paper wedged between the pots to avoid rattles. Deep boxes will be required if sent by any other means than door to door transport. Balled plants are also best handled by road transport, and plants stood ball upon ball will require little space. It seems brutal, but even azaleas in full bloom may be safely transported this way if carefully packed with ties across the truck.

Staging must be carried out systematically, with first things coming first. If a big 'natural' display is being staged backgrounds are erected first, and then the general outline of the scheme laid out with rope or hose. Excavations are done, filling brought in and major trees placed. Not until then is the bulk of the planting material required. If these preliminaries are done out of order chaos will result. Labour can also be wasted, by not keeping planting material off areas to be planted until the actual plunging is carried out. Sawdust is the best material for plunging — it is light, cheap, and usually readily available. The colour can be easily hidden later with a top dressing of other materials.

The essence of a 'natural' exhibit is in its trueness to life. Water courses should flow naturally and not be found on the top of a hill; rock gardens should not contain forest trees — even if they are seedlings; plants must be used in the correct environments. A slight interference with flowering seasons, by forcing or holding is permissible artist's licence, but gross interference should be avoided. Non-public pathways in an exhibit should be usable, although I feel that 'perspective' pathways, which do not meet this requirement, are permissible to give the impression of spaciousness. In a large exhibit much of the detail is lost to the public if they are not allowed in, but access paths must be delineated by posts and rope. One-way paths avoid congestion and indeed the exhibit can be planned to give the best effect from one way only. Public paths should not be less than 6 feet wide, and their layout must avoid bottlenecks such as sharp bends, or the meeting of two streams of visitors. Sawdust for plunging has to have adequate depth, to disguise the pot or ball — these should not be seen — but where plants are to be plunged on the very edge of the sawdust some form of retaining is required. Logs 'carelessly' edging the path are an excellent device, or rocks, with turf inserts. Cut turf is also useful, sweeping down to the edge of the display. More formal displays could use brick or dry walling, with trailers over the edge.

When arranging plants the temptation to overcrowd should be strongly resisted. Plants lose their individuality when crushed together. Only when you want to produce a mat effect — heathers in a

rock garden — or a thicket — should you crowd. A similar fault is grading the sawdust or the plants plunged in it so that their tops are an even layer of foliage. Some plants should be lifted and given prominence to avoid the monotony which otherwise results. Cut flowers can be used in natural exhibits if the vases to contain them are carefully placed and completely plunged.

With exhibits arranged on staging the benching strength should be checked first. Vegetable exhibits, for example can be very heavy, and any insecurity could result in a heavy basket tipping and ruining everything. The individual baskets are best arranged on an adjacent trestle table and the finished dishes then placed in approximately their final positions on the benching. Backcloth can easily pick up bits of dirt and it is as well to avoid it this way.

Staging vegetables requires some experience to do well. Paradoxically, the simplest to do are the cones of tomatoes, peas, beans and carrots, which look the most difficult. The foundation equipment for this style are wire cones, filled with moss. The moss must be well moistened, rammed really tight, and then allowed to dry. Its function is merely to hold the wires which keep the vegetables in place. Wet moss will not hold wires sufficiently firm. Toothpicks are used for tomatoes. A toothpick is pushed into the calyx end of the fruit, and the other end is pushed into the moss. Work from the bottom up, putting ring upon ring, until one solitary tomato completes the cone. Peas and beans are fastened with 3 or 4 inch lengths of floral wire. One end is pushed through the stalk, the other into the cone. These also are erected in rings, but the upper rings partially cover the lower — like slates on a roof. Carrots are staged with thick wire about the thickness of bicycle spokes. One end is pushed into the crown and the carrot staged tip out, so that the finished job looks like an enraged hedgehog.

Baskets of potatoes, onions, etc., require filling materials for the centre of the baskets. Paper and wood wool may be used, but I personally prefer cabbage leaves. This holds floral wire far better. The basket is filled to the rim with leaves, and the first ring of potatoes staged with their rose ends over the basket lip. The centre is filled with leaves again, and a second, slightly smaller ring arranged, this time being anchored in place with floral wires thrust into the cabbage and into the lower ring of potatoes. The basket is then built ring upon ring until complete. Onions are very prone to slip out of position, and are anchored with floral wires slipped through the raffia tie with which the neck is tied down, and running across the basket to the onion at the back. By this method onions may be built with a 'bow-window' effect, in which the lower rings contain fewer onions than those higher up the basket.

The inexperienced members of a group are usually given the job of 'parsleying.' This is plugging all the gaps between the

vegetables with parsley, gently poked into place with a pencil. The difference which this operation makes to a dish has to be seen to be believed. The vegetables appear to be emerging from a bed of parsley, all staging materials being hidden. Some dishes are parsleyed first — a pea or bean cone is covered with parsley first, and runner beans displayed flat in a long basket are merely laid on a bed of parsley. Most vegetables are parsleyed after the dish is erected.

The most telling time in erecting a vegetable exhibit is arranging the dishes on the stand to produce the best effect. Vegetable displays are arranged with symmetrical balance — the left hand balancing the right. Shape and colour are important in arrangements. Reds, yellow, purples, greens, browns, pure whites are all balanced one against the other. No part has too much colour, none too little. Cones stand up here and there, erect celery and leeks ornament the back row, and long parsnips the front. Baskets with handles give a little lift and contrast, and blocks are used to give that extra emphasis to anything that needs it. The finished effect is as colourful as any flower display.

Flowers displayed in vases require wedging to show them to best advantage. Crumpled chicken wire is useful for heavy flowers, whilst moss is also commonly used. For some types of flower such as daffodils, cut rushes, packed lengthwise into the vase fairly tightly, are first class. They also have an advantage in saving precious time at the show, for vase plugging can be carried out at home.

The placing of plants, flowers or vegetables in an exhibit, and the overall colour scheme should be the responsibility of one person only. Too many cooks spoil the broth. Some people have a natural flair for tasteful display and this type of person should be given the job. He should act as a director only, not taking part in the actual placing or plunging. In placing vegetables, for example, one person will be on the staging, whilst the 'director' views the stage as a whole, and gives positioning instructions. Much time can be saved, and a better result obtained this way.

The labour required for staging can be most expensive commercially. The Lincoln College exhibit referred to earlier — a garden layout 60 ft. x 25 ft. — contained a 5 ton rock garden, a pool and waterfall, shrubs, lilies and herbaceous plants; and house plants staged on a patio. It required the equivalent of 30 days' labour for staging alone. Vegetable exhibits take roughly 1 to 1½ hours per dish for staging, and a large exhibit could contain 80 — 100 dishes. On the other hand, cut flower exhibits in vases can be arranged very quickly, and I have seen a 20 foot run of benching staged by two people in two hours.

Finishing touches make or mar an exhibit. Damp leaf mould scattered over sawdust gives an immediate 'finished' effect to a natural exhibit, whilst pea gravel is excellent for making paths. Cushion moss

laid evenly on the surface creates a beautiful effect in a woodland exhibit, but of course is not always available. Moss is also invaluable for filling the gaps between stones in a rock garden. Pathways or courtyard effects in paving are easily created by brushing sand between the stones. Tent poles can be a nuisance in a large display, but are better handled by being made inconspicuous than by being hidden. A bulky shrub hiding a tent pole draws attention to it; but a pole covered with bark or moss becomes part of the exhibit.

Labelling often adds a finesse to a formal exhibit. In vegetable displays every dish should be named, but in a garden display labels should preferably be avoided. Educational exhibits need very clear, concise labelling, arranged to tell a story, but in every case where labels are used they should be neat and uniform. It is a pity to spoil the ship for a ha'pennyworth of tar. Ropes of white cotton around the outside of an exhibit serve the dual purpose of framing it and preventing possible damage.

Fussy effects should very definitely be avoided. These effects are often produced by trying to put too much into a display; blank space is not wasted space if the exhibit is well balanced. In vegetable displays, for example, a common fault lies in cluttering the benching between the main dishes with odd vegetables. Trails of runner bean stems are draped across the back for effect — and spoil the exhibit as soon as they have wilted.

Once the show has opened, maintenance is still required. Watering where possible, or otherwise syringing over is essential, although it has to be done with care. The pollen on lilies, for example, will run and stain the bloom if the flowers are forcefully sprayed. Dead flowers and foliage are picked off, and labels straightened up. Sweeping up or raking around the stand is also required to gather the accumulation of debris dropped by visitors.

The depressing job of dismantling has always to be faced. Some plants or produce may be used again and must be handled carefully as a result. Much will sadly be wasted, but the public usually appreciates an opportunity to obtain this when the show closes. If it can be sold, so much the better. Cash obtained this way is often regarded as the 'perks' of the showmen who have spent long hours in achieving a creditable result.

Shows cannot be assessed on their immediate result. A good exhibit may be remembered for years, with unconscious good-will all the time for the firm or society staging it. Shows are expensive and exasperating, but they have no substitute. For increasing trade, obtaining publicity, or maintaining turnover when competition increases, showing is a first-class method.

TIGRIDIAS

DOUGLAS ELLIOTT (*New Plymouth*).

For some reason or other the tigridias that flower in my garden each summer are mostly admired by non-gardeners who appear quite spellbound by the brilliant colours and unusual shape of the blooms. They often ask if they are hard to grow or very rare as though there must be some simple reason why they have not seen them before.

But *Tigridia pavonia*, sometimes called Flower of Tigris, Day-lily, Flame Flower, Peacock Tiger Flower, Aztec Sacred Tiger Flower, or Jockey's Cap Lily, is not hard to grow nor is it at all a recent introduction. Certainly the individual flowers last only one day but so do those of Morning Glory and the other Day-lily (*Hemerocallis*). Altogether it is surprising that these beautiful plants are so comparatively uncommon.

A well-grown Tiger Flower is about 6 inches across and may be white, pale pink, crimson, scarlet, yellow or apricot. Being a member of the *Iris* family, it has the typical iris flower structure with three large more or less triangular petals or falls and three very much smaller ones, the standards. The centre of the flower is bowl-shaped and is its most distinctive feature, especially when it is spotted.

The leaves are like those of the gladiolus but thinner and more accordian-pleated.

You can grow your tigridias from seed or corms. Seed sown in the autumn or early spring sometimes blooms the following autumn. Treat the corms as you do those of the gladiolus, planting them 3 to 4 inches deep in good soil enriched with well-matured manure or compost. You can spread a complete fertiliser among the plants when they come up if you feel they need this extra stimulus; normally they don't.

Like most bulbs, tigridias look their best in clumps. In good soil they can be really close together. They will grow about 2 feet high. White flowers such as Shasta Daisies or white perennial phlox make a good foil for the exotic colours.

At the end of the season when the stems begin to die down, you can lift the corms and store them like *Gladioli*; but don't remove the roots or the cormlets. Or you can leave the plants permanently in the ground from year to year until they become overcrowded which they are likely to do in a few seasons as they increase very rapidly.

An enthusiastic grower tells me that in spite of the one-day life of each bloom, the Tiger Flower makes a very decorative cut flower. It may be kept open a bit longer by dipping the end of the stem in boiling water as soon as cut. If you cut in the late evening when the bud is showing colour, the flower will open in the house next morning. Let at least two leaves remain on the plant to feed the corm.

The Tiger Flower is a native of Mexico and Guatemala.

NATIONAL PARKS OF THE NORTH ISLAND

Professor L. W. McCASKILL (Christchurch).

New Zealand has been fortunate in that far-sighted administrators, particularly of the Department of Lands and Survey, set aside large areas of land of great scenic beauty, with the aim that they should be preserved for all time in their natural state for the enjoyment of the people. Since the establishment of the New Zealand Forest Service it, too, has given constant attention to the need for the preservation of our native forest resources in the interests of a future supply of timber and the conservation of soil and water. Of necessity the State Forests differ from the National Parks and Scenic Reserves in that the interests of the individual or of the group must be secondary to those of the people as a whole and full use by the public cannot be permitted. However, we have nine National Parks with a total area of nearly 4,500,000 acres and 967 Scenic Reserves of nearly 900,000 acres in which the principle of freedom of access applies. In the case of both the National Parks Act, 1952, and the Reserves and Domains Act, 1953, it is stipulated that subject to the important requirement that the areas shall as far as possible be kept in their natural state, the public shall have freedom of access.

It has generally been assumed that these parks and scenic reserves were safe for all time until the recent bitter controversies over Arahauri and Manapouri reminded us that the price of economic progress may be despoliation of scenic beauty, and that Government will, if it thinks fit, rescind Acts of Parliament. While still insisting that Government must have the final decision, Cabinet has bowed to public opinion to some extent in asking the National Parks Authority to set up a special committee on which the Departments of Works and State Electricity are represented. This committee, which is now functioning, is charged with the investigation at the planning stage of projects likely to affect reserves and parks. It will advise Cabinet of its views as to whether the projects should proceed or not and if it is decided they should proceed, on what methods should be adopted to reduce despoliation to a minimum. To ensure that scenic reserves receive equal consideration with national parks, the Minister of Lands has announced that in the present session he will seek legislative authority to place all scenic reserves under the administration of the National Parks Authority.

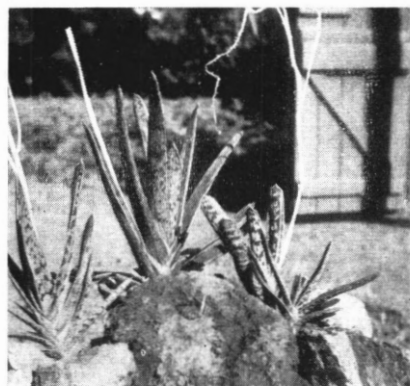
But no legislation, no Cabinet instructions, no deliberations and decisions of the special committee, can be effective in preserving scenery without the support and vigilance of informed public opinion. We must always remember the clarion call of the late Dr. Leonard Cockayne when he wrote in *New Zealand Plants and their Story*: 'The future of the glorious New Zealand plants and the beautiful primitive vegetation, lies not in the lap of the gods but in the good sense of us New Zealanders and in our love for our beautiful New Zealand.' So



Gasteria armstrongii (see Page 334)



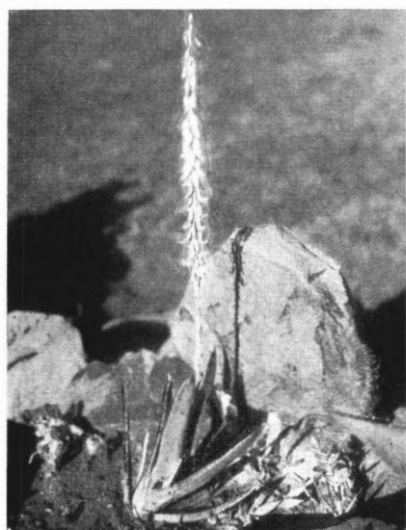
Gasteria lilliputiana (see Page 335)



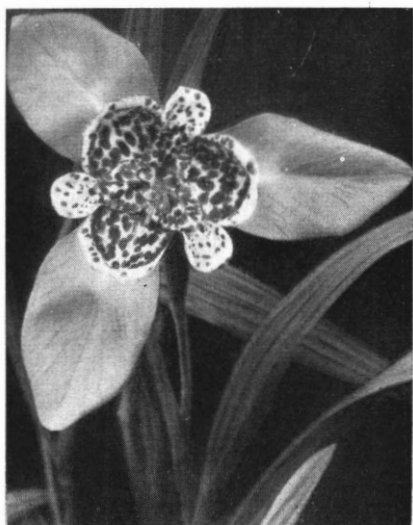
Gasteria maculata (see page 336)



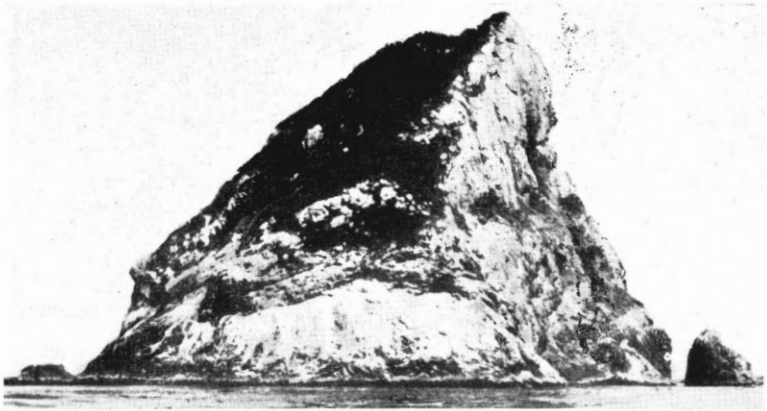
Gasteria obtusifolia (see Page 334)



Gasteria longiana (see Page 337)



Tigridia hybrid (see Page 355)



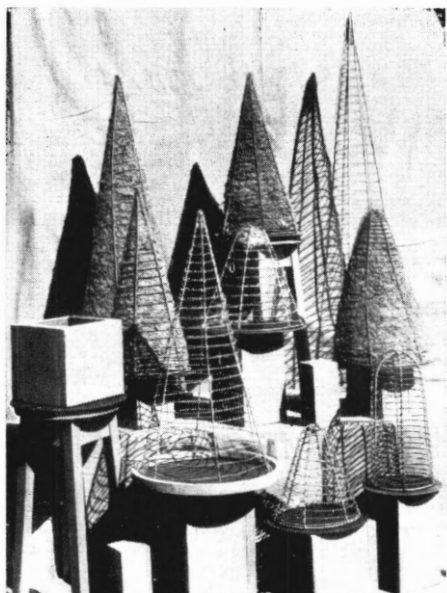
West Island, Three Kings. *Elingamita johnsonii* is restricted to the small windswept forest shown (see Page 339)



Regeneration on Great Island, Three Kings. *Cordyline kaspar*, *Cyathea medullaris*, *Colensoa physaloides* (see Pages 338, 339).



South West Island, Three Kings. *Meryta sinclairii* forest. (see Page 338).



*Cones and blocks used in staging
vegetables. (see Page 348)*



*A 'mock-up' showing equipment
used for small vegetable display.
(see Page 348).*



*Vegetable display staged by Lincoln College which was awarded the Silver
Gilt Medal of the Royal Horticultural Society. (see Page 352)*



Pohutukawa (Metrosideros excelsa) at Te Titoki Point, Little Barrier. (See Pages 357, 358) (National Publicity Studios).



One of the tree ferns *Dicksonia* sp. preserved for the enjoyment of all in a National Park. (National Publicity Studios) (see Page 359).



Kahikatea (Podocarpus dacrydioides) on margin of scenic reserve in King Country. (National Publicity Studios). (See Page 360).

we should take care that abundant reserves are set aside as sanctuaries for our plants — natural museums, indeed, where nature can carry on her work unmolested. Nor is the mere proclamation and establishment of these havens of refuge sufficient; they must be guarded with that zealous and loving care which such priceless possessions demand. It is the purpose of this article to describe some of the parks and reserves of the North Island, to try to assess their importance from the point of view of conservation and to draw attention to some of the problems facing their preservation.

Hurumua Scenic Reserve

This fragment of bush near Wairoa, Hawke's Bay, is mentioned as a site where a rare and interesting species is in danger of becoming extinct in the foreseeable future unless more positive steps are taken to ensure its perpetuation. Only $1\frac{1}{2}$ acres in area, it is the last remaining site in the world where *Pittosporum obcordatum* exists. This species was first discovered by Raoul in wet bush near Akaroa in 1841. It is a low tree with distinct juvenile and adult forms and with very small flowers varying from pale purple to saffron yellow in colour. The piece of bush where Raoul made his discovery must have been cleared soon after settlement for no other plants have ever been found on Banks Peninsula.

It was believed that the species was extinct when in 1901 a few trees were discovered in swamp forest near the outlet of Lake Tongonge at Kaitaia, some 600 miles north of Akaroa. Most of these trees were felled prior to 1919 when the sole survivor was removed during drainage operations. Again the species was believed extinct when it was discovered in 1920 in the area mentioned near Wairoa. It took until 1937 to have the area, which was donated by the owner Mr. A. T. Carroll, fenced and declared a scenic reserve. Again it was forgotten until 1947 when an inspection showed most of the plants in danger of being smothered by blackberry. Fortunately the Wairoa County Council became interested and since 1951 they have undertaken the supervision of the reserve and the control of weeds.

But *Pittosporum obcordatum* is a plant of the swamp forest, and the reserve, now completely surrounded by exotic grassland, is getting progressively drier. It is possible that if left alone the plant may die out in this its last natural habitat. Here is a case where the conservator must work with the horticulturist. We should propagate hundreds of plants and plant them in suitable areas in scenic reserves in North Auckland, Wairoa and Banks Peninsula at the same time as we exert every effort to ensure the perpetuation of the association at Hurumua.

Little Barrier

Known to the Maori as Hauturu (the resting place of the wind) this island of 6960 acres, 11 miles east of Cape Rodney, was purchased from the Maori owners and set aside as a sanctuary for birds, a purpose

which it serves admirably; in addition it is, of course, the perfect plant sanctuary. The stitch bird, extinct elsewhere, thrives here and is apparently increasing, and many other species, rare in other parts are found in large numbers. Common, too, is the pekapeka or native bat now rarely seen on the mainland.

Few parts of New Zealand have been so little changed by human occupation and we have here for study by scientists the nearest approach to what conditions were like in this country before the coming of the white man. The only introduced vermin are rats and cats and constant war is waged on them by the resident ranger. From the top of Mount Archeria, named for the interesting plant *Archeria traversii*, down the rugged bush-covered slopes into the deep ravines and out to the gorgeous masses of pohutukawas on the shore, we have the variety of habitat which makes for the ideal living plant museum. Admission is only by permit and this is not easy to obtain. The difficulty of landing (there are no harbours or safe bays) helps to protect the reserve against unauthorised entry. Preservation of species is the main object and every effort must be made to keep the Little Barrier in its primeval condition. Entry must continue to be confined to the few who can best use its opportunities for study and the appetite of the public for information about the birds and plants there can be satisfied by the production of films and slides for general educational use.

Waipoua

The most important reserve set aside under the Reserves and Domains Act for the preservation of kauri is the Trounson Kauri Forest of 1245 acres. But I take Waipoua instead for discussion here because it is such an outstanding example of what can be done as far as scenery preservation is concerned when public opinion is aroused and guided. The tragic story of our main kauri forests and the lack of foresight which resulted in their almost complete destruction, must regularly be recalled to remind us of the necessity for eternal vigilance as far as conservation is concerned.

It had long been general Government policy that Waipoua should be reserved, 'To remain in a state of nature for all time.' Situated in one of the wettest parts of North Auckland, the useful combination of warmth and regular moisture resulted in plant associations distinctively New Zealand in character. Of the trees and shrubs, 120 out of 127 are endemic and many of them are confined to the North Auckland Botanical District. Here we have a community of endless complexity in an area of extraordinary diversity of physical conditions. As Mr W. R. McGregor, that great fighter for the preservation of Waipoua, said: 'What indeed we seek to preserve in Waipoua is a gem with many facets; a fragment of old New Zealand, untamed, in all its pristine glory; a remnant of an incredibly ancient garden of Nature, in all its inspiring loveliness.'

The decision of the Forest Service to mill Waipoua stirred the public in a way that had rarely occurred before. Following on three monster petitions and the constant pressure of local and national organisations, 20,000 acres were in July, 1951 proclaimed a sanctuary under the Forest Act, 1949. This means that, from the point of view of milling, the area is inviolable and any form of forest utilisation is prohibited. Further, the boundaries of the sanctuary can be altered and its proclamation as such can be revoked only by an Act of Parliament. It is a very satisfactory arrangement that Waipoua should be left under the control of the Forest Service. Because of its large adjoining areas of both indigenous and exotic forests this department has the staff and facilities for handling such vital matters as the control of fire and noxious weeds and animals.

National Parks

Tongariro

Though not officially declared a national park until the special Act of 1894, Tongariro as a park really dates to the day in March, 1886 when Te Heu Heu Tukino said, 'The peaks shall be a sacred place of the Crown, a gift for ever from me and my people.'

Probably the best known and most visited of all our parks it is rather sad to contemplate that its popularity has very little connection with the aspects of preservation. As the only major skiing area in the North Island, strategically placed for the large centres of population, Tongariro National Park is to many just a place where thousands of people go to enjoy winter sports and plaster the mountain side with every imaginable kind of litter among which beer bottles are the commonest items. This intense use of a small section of the park poses problems which must inevitably increase in intensity with severe damage to the natural features the park was designed to protect. It would appear that to save the greater part we must concentrate the maximum of facilities in the minimum of space and resign ourselves to destruction in this smaller area.

To others, however, this park of over 160,000 acres is interesting and stimulating for other values which it contains. It provides an unusual mingling of thermal activity and perpetual snow, of dense forest and open tussock grassland, of sub-antarctic beech and mixed sub-tropical rainforest, of sub-alpine vegetation and bare rock. In no other area of the North Island can be found such a glorious collection of botanical gems, many of them of major value in horticulture. The toi or broad-leaved cabbage tree, *Cordyline indivisa*, with its large, bronzy green leaves and lovely golden midribs, grows here to perfection, especially in the ravines close to the road and railway. On the western slopes of Ruapehu is found the rare and interesting *Pittosporum turneri*, a very local species with an intensely divaricating juvenile stage. Two epiphytes grow freely — *Senecio kirkii*, with its masses of white daisy flowers often so abundant as to hide the leaves completely,

and *Pittosporum kirkii* with lovely reddish-purple bark and yellow flowers. On the beech trees the parasite *Elytranthe tetrapetala* dots the bush with scarlet when in flower.

Above the bush line *Ourisia macrophylla* in the shady areas and *O. colensoi* in the more open places vie with *Celmisia spectabilis* and *C. incana* and *Gentiana bellidifolia* in painting the hillsides white. The gentian also grows to perfection in the most inhospitable sites in the scoria and pumice on Mount Tongariro. Also common high up on Tongariro is the lovely *Hebe spathulata*, a true shingle plant. It has unusually deep roots and numerous short stems bearing masses of large white flowers. Abundant on the shingly slopes up to 6000 feet on all three mountains is *Hebe hookeriana* one of our loveliest alpine carpets the surface with thousands of flowers, bluish to violet purple or white streaked with purple. And no one can fully appreciate Tongariro National Park who has not seen in flower *Ranunculus nivicola*, the golden alpine buttercup, and the even larger *R. insignis* with golden flowers up to 2 inches in diameter.

But it would take anyone many days or even weeks to view all the species growing in their natural haunts in this park. Fortunately, in pursuance of the policy of the National Parks Authority that park boards should construct gardens to aid the work of interpretation to visitors, the Tongariro Park Board is establishing a garden close to headquarters. Financed largely by a donation from a leading horticulturist, an area of 3 acres, already partly clothed with original vegetation, will eventually contain most of the species occurring in the park. An area previously defaced by bulldozers has been restored to make a rock and scree garden which will be used to accommodate plants from high altitudes. As far as possible, species will be grouped in the associations in which they occur naturally, such as forest below 3000 feet (podocarps and red and silver beech); forest from 3000 to 4000 feet (mountain beech, Tongariro totara forest, Hauhangatahi cedar forest); tussock grassland; sub-alpine scrub; herb field; and rock associations above 5000 feet. Service in gardens such as these could be made a vital part of training of our horticultural apprentices.

Mount Egmont

This park is probably unique in the world in that the residents of the adjoining areas rate themselves to provide funds for the protection of the forest cover. The early settlers realised how their future water supply depended on the maintenance of a ring of bush on the mountain and the axe was stayed at about 1600 feet. In 1881 the area within 6 miles of the summit, amounting to 72,000 acres, was reserved for the growth and preservation of vegetation to protect the water supply of towns and farms on the lower slopes. The Egmont National Park was constituted by special act in 1900. Arrangements were made whereby the ratepayers contribute annually over £2,000, in turn subsidised by Government, to be used in waging relentless war on goats

and opossums. In a recent period of ten years 15,000 goats and 240,000 opossums were destroyed and the annual tallies still amount to several thousands. Where the populations have been reduced to reasonable numbers, regeneration of the native vegetation proceeds apace.

The abundant and regular rainfall and the fertile soil have given us magnificent sub-tropical rainforest on the lower slopes of the park. Rimu, totara, miro, matai, rata, tawa and rewarewa grow in all their majesty. With increasing altitude, towhai becomes dominant and *Libocedrus* occurs in almost pure stands. Remarkable is the complete absence of any species of beech, all the more surprising when we consider that beech occurs freely less than 30 miles away.

Above the bush line the mountain is made gay in summer with celmisias, euphrasias, ourisias and wahlenbergias and between 4000 and 5000 feet *Ranunculus nivicola* with its lovely golden flowers is extremely abundant. For those who cannot climb to see these alpenes, examples of most of them are cultivated in a rock garden near the headquarters at North Egmont.

Urewera

Last of the North Island parks to be constituted is Urewera. Its 453,971 acres make it second only in size to Fiordland's 2,922,853 acres. This is another park in which the economy of a vast area outside the park is largely dependent on what happens within. Long before its declaration as a park the waters of Lake Waikaremoana were harnessed for electricity, to the everlasting detriment, unfortunately, of the vegetation on the lake margin, and the rivers which flow to the Bay of Plenty could be vitally affected by any major change in the forest cover of the park. Fear of such consequences probably had something to do with the opposition to the construction of a road through part of the park to give access to timber resources in the Mangapohatu block outside the park. The National Parks Authority believes that no fundamental damage will be done by the road, that the construction scars will readily heal and that the road will eventually provide good access to a notable scenic area with a variety of types of vegetation.

Urewera is predominantly a forest park with a variety of podocaps, rata and tawa on the lower slopes and beeches on the higher levels gradually merging into scrub on the tops. The district is the home of the large-flowered kowhai and on the open faces between Lake House and the outlet occurs a most interesting undescribed kowhai first noticed as distinct by Phillips Turner. It makes a fine garden plant.

But the forests of Urewera are in serious danger. Deer, pigs, and opossums are a menace over considerable areas and goats are numerous on the Panekiri Range at least. In some parts the situation as far as deer are concerned is critical and there it is possible to walk from the valley floor to the crest of the ridge without hindrance of undergrowth.

Unless more attention can be paid to the destruction of noxious animals on a large scale and with increasing intensity, much of the Urewera will degenerate to open parkland forest. The effect on water conservation will be disastrous.

What is often claimed, with considerable justice, as New Zealand's most beautiful lake is not free from danger. Waikareiti is an enchanting bush lake reached by a lovely walk through some of the finest beech forest in the country. Seven islands dot its waters and on top of one of these islands is another lakelet. Unfortunately for the safety of Waikareiti, it is 1000 feet above Waikaremoana stepping down its waters by a series of sparkling cascades, the best-known being those by the road at Aniwaniwa. We must be eternally vigilant lest Waikareiti and Aniwaniwa are valued at less than kilowatts.

NOTES FROM THE CHRISTCHURCH BOTANIC GARDENS

L. J. METCALF, N.D.H.(N.Z.),

(Assistant Curator, Botanic Gardens, Christchurch).

During the past few months the weather has been remarkable for its mildness and lack of frosts. May, which is normally the wettest month of the year, was exceptionally dry and mild and only in 1896 has a lower rainfall been recorded for the month. In June there was a rather high rainfall, 4.92 inches being recorded for the month, this being almost double the average and on the 13th of the month there was a severe electrical storm over the city and at the airport 1.06 inches of rain fell in one hour. This is the heaviest known hourly rainfall recorded there. With the exception of six days there were only 1.2 hours of sunshine a day during the month. As with May, July was a mild dry month with temperatures often well above maximum. However, the most remarkable feature of the month was the lack of hard frosts, in contrast to a normal July with frequent hard frosts. As a consequence of the mild weather growth is a week or two earlier than usual and the soil is in very good heart for cultivation.

In a previous issue mention was made of a few of the flowering plants which are useful in local gardens during the winter. However, there are many other plants which are excellent for brightening the winter garden and foremost among these are some of the variegated shrubs. Of the numerous variegated shrubs which are available there are a few New Zealanders which are equal to anything which has been introduced from overseas and it is a pity that they do not figure more prominently in our gardens instead of some of the old favourites which nurserymen offer.

Probably the most outstanding variegated New Zealand shrub is *Pittosporum crassifolium* 'Variegatum' of which a fine specimen may be seen in the New Zealand plant section in the Botanic Gardens. It makes a well shaped specimen up to about 12 feet high and, particularly during the winter months, the grey-green and cream variegated foliage makes it a striking plant in that part of the Gardens. It is equal to any variegated exotic as a garden plant and is probably superior to most. The forms of *Pittosporum tenuifolium* are very good and of these *P. tenuifolium* 'Garnettii' is the best. Although possibly not quite so reliable in Christchurch as *P. crassifolium* 'Variegatum' it nevertheless makes a fine bush. The leaves are a grey-green with a white margin and frequently they are spotted and margined with pink. *Pittosporum tenuifolium* 'Variegatum' is a smaller growing shrub the leaves of which are more typical of the type as regards form and they are margined with a pale yellow; it is a good shrub but not nearly so effective as the form 'Garnettii.' More recently a variegated form of *P. ralphii* has appeared and although it has not yet been tried in the Gardens it appears to be a very attractive shrub. And last but not least among the variegated forms of *Pittosporum*, is *P. eugenoides* 'Variegatum' which also displays the grey-green and cream variegation which seems typical of the genus.

One or two other New Zealand shrubs worth noting on account of their variegated foliage are the variegated Broadleaf and some of the hebes. Of the Broadleaf, *Griselinia littoralis*, there are two forms in cultivation, one having rather narrow, pointed leaves marked with green and yellowish-green and the other which is by far the better plant has larger, more rounded leaves margined and variegated with cream. It is a very good hardy shrub and could well be used more instead of the much over-planted *Euonymus japonica* forms.

The best of the variegated forms of *Hebe*, is *H. andersonii* 'Variegata' which is often erroneously referred to as *H. andersonii*. The leaves are broadly margined and plashed with creamy-white and they show off very well the spikes of pale violet-blue flowers. *Hebe speciosa* 'Variegata' is another good form which is further enhanced in the winter months by the leaves becoming flushed with a bright rosy-pink. However it is prone to attack by mildew and so it is not such a reliable plant.

Turning now to exotic variegated shrubs, the commonest ones are probably the varieties of *Euonymus japonica* which due to their hardiness and tolerance to a variety of conditions are very much over-planted by various parks departments. Not so widely used and excellent for planting against fences and walls or in difficult situations are two forms of *Euonymus fortunei*. They are *E. fortunei* 'Silver Queen,' and *E. fortunei* 'forma gracilis,' the latter, as well as being variegated green and white, may also have pink and cream as well.

One good variegated shrub which does not appear to be offered for sale in New Zealand is *Rhamnus alaternus* forma *argenteo variegata*. It makes a dense bushy shrub about 5-8 feet high and has rather narrow leaves 1-2 inches long which are dark, shiny green with a broad creamy margin.

The variegated Periwinkle, *Vinca major* var. *variegata* is often seen as a pot plant but it is excellent as a ground cover on banks or under trees, the creamy-white variegated foliage and the blue flowers contrasting very well. And lastly one of the most brilliant of the variegated evergreen shrubs is *Aucuba japonica* 'Crotonoides' which has the leaves so densely speckled with bright golden yellow that very little green shows through. It is a female form and if a male plant of one of the other forms is grown nearby then its beauty is further enhanced by the bright red berries.

Another New Zealand shrub which is first class for foliage effect is *Nothopanax discolor*. There are several forms in cultivation and the one which has the very dark purplish-bronze foliage is a really outstanding shrub. In the Botanic Gardens it is a small bush 4-5 feet high, the leaves are 3-5 foliate and 3-5 inches across. In Christchurch it is inclined to be somewhat frost tender and with severe frosts the young tips are sometimes frosted.

At this time of the year the rock garden is just starting to come to life after winter and the first plants to make a display are the species and varieties of *Crocus*. The commonest and one of the earliest to flower is *Crocus tomasinianus* which seeds itself around so freely that it sometimes becomes a pest. However, the clear lavender flowers are very attractive and in any batch of seedlings several variations may be found. *Crocus tomasinianus* var. *pictus*, which has the purple feathering on the outside, appears quite commonly and these are quite good rosy forms. *Crocus chrysanthus* and its forms are always most attractive and of these mention must be made of *C. chrysanthus* 'Snow Bunting' which has white flowers feathered blue on the outside, 'E.A. Bowles' a large flowered form with butter-yellow flowers, and 'Yellow Hammer' which has the yellow ground richly feathered with olive-green.

Crocus pestalozzae var. *coerulescens* which comes from Turkey is a very attractive small species with blue flowers. The flowers are slightly feathered on the outside, the branches on the style are thread-like and there is a small black spot on the lower portion of the filaments which distinguishes it from other species. Some of the other species of *Crocus* which flower during this period are, *Crocus imperati*, *C. etruscus*, *C. fleischeri*, and *C. heuffelianus*.

In the Gardens there are two specimens of *Magnolia campbellii* and one result of the mild weather is that this year they have been able to flower without the flowers being damaged by the frost. The origin of these two plants is unknown, but presumably they are seedling

forms. However, it is interesting to note the differences between the two. One specimen is in the front part of the Gardens near the Director's house and it flowers regularly several weeks earlier than the other. This year it commenced flowering on June 1st and has continued flowering intermittently since. The flowers have been able to withstand 6 degrees of frost without injury and this year it has been fortunate that there were few heavy frosts to damage it. The other specimen is in the western portion of the Gardens near the traffic bridge and at the time of writing it is in full flower and has over 60 flowers. This is the first time that it has flowered so profusely. However, it must be admitted that generally *M. campbellii* is not a plant for local gardens and only those with a favoured situation would be able to succeed with it.

NOTES FROM THE WELLINGTON BOTANIC GARDENS

PETER J. CADIGAN.

Of the many species of flowering trees suited to the larger garden, few can compare with the magnificent display provided by well established magnolias. Wellington Botanic Gardens are fortunate in that a number of very fine and showy specimens are thriving on the grass banks and in the borders. The fame of a large *Magnolia campbellii* situated on the main drive has spread far and wide, and attracts many visitors at this time of the year. In past seasons this tree has produced a wealth of bloom and this year is no exception. Its large flowers, opening to 10 inches across, provide a beautiful spectacle and make a pleasing combination with a large *Rhododendron* 'Sir Robert Peel,' also in full bloom. On the bank opposite a group of *M. soulangeana* and its varieties are commencing to show colour and a grand display is expected. A touch of spring is introduced by groups of *Narcissus* 'King Alfred' planted on the grassed slope.

Pieris japonica, one of the Lily of the Valley shrubs with its 6 inch long drooping white panicles, is ideal for semi-shade and the many specimens in the Gardens are in full flower. Perhaps the best is on the new rockery at the main entrance. Also on the new rockery a fine specimen of *Hamamelis mollis*, the Chinese Witch Hazel, is proving very popular. This deciduous shrub has deep yellow flowers in sessile clusters and succeeds in slightly acid soil.

In the sunken garden large-flowered polyanthus primroses in a host of different colours and *Primula malacoides* in variety are attracting attention. The polyanthus are planted in groups with tulips behind, and the spring display promises to be in keeping with the high standard maintained in the past. On the bank above the sunken garden *Protea nerifolia* and *P. longiflora* continue to flower profusely. The Glenmore area of the Gardens contains a particularly fine specimen of *Prunus*

amygdalus 'Pollardii' or flowering almond, with its single pink flowers borne in profusion. In the shrub borders of Glenmore, *Hypericum leschenaultii*, *Thryptomene calycina*, *Edgeworthia papyrifera*, *Grevillea rosmarinifolia*, ericas and *Leptospermum* in variety all add interest to a popular section of the Gardens.

On the slopes of Glenmore hardy trees and shrubs are becoming established, the plants of South African and Australian origin proving to be the most suited to the exposed conditions. *Protea nerifolia* and *Leucospermum reflexum*, together with *Leucadendron argenteum* and *Dryandra floribunda* have been making much growth and producing many flowers. In the more sheltered areas grevilleas, and especially *G. asplenifolia*, *Eucalyptus ficifolia* and *Cryptomeria japonica* 'Elegans' are among a wide variety of plants making excellent progress.

The main section of the Gardens is, with the advent of warmer weather, becoming very colourful. *Calendula* 'Persiman' and *Primula malacoides* 'Deep Pink' have been in flower for some time, and *Myosotis*, *Anemone* 'St. Brigid,' Pansy 'Swiss Giant,' named hyacinths, Polyanthus and *Viola* 'Blue Perfection' add to the beauty. The main drive is afforded an exotic appearance with the three majestic *Phoenix canariensis*, the Canary Island Palm, dominating the landscape.

OFFICIAL ANNOUNCEMENT

ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE
(INC.)

THIRTY-EIGHTH ANNUAL MEETING AND CONFERENCE OF DELEGATES

NOTICE IS HEREBY GIVEN that the 38th ANNUAL MEETING AND CONFERENCE OF DELEGATES of the Royal New Zealand Institute of Horticulture (Inc.) will be held at GREYMOUTH on WEDNESDAY, FEBRUARY 1, 1961, commencing at 9.30 a.m.

Will all delegates, and other members attending PLEASE ARRANGE THEIR HOTEL ACCOMMODATION through the TOWN CLERK, P.O. BOX 56, GREYMOUTH as soon as possible.

K. J. LEMMON,
Dominion Secretary.

PUBLICATIONS RECEIVED

MIST PROPAGATION OF CUTTINGS, by Patricia Rowe-Dutton (Published by the Commonwealth Bureau of Horticulture and Plantation Crops, Farnham Royal, England).

The progress in mist propagation methods has been one of the most outstanding advances of post-war horticulture. Indeed, its progress has been so rapid that the practical man has been hard-put to keep up with the wealth of information becoming available. This well-illustrated digest is a condensation of 160 intelligently selected papers which have appeared in trade publications and horticultural and scientific journals. It is essentially practical in approach, and does not, for example, even mention the classic original papers in which mist was first described, which are of little use to the practical man. The nurseryman or student who wants the essential information about installing and working a mist propagation system will find it here, free of bias and padding, and with his problems often solved from someone else's experience.

Within the compass of 135 tightly packed pages Miss Rowe-Dutton has surveyed the types of mist condol systems, electronic leaves, and various indoor and outdoor structures; piping, nozzles (a wide range of designs, with constructional details), water pressure and quality, and soil warming; rooting media, growth substance treatment, nutrition, disease and pest incidence, shading, and the vexed question of hardening-off. In short, as complete a coverage as could be wished, and all discussed with the requirements of the practical man in mind. A table covering 56 pages gives propagation results from over 700 species covering 225 genera, so that information on optimal methods may often be obtained, and an appendix lists suppliers (Northern Hemisphere) of mist equipment.

It is only in this respect that the New Zealand grower can find serious fault with this publication, for locally made equipment does not find a place. As is to be expected in the large field covered, there are occasional absences of information — solenoids, for example, are but briefly noted and no comment made on their size in relation to the number of nozzles supplied. This is but a quibble however, for here is a thoroughly recommended ten shillings worth for any interested horticulturist.

—S.C.

THE HISTORY OF THE LODER CUP — A REVIEW OF THE FIRST TWENTY-FIVE YEARS.

This book of 43 pages faithfully sets forth the purposes and the history of the first 25 years of this coveted Award, complete with photographs and citations of the winners, and also of the donor of the Cup, Lord Wakehurst.

All lovers of New Zealand's native flora should possess a copy of this valuable and historical booklet.

Published by the Loder Cup Committee, and available at 5/- per copy from: The Secretary, Loder Cup Committee, P.O. Box 450, Wellington.

IN MEMORIAM

It is with sorrow that we record the passing of Mrs. E. Gower, A.H.R.I.H.(N.Z.), at Wanganui on 21st August.

Mrs. Gower was the only daughter of the late Mr. and Mrs. Hopeful Gibbons, spending her early childhood in Patea and later at Wanganui Girls' College. After her marriage with the late Alfred Gower, Mrs. Gower lived in Taranaki and Hawke's Bay. Following her husband's death she moved to Lower Hutt where she was prominent in horticultural circles and the Wellington Pioneer Club. On the death of her mother she returned to Wanganui to live with her father at Mikurangi where there was a garden of 2 acres, that is now a home for elderly people. Mrs. Gower built a home adjoining which she landscaped skilfully, retaining all the interest of the original planting and introducing many other plants of interest, particularly rose species, *Clematis* and fuchsias.

In addition to being an Associate of Honour of the Institute she was also a founder member and patron of the Wanganui District Council, an Associate of the Royal Horticultural Society, England, patron of the Wanganui and District Rose Society, patron and past president of the Wanganui Horticultural Society, life member and past president of the Wanganui Children's Garden Circle and a member of the executive of the Wanganui branch of the New Zealand Camellia Society.

A visit to her charming garden made it very evident that the rose was Mrs. Gower's particular favourite and as a result of three world tours her collection was enlarged considerably and many garden groups enjoyed the privilege of visiting this charming garden.

In addition to other horticultural activities, Mrs. Gower has been collecting important data concerning historic trees of the Wanganui district which will, doubtless, be of value for the forthcoming revised publication of Dr. Allan's *Historic Trees of New Zealand*.

We mourn the passing of an honoured member of our Institute and a distinguished horticulturist. Our sincere sympathy is extended to her family and relatives.

DISTRICT COUNCIL REPORTS**AUCKLAND**

Each year in Auckland as show time approaches the great need for additional trained personnel to assist in judging at local and district shows becomes more apparent. The Auckland Horticultural Council has striven to supply judges from the list of people known to be competent, but this has resulted in these willing few being grossly overworked. The Auckland District Council of the R.N.Z.I.H. in conjunction with the Auckland Horticultural Council decided to take action to improve this unfortunate situation. It was agreed that a committee composed of representatives from both organisations should arrange classes to train people who already had sufficient and appropriate horticultural background.

Generally speaking, judges have been available to judge the specialist flowers from the societies interested in the particular plant. The greatest need has been to find people competent to assist in officiating in the floral arrangements and cut flower sections, so accordingly it was decided to concentrate on these two sections for this year.

Fortunately the Committee was successful in getting the services of a team of skilled instructors for both courses. The one on flower arrangement started during November when Mr. Maurice August gave the opening session. After the Christmas recess, instruction commenced in February and during the following months, Mrs. Elaine Morpeth assisted by Messrs. Beren Spiro and Herbert Hoare had the teaching under their care. There are forty-three students.

Thirty-seven students are attending the cut flower classes which are tutored by Miss Joy Watkins of the Horticultural Division, Department of Agriculture and Messrs C. R. Reader, Ron Sinclair, R. L. Thornton and F. Jollie.

To indicate the zeal of the students it should be noted that some are attending from distances like Te Awamutu, Rangiwai, Whitianga and Helensville and all show a keenness which is very gratifying.

CANTERBURY

Following the very successful conference on 'Glasshouse Construction and Heating,' held in 1959, the Canterbury District Council decided to hold a further conference in 1960. The subject chosen was 'Ornamental Trees and Shrubs for the Garden' and the date, August 3, to approximate to Arbor Day activities. The response was so great that the meeting hall had to be changed at the last minute to accommodate all wishing to attend. There were 247 full conference members, and a further 86 persons attended for parts of the all-day event. Members came from as far afield as Oamaru in the south and Cheviot in the north.

Mr. E. C. Hale first discussed 'Landscape design and initial steps in your new garden,' illustrating his remarks with large diagrams and a scale model. The good and bad ways to lay out sections were comparatively described, so that the beginner was able to obtain many useful tips and suggestions.

Mr. G. G. Henderson, Assistant Director, Christchurch Parks and Reserves, gave a most practical discussion on 'Small trees for city sections,' in which he listed plants which could be trusted for this difficult-to-satisfy position. Roses and Rhododendrons were discussed by Mr. H. W. Gourlay and Mr. James Deans respectively, both masters in their fields. Both these speakers attempted to stimulate interest in the subjects of their choice by discussing their requirements, use and placing in the garden, rather than by giving huge and hard-to-digest lists of names. The avid questioning which they received after their sessions was proof that they had succeeded.

The afternoon session was opened by Mr. M. J. Barnett, former Director, Christchurch Parks and Reserves, who described 'Planting and maintaining your shrubs.' Mr. Barnett brought with him an excellent collection of demonstration material, and planted and pruned to such good effect that he was soon ankle deep in debris. All were impressed by his knowledgeable comments.

Mr. C. H. Jones, in discussing 'Plants for hillside and warm situations' touched on a subject of immense local appeal, for Christchurch has two distinct planting zones — the hills and the flat. The practical approach he made showed Mr. Jones as a man with much experience of his subject.

The remaining time in the afternoon was devoted to four short talks, Mr. L. J. Metcalf described 'New Zealand trees and shrubs for the home garden,' Mr J. H. Glazeborok 'Trees and shrubs for winter effect,' Mr. S. Challenger 'Climbers and wall shrubs' and Mr. J. O. Taylor 'Planting on sandy soils.'

The evening programme was devoted to a slide session, in which Mr. John Watling, past President of the National Rose Society, described 'My choice of trees and shrubs' illustrated with about 150 excellent slides of his own taking. Mr. Watling skillfully brought together all the varied ideas and plants which had been discussed during the day into one co-ordinating finale.

A feature of interest to all conference members was the excellent and representative collection of plants which had been gathered from several sources. They provided a discussion centre for the many enthusiasts who were there. The lectures given during the conference have been cyclostyled and issued to all conference members as a permanent record and reference. They are available to any others interested at a small charge, on application to the Conference Secretary, S. Challenger, Lincoln College, Christchurch.

NORTH TARANAKI

MAY—

The May meeting was the first winter meeting to be held in New Plymouth, as in the previous month we visited members and friends in Stratford. Despite inclement weather there was a satisfactory attendance to hear Mr. J. B. Laurenson, newly appointed Plant Quarantine Officer, Department of Agriculture, New Plymouth, deal with the subject 'Hormones for the Home Garden.' Our President, Mr. V. C. Davies, welcomed Mr. Laurenson to New Plymouth on our behalf and said he hoped he would enjoy his term in New Plymouth and take an interest in our activities as did his predecessor, Mr. Ian Mayo. Mr. Laurenson dealt with this extensive subject in a manner that was not too technical, mentioning only those preparations likely to be needed by the home gardener and the precautions to be taken when using them. Several coloured slides gave good impressions of the effect of even minute quantities on plant leaves, particularly those of the tomato and grape. The main symptoms were the tendency for the veins to run almost parallel to the mid-ribs, with strap-shaped, elongated leaves resulting.

Questions followed the talk and a vote of thanks was proposed by Mr. B. A. Norman, F.R.I.H.(N.Z.).

JUNE—

Our June Meeting proved a popular one with Mr. Rigby Allan (Acting Curator of the Taranaki Museum) speaking on 'Early Maori Agriculture.'

He spoke of the early cultivations of extensive acreages of land by the Maoris (chiefly from Tongaporutu to Patea in this locality) and near Nelson in the South where thousands of Maoris congregated before the advent of the European.

He mentioned their ceremonies which were always carried out prior to planting, and before harvesting — the plantings being made according to the Moon. He then described the chief tools they crudely fashioned, a work of art nevertheless, and their uses.

Mr. J. B. Sankey thanked the speaker for a most interesting talk, and one which should be of particular interest to all New Zealanders.

JULY—

Our yearly visit to friends and members in the Okato District was again carried out in July. The Guest Speaker for this occasion was Dr. Roland Smith, a scientist attached to the B. P. Todd Group, and he spoke on 'Cave Explorations.' He spoke on his experiences in exploring caves both in England and New Zealand, and the ways and means of locating them, exploring them, under great difficulty at times and finally making a record of them by maps for future guidance, and repeat visits. Many wonderful coloured slides of the interiors of these caves were then shown, and there was certainly an endless variation of beauty to be recorded by the explorer's camera. He mentioned that some new caves of great beauty near Waitomo would probably be opened up in the not too distant future. Mrs. C. M. Macalister, Stratford, proposed the vote of thanks to Dr. Smith, and mentioned that she had heard him, and seen his slides twice and they were appreciated on both occasions.

During this period and up to the time of writing, we were fortunate (through the good services of our President) in being able to arrange for two Open Meetings to suit visiting personalities while in New Plymouth.

The first meeting was on June 14th when Dr. E. J. Godley, Director, Botany Division of the Department of Scientific and Industrial Research, Christchurch gave an address, illustrated with slides, on 'A Botanist in Southern Chile.'

The subject was well received by an attendance of approximately 250 members and friends. Mr. Grant Maxwell, F.R.I.H.(N.Z.), proposed a hearty vote of thanks to Dr. Godley for a most informative talk on a country so akin to ours in many respects.

Prior to the introduction of the guest speaker, our president had the pleasure of presenting the Junior Certificate in Horticulture to Mr. A. Jellyman, 19 Massey Street, New Plymouth. He congratulated Mr. Jellyman, and hoped that this Certificate would be the forerunner of more to come.

The second Open Meeting was held on August 3rd when Mr. N. R. Philbrick, Botanist of the L. H. Bailey Hortorium, Cornell University, Ithaca, New York was in New Plymouth for a short visit. He spoke on 'Camellia Research Work for Cornell University.' He was studying *Camellia* growing in various countries under the auspices of the Longwood Foundation, but only had a week in New Zealand.

A young man of 26 years, he was of a bright disposition, a good speaker with a knowledge of the *Camellia* and *Camellia* authorities in other lands. We were fortunate indeed to have the opportunity of hearing Mr. Philbrick. Coloured slides were also shown together with some from New Plymouth *Camellia* enthusiasts. Mr. Fairbrother moved the vote of thanks to the speaker.

NORTHERN WAIROA

MAY—

Members of the Northern Wairoa District Council of the New Zealand Institute of Horticulture held their May meeting in the Bandroom, Mr. P. Walden presiding. A welcome was extended to the speaker, Mrs. M. Martin, and Miss M. Neuman, Whangarei.

A letter was received from Her Excellency, Lady Cobham, thanking members for the photograph of the dahlia which has been named after her.

On display on the specimen table was a collection of named chrysanthemums, which was much admired.

In conjunction with her address, Mrs. Martin showed coloured slides of Western Australia and the profusion of wild flowers growing there. She spoke of the common growth of flowers and shrubs which here are carefully cultivated and expensive specimens. Photographs were shown of a whole avenue of flowering gums, of different parts of the Melbourne and Adelaide botanical gardens and King's Park. Among the plants shown were grevilleas, banksias, pineleas, boronias, smoke bushes, feather flowers, kunzeas, leschenaultias, melaleucas and isopogons.

A vote of thanks to Mrs. Martin for her illuminating and instructive address was carried on the motion of Mr. A. Hitchcock and supper was served at the conclusion of the meeting.

JUNE—

The June meeting of the Northern Wairoa District Council of the New Zealand Institute of Horticulture was held in the Presbyterian Sunday School Hall, Mr. P. Walden presiding. A welcome was extended to visitors and a large attendance of members.

Guest speaker was Mr. P. Everett, of the Department of Agriculture, Auckland, who was accompanied by Mrs. Everett. The subject was house-plants, which Mr. Everatt grouped into various sections, including those which flowered, climbers, trailing varieties, types with green leaves and others with coloured leaves. The speaker brought with him a number of specimens to illustrate his talk. He advised spring as being the best time of the year for the re-potting of houseplants.

Mr. Everett has had 37 years' service with the Department of Agriculture and will be retiring at the end of the month. He was thanked for his address by Mr Walden, who wished him well in his retirement.

JULY—

'Australian plants will grow in this country,' said Mr. R. Jordan, in an address to members of the Northern Wairoa District Council of the New Zealand Institute of Horticulture.

Mr. Jordan, an expert gardener in Auckland, also showed slides of Australian plants recently introduced to this country.

'A very common misconception prevailing in this country is that Australian plants are only successful in arid conditions. In actual fact,' said Mr. Jordan, 'Australia has in parts an annual rainfall of over 60 inches.'

In 1954 Mr. Jordan returned from Australia, bringing with him 800 varieties of plants. After considerable effort approximately 100 of these had taken to New Zealand conditions.

'This figure may appear to be small but those 100 plants represent a completely new range of flora and shrubs in this country,' he explained.

Mr. Jordan unwrapped a large parcel containing Australian plant species. Most of these were comparative strangers to Northern Wairoa. A few members had already experimented with some of the plants on display, obtaining mixed results.

Banksia baueri aroused comment. It looked like a Davey Crockett hat, the flower having a fur-like grouping. Other exhibits included *Grevillea sicutata*—a rockery plant that enjoys a long flowering season. The flowers are spray-like. *Grevillea lavandulacea*, a similar species, has a rare beauty with deep red spray flowers and dark leaves, making it an ideal subject against a white fence. The colour range and shape of the plants exhibited made them an acquisition for New Zealand, comparing favourably with our native plants, shrubs and trees.

Other colourful and unusual plants included: *Grevillea alpina*, a red and yellow flowered shrub with tiny leaves. *Hakea sulcata*, a pink pin-cushion type flowered shrub that grows to about 6ft. *Acacia drummondii*, a shrub with spikey bright yellow flowers.

Slides shown by Mr. Jordan and photographed in Western Australia showed an amazing array of wild flora.

Questions posed to Mr. Jordan clarified many points of natural flora and horticulture.

When asked why all plants have such different names, Mr. Jordan replied: 'Latin and Greek names for plants have become an international language among horticulturists, simply as a means to understand various basic types of flora without having to learn other languages. For example, a Japanese gardener would understand a type of plant by being given the Latin name by a gardener of another nationality.'

Asked about colouring of flowers, he said: 'The cause of different colouring is unknown to scientists but the effect of the cause is known. Colour is used by pollinating insects in the same way humans use traffic and street signs as a guide. Proof of this was the difference between insect and wind pollinated plants. Wind-pollinated plants are not colourful.'

The speaker was thanked for his informative address.

SOUTH TARANAKI

At Mangatoki Hall, in May, 1960, three speakers gave addresses. Mr. Fairweather, Patea, spoke on the growing of vegetables, their preparation for market or shows, and hints on how to pack them for transport. The box of cauliflower, cabbage, lettuce, carrots, etc., was evidence of his proficiency. A banana pumpkin was shown and its keeping quality is being tested. Seed will be distributed among local members later.

Mr. Lewis, of Manutahi, Hawera, had roses as his subject. He displayed some blooms and demonstrated with specimen rose bushes correct pruning and planting.

Mr. R. Chamberlain, Hawera, dealt with chrysanthemums, the method of taking cuttings for propagation and prevention of diseases being the main points dealt with. All speakers answered questions. The hall was suitably decorated with arrangements of many varieties of chrysanthemums.

HAWERA—

In June, at the annual meeting, Mr. D. McKenzie, A.H.R.I.H.(N.Z.), Palmerston North was the guest speaker. His most interesting address began with the mention of old gardening books and the history of plants and herbs, of explorers and their hardships and their long time from home during their search, in foreign lands, for new plants. Locality and soil was dealt with and advice was given to plant only the best; to plant in association, not haphazardly, so as to compose a picture. Always to have in mind the ultimate result. To illustrate special points stressed in his address, Mr. McKenzie then showed us many coloured transparencies.

AUROA HALL—

At Auroa Hall in July, Mr. Reader gave gardening hints for the month. Mr. Barry, Hawera, spoke on camellias. He had plants in pots and cut flowers and coloured slides of blooms of the named varieties. As the National Camellia Show is to be held in Hawera on 12th August, members hope to be present to make further study of these charming flowers.

Mr. and Mrs. Hunt, of Hawera, kindly showed many coloured slides of horticultural interest, taken on a trip to Scotland and Europe.

Two tables displayed fine horticultural specimens in prizewinning arrangements.

A dry arrangement contained *Statice*, *Phyllicia plumosa*, *Melaleuca*, *Helichrysum*. A low bowl displayed *Magnolia campbellii* set in a background of heath, sprays of *Symphoricarpus* berries *Lhotskya*, flax, and *Thryptomene sari-cola*.

An all-yellow frontal arrangement contained *Hamamelis mollis*, *Chimonanthus* and *Narcissus* 'Soleil d'or'. A large bowl displayed huge heads of *Kniphofia*, *Bomarea*, *Narcissi* and various sprays. There was also a bowl of *Rhododendron* 'Cornubia.'

Among the specimens on display were *Senecio* (yellow flowers), *Agonis*, heaths, *Lachenalia*, dwarf yellow iris, *Echeveria*, *Narcissus* 'Erlicheer,' double polyanthus; 'Cragford' the earliest *Narcissus polyanthus* with wide overlapping white perianth and a bright red cup — 4 - 5 flowers on a stem; Camellias 'Lady Clare,' 'Donation,' 'Cho-cho-san,' 'Ruth Roya,' 'Tokio,' 'Hiryu,' 'Wabasake.'

In answer to a member's enquiry about silver leaves on her large *Clethra arborea* a short discussion took place. The leaves were very silvery with quite distinct purple patches, the backs showed signs of thrips. One speaker considered that through the attack of thrips the silver leaf blight would have easy access. A nurseryman says he does not grow *Clethra arborea* in his garden because of the susceptibility of this plant to many diseases. The writer destroyed his specimen of this tree a few years ago for the same reason, having been told by an authority that it was a host for *Stereum purpureum*, a fungus causing silver leaf, which caused the loss of several plum trees, nectarines, and peaches. Since then no sign of the disease has been noticed. Although silvering is the first visible symptom of this disease, it alone is not sufficient for positive identification and other symptoms must be sought. One symptom is that the wood on affected branches, when cut across, shows a dark-brown or black stain which may vary both in size and in shape, but when present together with silver leaf, is a good identification.

Another symptom is the appearance of the fungus fructifications on the branch, but this unfortunately only happens when the branch is dead! They appear on the bark as flat or bracket-like plates of fungus tissue which are dull brown when dry, but have a very characteristic purplish or lilac colour when moist. On these bodies the spores are formed for infection which occurs chiefly through wounds. In view of this, once young trees have been shaped, they should be cut as little as possible and where necessary branches should be removed in early summer when infection is least likely. Here we stress the necessity to seal all wounds after pruning. Treatment of affected plum trees depends on cutting affected branches back so far that no brown stain is seen in the wood. Keep the plant vigorous, give good cultivation, liming and manuring and it may recover. There are other causes of silvering of the foliage, so, with valuable trees, expert advice should be sought.

WHANGAREI

Chairman: Mr. E. Arcus, F.R.I.H. (N.Z.); Tel. 3905.

Hon. Secretary: Mr. W. A. Christiansen, C/o. Box 147, Whangarei.

Editor: Mrs. M. M. Martin, F.R.I.H.(N.Z.), Tel. 3914, 17 Puriri St., Kamo.

APRIL—

The April meeting took the form of a Question Session with the former Horticultural Brains Trust answering questions submitted by members. The panel of speakers comprised Messrs. E. Arcus, A. Cameron and D. R. Purser and Mrs. M. M. Martin, all Fellows of the Institute.

The following were some of the questions:—

Question: What is meant by surface mulching and surface cultivation? Some years ago shallow cultivation was much talked of and recommended.

Answer: Shallow or surface cultivation has not proved a success, but when soil has been well dug (to a depth of at least 12 inches) and planted, surface mulching with any suitable material — compost, sawdust or leaf mould, and lightly forked in, is a sound method of improving

soil fertility. On heavy soils deep cultivation is necessary to improve drainage and enable roots to penetrate, but as soil bacteria live and work in the upper parts, food should be kept there and lightly worked in.

Question: What trailing plants are suitable for a 3ft. clay bank?

Answer: The small native *Pomaderris edgerleyi*, the trailing rosemary, and *Grevillea fascicularis*, or the mat forming *Schizocentron elegans*, formerly listed as *Heeria rosea*.

Question: What plants would you use as a screen under a large privet tree — the place being very dry, shady and draughty, with masses of fibrous roots in the top foot of soil?

Answer: Plants suggested were Ivy Geranium, *Senecio greyii*, *Suttonia australis*, *Plumbago capensis* and *Maurandia barclaiana*.

Question: Can astilbes be successfully grown in Whangarei?

Answer: Astilbes do better in a colder climate than ours, but if a cool moist place is given they will be fairly good, and look especially well if grown with the big Japanese *Iris kaempferi*, which likes similar conditions and flowers at the same time. Plenty of water should be given and fowl manure is beneficial.

Question: Do Tetrasnaps come true from seed?

Answer: No.

Question: How can I kill *Euonymus*?

Answer: Frill the bark and pour in 245T.

Question: How can mould be prevented from forming on concrete surfaces?

Answer: Alum or blue water is useful, but Thiram prevents the formation of moss or moulds on brick or concrete.

Question: What causes the browning on the edges of *Begonia rex* leaves?

Answer: Causes — Too much light, or over salinity in tap water.
Cure — Give more shade, and wash out pots with rain water.

Question: What causes malformation of *Begonia rex* leaves which are curled in at the edges, silver leaved sorts being more affected than red leaved plants?

Answer: Excess food probable cause. Silver leaved plants do better in dryer conditions than others.

Question: What treatment should be given to Citrus trees now?

Answer: Scale is often prevalent now, so give a white oil spray. For brown rot control use Cuprox or Bordeaux. Do not give any nitrogenous manures now, as they induce sappy growth, which will be cut by winter frost, but a dressing of basic slag, phosphate, or potash may be used. Basic slag given at 1 lb. for each year of the tree's age. For aphides use wettable D.D.T. or Demalin.

Question: What is Aldrin and for what is it used?

Answer: Aldrin forms 20% of the insecticide Aldrex and is effective against insect life in the soil and is used successfully against the *Narcissus* fly. It is a by-product of petroleum.

Question: Is *Thunbergia* related to *Bignonia*?

Answer: No, there is no relationship whatever. Bignonias belong to the large plant family *Bignoniaceae* and have as relatives *Jacaranda*, *Campsis*, *Pyrostegia*, and *Pandorea* — to name but a few. *Thunbergias* belong to the *Acanthaceae* and are related to such well known plants as *Beloperone* and *Justicia*.

Question: What is the best treatment for soil that is over-limed?

Answer: Use ordinary sulphur, 1 oz. to the square yard. This has been found to reduce the pH (lime content) by 2 points in three months. Follow on by a good mulch of leaf mould or pine needles plus superphosphate.

SPECIMEN TABLE—

This was not as well supported as usual, but there was a fine specimen of *Banksia ericifolia*, the attractive pink hybrid *Ceanothus* 'Marie Simon,' and the orange flowers of *Thunbergia gibsonii*. A cascade chrysanthemum with multitudes of small yellow blooms was recommended as a disease free plant. A plant for identification, with green leaves spotted yellow was *Ligularia kaempferi* from Japan. It is a member of the daisy family and has 2 inch yellow flowers. It needs a moist peaty soil and is fairly hardy. It can be increased by root division or from seed.

MAY—

The May meeting took the form of talks on flowering shrubs and fruiting trees suitable for our Northland climate. In the unavoidable absence of Mr. D. Purser, F.R.I.H.(N.Z.), Mrs. M. M. Martin took over his section of the programme.

Using the specimens on the display table, Mrs. Martin commented on their uses and place in the garden. Members were shown a large range of interesting plant material, among which were a number of Australian species supplied by Mr. McLaren, Parks Supervisor. Australian plants in general needed rather dry and well drained positions. One exception to this, Mrs. Martin said, was the brown, scented *Boronia megastigma* which has its home in the southern part of West Australia where it grows in swampy areas. In New Zealand we often lose it because of insufficient moisture and the consequent attacks of red spider. Other notable specimens were blooms of *Camellia* 'Lady Loch,' *Gordonia axillaris*, *Heterocentron roseum*, *Reinwardtia*, *Hypericum lechenaultii*, and *Chorizema*, this last from Western Australia and needing sunny sheltered and rather dry conditions, but the first three liking moisture, good soil and partial shade. *Reinwardtia*, which comes from India is slightly frost tender but does well in a moderately good soil with shelter from wind, whilst the *Hypericum* grows well in almost any soil or situation, but should be well cut back to prevent legginess. The District Council's colour slides were then used to illustrate a great variety of plants grown in Northland gardens.

Mr. E. Arcus, F.R.I.H.(N.Z.) then followed with instructions on the planting and choice of pip, stone and citrus fruits suitable for our climate.

The following is a list of those recommended:—

- Apples: Early — Gravenstein, Red Delicious.
Mid-season — Giant Geniton, Rome Beauty, Salome.
Late — Granny Smith.
- Peaches: Early — Le Vanquier.
Mid-season — Paragon and Golden Beauty which is best for bottling as it is a good slipstone.
Late — Golden Queen and Black Boy.
- Nectarine: Goldmine and Newboy.
- Apricot: Newcastle.
- Pears: Packham's Triumph, William's Bon Chretien, which needs a cross fertiliser, and Winter Cole.
- Plums. Early — Sharp's Early which is ripe at Christmas, not bitter at the stone and does not need a cross fertiliser.
Mid-season — Doris.
Late — Purple King, Elephant Heart, George Wilson.

Grapes: Isabella, Albany Surprise.

Colour slides showing orchards and, in particular, types of citrus in fruit were shown illustrating points made in the talk.

The following questions were submitted:—

Question: Lettuce has malformed and stunted appearance.

Answer: Seasonal conditions with too much wet and cold.

Question: Peaches making early growth and some in flower.

Answer: Rainy mild weather responsible.

Question: Why does an apple have a watery heart?

Answer: Two diseases of apples in New Zealand are due to high temperatures. One of these called 'glassy heart' fits the description given by the questioner. The authority for the answer is found in the recently published book *Plant Protection in New Zealand* compiled by the D.S.I.R. and issued by the Government Printer.

FIELD DAY—

A field day was held on Saturday, June 4th at a Maunu garden. This was a recently purchased property which had been rather lavishly planted with trees often in unsuitable positions, and provided a good choice of specimens for Mr Arcus and Mr Purser to demonstrate planting, pruning and general care. Points stressed with all fruit trees: Prune when first planted, and do not wait a year. With apples, peaches and pears an open basket shape is desirable, but with citrus an inverted cup shape is required with the fruit on the outer sides where it gets most sun. Keep tallest growing fruits such as plums, pears, peaches furthest from the house with citrus nearer.

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TO

JAPAN & HONG KONG

Applications are now being received by Mitchell's International Tours Ltd., to join a special Garden Lovers and Photographic Tour to Japan and Hong Kong, leaving in April, 1961.

The leader of the Tour is Lydia Bignall, one of New Zealand's most popular garden writers, who is so well known for her monthly articles in 'The Mirror' under the title of 'Our Garden of Endeavour.' The arrangements of the itinerary have just been completed by Mr. Ivan A. Mitchell of Mitchell's International Tours Ltd., who has just returned from Japan full of enthusiasm for the wonderful experiences in store for the fortunate members of this party.

The party will leave Auckland on April 15th, 1961, and will spend three days in Noumea, where a visit will be paid to the most beautiful Aquarium in the world. The colours of the marine life beggar description and each tank is a revelation of exquisite beauty. Two days are then spent in Saigon where a visit is paid to N'guyen-Lue-Street — the exotic flower market. Then on to Hong Kong for five days. Hong Kong is the most fascinating centre of the colourful East — fabulous shopping — fantastic camera shots and heavenly gardens. Due to the fact that some want to sight-see — some want to shop — some want to visit gardens, all touring in Hong Kong has been left optional, but a representative of Mitchell's International Tours Ltd. is standing by to advise and assist members of the party in every way.

In Japan for fifteen days the party will visit gardens and scenic spots in Tokyo, Kamakura, Miyanoshita Spa, Mt. Fuji, Numazu, Kyoto, Nara, Osaka, Yamada, Toba, Nagoya and Nikko.

SPECIAL visits will be paid to world renowned gardens and the ladies of the party will attend demonstrations on flower arranging. After gardens, the Japanese are fanatically keen on photography and the party will be accompanied by camera-wise guides, who will take the party members to specially selected spots where ideal colour pictures can be obtained.

The cost of the Tour from New Zealand back to New Zealand is £591, and the party will be limited. Applications are invited from New Zealanders who are genuinely interested in gardens, landscaping and also from keen amateur colour photographers. Inquiries should be addressed either to Miss Lydia Bignall, c/o "The Mirror", P.O. Box 9242, Auckland or Mitchell's International Tours Ltd., P.O. Box 412, Dunedin, or P.O. Box 675, Auckland.

OBJECTS OF THE INSTITUTE

The objects of the Institute are as follows:—

1. To encourage, foster and improve every branch of horticulture.
2. To exercise all the powers and functions of a horticultural nomenclature and certificating board, including the making of decisions and reports in regard to the nomenclature of plants, and to issue, in the name of the Institute, certificates, medals or diplomas for novelties of merit or new varieties.
3. To assist and promote horticultural education in every way possible.
4. To promote legislation having for its objects the advancement or protection of horticulture.
5. To assist research work in connection with any or all branches of horticulture.
6. To endow or assist any chair, lectureship, or horticultural teaching in New Zealand, in colleges, universities or other educational institutions the Institute may decide upon.
7. To promote the interchange of horticultural knowledge and to co-operate with governments, scientific or other societies or bodies, or persons in any part of the world who may be working along any or all of the lines covered by the objects of the Institute.
8. To undertake or assist in the introduction and acclimatisation of any fruit tree, flowering tree or plant, forest tree, seeds or other form of plant life which, in the opinion of the Institute, should be introduced.
9. To establish, assist or endow libraries, and to obtain by purchase, exchange, or otherwise, books, papers and other publications relating to any or all of the matters covered by the objects of the Institute.
10. To arrange for the carrying out of work of 'bud selection' the testing of new varieties of trees, plants, vegetables and any and all things necessary to the better understanding of tree and plant life and the maintenance or improvement of the standard of such.
11. To arrange for the selection and breeding of any or all classes of trees and plants for testing, and for the supply of certificated propagating material to nurserymen and others on such terms as may be arranged.
12. To carry out, arrange for or assist any object or objects which, in the opinion of the Dominion Council or of the Executive, come within the scope of horticulture, in its widest scope (not excepting forestry or agriculture).

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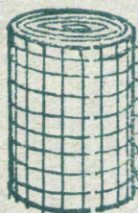
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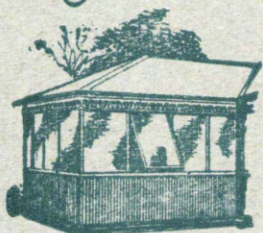
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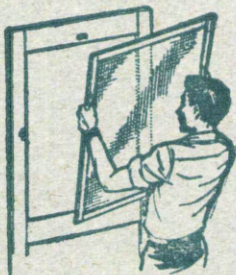
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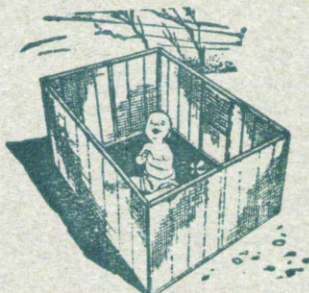
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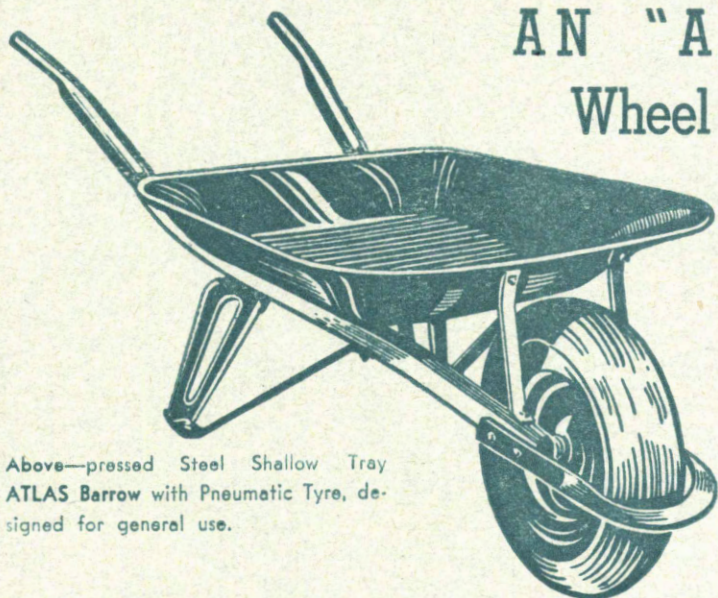
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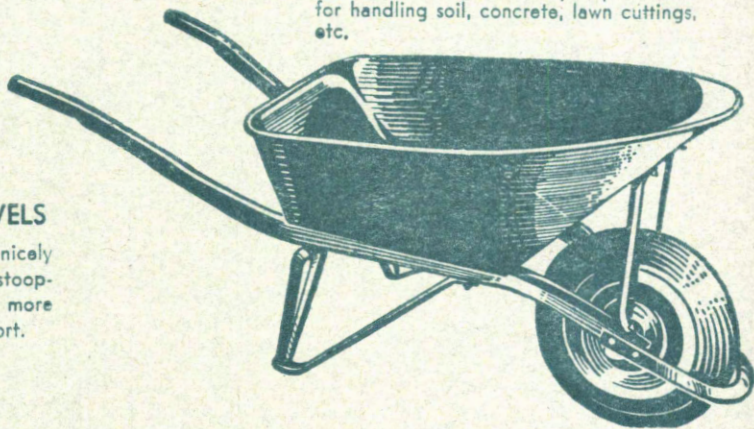
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