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Dominion Secretary:

K. J. Lemmon, A.P.A.N.Z., A.C.I.S., Suite 1, First Floor,
British Sailors' Building, 10 Brandon Street, Wellington.

Correspondence and articles for publication should be addressed to: The Editor, 'New Zealand Plants and Gardens,' Journey's End, Paraparaumu ('phone 154). All enquiries concerning advertisements should be addressed to the Editor.

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NEW ZEALAND PLANTS AND GARDENS

The Official Journal of the Royal New
Zealand Institute of Horticulture (Inc.)

Volume VI

JUNE, 1966

No. VII

PRESENTATION TO
HER MAJESTY QUEEN ELIZABETH, THE QUEEN MOTHER,
by the
ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE INC.

Shortly after the arrival of H.M. Yacht Britannia at the Bluff the above floral presentation was delivered personally by Mr G. A. R. Petrie, N.D.H.(N.Z.), A.H.R.I.H.(N.Z.), Director of City Parks and Reserves, Invercargill, with the following message:

'To Her Majesty Queen Elizabeth, the Queen Mother, as an expression of the loyalty and good wishes of all associated with Horticulture in New Zealand and in appreciation of the personal interest Her Majesty has always shown in Horticulture

from

*THE ROYAL NEW ZEALAND INSTITUTE
OF HORTICULTURE.'*



The following acknowledgment has since been received:

H.M. YACHT BRITANNIA

Dunedin

Dear Mr Living,

18th April, 1966

I am commanded by Queen Elizabeth, the Queen Mother, to thank all members of the Royal New Zealand Institute of Horticulture for the magnificent basket of flowers and for their loyal message of greetings.

Queen Elizabeth is delighted to be in New Zealand again and has been greatly touched by the warm welcome that has been given to her.

Her Majesty is much looking forward to the rest of her visit.

Yours sincerely,

(signed) Frances Campbell-Preston
Lady-in-Waiting

J. F. Living Esq.,
President.

Included in the presentation floral basket to Her Majesty Queen Elizabeth, the Queen Mother, were the following:

Rose 'Josephine Bruce' and Carnation 'Red Sim' (as focal point)

These were surrounded by:

Cordyline australis (a rare lavender form)
Phormium williamsii
Pittosporum tenuifolium 'Purpureum'
Pittosporum tenuifolium 'Garnettii'
Libertia ixioides
Dodonaea viscosa 'Purpurea'
Drimys colorata
Helichrysum bellidioides
Gladioli
Banksia integrifolia

Cypripedium (new hybrids)
Pittosporum ralphii 'Variegata'
Ilebe buxifolia
Celmisia coriacea
Carmichaelia grandiflora
Nothopanax arboreum
Corokia cotoneaster
Leucogenes grandiceps
Beaufortia sparsa
Melaleuca purpurea
Cobaea scandens

It will be noted that there was included a good representation of New Zealand native flora.

THE TORCH LILIES

A. W. ANDERSON, A.H.R.I.H.(N.Z.)

Half a century ago we used to call them red hot poker in Scotland. The big one that can grow to 9ft under favourable circumstances. I later came to know a *Kniphofia uvaria* 'Nobilis' It was the 'Baillie's Poker', a very apt name if you know the derivation. No one reads Scott nowadays, so perhaps I had better explain. The name is taken from the incident in *Rob Roy* when Baillie Nicol Jarvie,

benighted in a lonely inn in the Highlands, is attacked and, finding his sword has become rusted into the scabbard, seized a glowing plough-share and put his assailant to flight. Alice M. Coats in her *Flowers and their Histories* says that in south-eastern Scotland all the kniphofias were known as 'Baillie Nicol Jarvie's Pokers'.

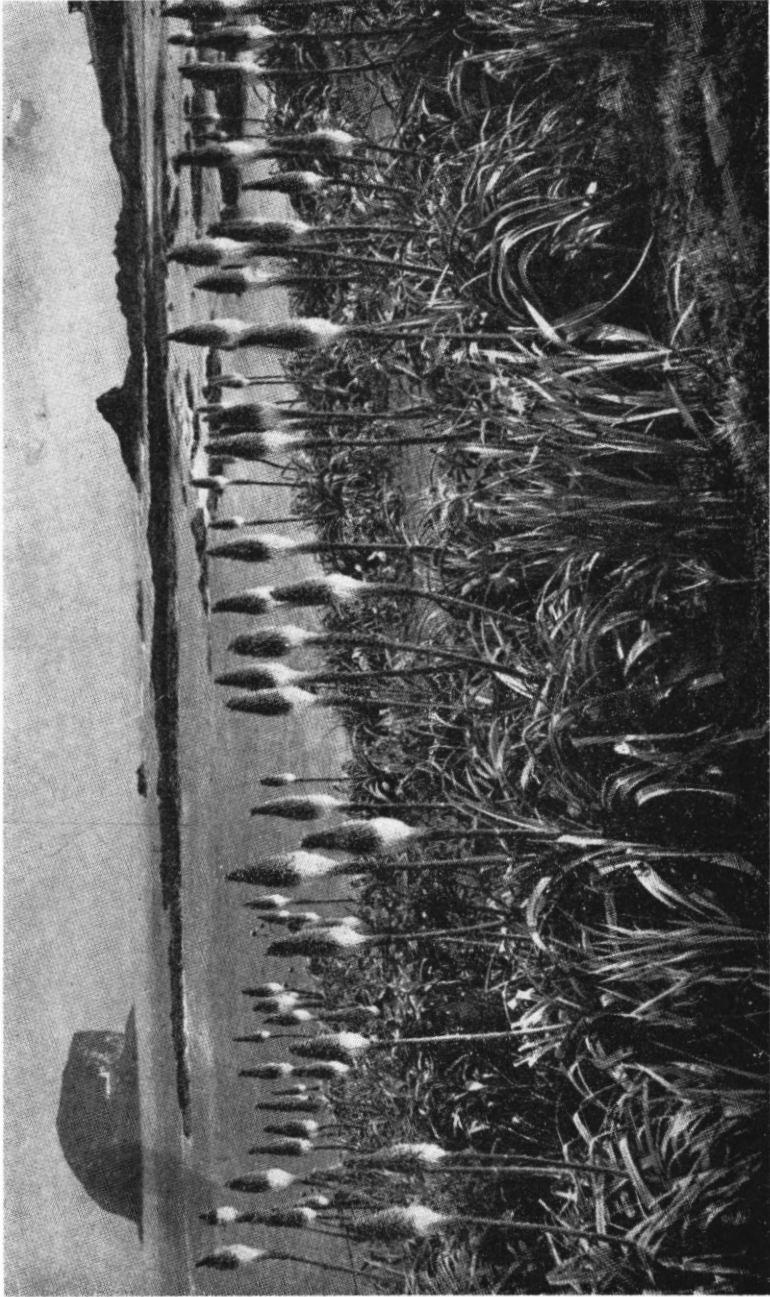
The decline of the common and appropriate 'Red Hot Poker' is unusual in the history of common names of garden flowers. This appears to have been brought about by the disappearance of the open fire combined with the widening of the colour range as more and more species were discovered, and more colourful garden hybrids appeared.

The *Kniphofia* Garden at Kew, which has been in existence since the early years of the century, is a perennial reminder that this unusual race of flowering plants can play a very useful part in landscape work because their great tufts of foliage and stately torches of orange and scarlet lend themselves to the creation of garden pictures. They catch the eye in the distance and maintain the interest when examined close at hand.

A collection of these plants can be very interesting and, carefully selected and interplanted, may give a succession of colour right through from December until early spring, in the milder climates. They are very suitable for planting by the waterside, but I doubt very much if they are used to the extent they might be. We see them massed by the margin of lake and stream, but never in the water itself. Nevertheless, Barclay, Bolus and Steer in their *South African Flowers* when discussing *Kniphofia aloides* (now *K. uvaria*) refer to it as a swamp plant. 'If you have seen the Red Hot Poker growing in one of its native haunts, near the inner edge of a swamp, you will never forget the experience. It is one of the most striking of our wildflowers.'

Coming into bloom in December when they provide colours scarce in the mixed flower border, the torch lilies are worthy of attention. The more robust kinds are highly successful for their architectural value and combine with pampas grass, *Eremurus*, *Yucca* and the coloured forms of our native flax to give bold clumps of variety and distinction in a shrubbery. The later sorts are equally satisfying because their gay plumes contrast in form and harmonise with the autumnal colourings of *Acer*, *Azalea*, *Berberis*, *Enkianthus* and *Viburnum*. The kniphofias are equally valuable in the smaller garden where the many dwarf species and varieties are eminently suited for the flower border. Running through the somewhat limited colour range of the race, they vary in height from 1ft to 2½ft, but most are about 1½ft to 2ft.

The first to be known was *Kniphofia uvaria*, long known as *K. aloides*, which was figured in a book published in Amsterdam in 1644, but the first plants did not reach Europe until 1707. In due course it was named in honour of Prof. J. H. Kniphof of Erfurt.



Kniphofias naturalised in a seashore setting, a unique and effective planting.

Lovers of old plant books will be interested to know that he collaborated with a bookseller named Funke, who built a special printing office for the purpose, to produce a set of 12 folio volumes containing 1200 plates of 'nature prints' of plants. He invented the process used by Buchanan for his *New Zealand Grasses*, more than a century later. The specimens were blackened with printer's ink and printed in a press, those in the German book being afterwards coloured by hand.

The R.H.S. *Dictionary* tells us that *Kniphofia* is a genus of about 24 species and actually cites 35, but in fact over 80 species are now known to be scattered over the cooler parts of Africa, from Ethiopia to the Cape, with a few among the mountains of Madagascar. About an equal number of garden varieties could also be listed, but I am not going to deal with them here. As Farrer used to say, in his lofty way, 'Those who are interested will find an abundance of them in the trade catalogues.'

The following are recommended as being among the best and most distinctive of the species, although their range of colour and growth-form is not really very large. Used as a basis for a collection they could be interplanted with some of the most appealing of the garden hybrids and give colour and interest from early December until after Easter in all but the coldest and driest gardens in the country. They are easy to grow and will flourish in almost any soil. Where conditions are very dry they will grow all right, but are not likely to flower over more than a few weeks. Where cold winters follow hot summers they stand up remarkably well, as in the back country of the South Island. They can be protected by a heavy mulch over the crowns. Cut off the flower spikes at the base as soon as they are past their best. Old well-established plants will respond to division in late spring, when growth is beginning to appear, but they should not be broken up into very small pieces, because they take a long time to recover.

K. breviflora is a dainty little gem with 1½ft stems of yellow flowers easily recognised by its long narrow leaves and very short pedicels. One of the first to flower is *K. praecox*, which, when grown from seed, may give a variation of flowers ranging from a somewhat dull red to a very pleasing pale yellow. Another early one is *K. burchellii* which has more of a presence than *K. praecox*, and is about 2ft tall. Its distinguishing marks are the dark purple mottling of the flower stems, its elegant carriage and the brilliant red and yellow spikes. One of the remarkable things about the torch lilies is that they can provide all the colours of heated iron from the 'dull' to 'cherry-red' and on to 'snowball-white', terms used in the blacksmith's trade for the various stages. I should say that *K. caulescens* comes close to the dull red on opening and fading to pale yellow as the flowers develop. The stiff yucca-like foliage gives the plants a very sturdy appearance.

Those already mentioned all come from South Africa but *K. comosa* has long been something of a mystery. It was thought to be a native of the Canary Islands but is now known to come from Ethiopia. Growing to some 4ft it has dense, rather oblong flower-heads which have the unfortunate habit of opening from the apex downwards. It is the only one I know that produces lateral inflorescences and these open from below upwards. Its distinctive features are the erect bright green leaves and protruding stamens. *K. erecta* is another unusual one which gets its name from the curious behaviour of the red flowers which adopt an upright position as they mature. This is so different from the general run that the flower tubes have the appearance of having been ruffled up the wrong way.

K. galpinii, one of the latest species to make an appearance in our gardens, was introduced into Ireland in 1927 and has become a great favourite on account of its glowing, rich apricot colouring. Only about 2ft high, its flower-heads are not always so compact as they might be, but the best forms that flower for six weeks or more strike a very positive note in the flower border. *K. macowanii* is almost equally valuable, its more desirable dwarf strain being no more than a foot high. The colour is orange-scarlet, almost tangerine, and the semi-erect leaves help to form a plant of great merit.

K. nelsonii is another of the small ones that is well worth growing. It comes from the margin of the Kalahari Desert, and will stand up to more drought than most of them. Belonging to the same group, *K. rufa* should not be overlooked because the loose yellow heads that are red at the apex are borne in great profusion over a long period. It has been used in hybridisation and the well-known 'Goldelse' is one of the best known of its progeny. Some of the hybrids may grow to become yard-high and I think that some of them may be masquerading as strong-growing forms of the parent.

K. foliosa and *K. tysonii* are two species of distinct and elegant plants in which the yucca-like habit is strongly pronounced and are in old age so robust as to be almost sub-shrubby. They, like all the others which have their stems above ground, are not difficult to increase by cuttings taken from the base after the plant has been beheaded to induce it to break away into fresh growth. The 6ft *K. tuckii* is another first class species whose imposing appearance demands a conspicuous position in December when the luxuriant foliage is dominated by the sulphur-coloured flowers, with their tinges of red, are at their best.

We all think of *K. uvaria*, long known as *K. aloides*, as the 'Red Hot Poker', the oldest, most variable and best known of them all. The type and most of its varieties are giants in comparison with most of the others and they are the representatives of the family most likely to be met with in most gardens. The forms of *K. uvaria* are many and varied and it is not unusual to find the best ones such as 'Grandiflora', 'Glauca', 'Maxima', 'Nobilis', 'Saundersii' and 'Zulu-

landiae' listed as if they were distinct species. From a mixed lot of seeds of *K. uvaria* you may get a very wide range of colours, and the glowing incandescence of the best of them is without parallel among flowers in the open border. Then there is the size which may be anything between 4 and 9ft high. It is a misfortune that some of the best of these giants are not hardy in the colder parts of the country. The cultivar 'Glaucæ' may be identified by its narrow grey-green leaves; 'Maxima' is bolder and more massive than the type while 'Saundersii' is among the best of all the autumn-flowering torch lilies.

My favourite is 'Nobilis' that is rivalled in size only by the strain known as 'Zululandiae'. I think it a pity that the very apt name for this great glowing torch, 'The Bailie's Poker', has fallen into disuse, because it stands out among its kin just as the massive ploughshare would have stood out among hot pokers. The name 'Zululandiae' does not appear to have any botanical significance, so far as I know and seems to be no more than a handy appellation for the late and winter-flowering forms. The plant known as 'Winter Cheer' is said to be a hybrid but may be just a selected clone from the general run of the strain. Where it is hardy it is one of the most striking of winter flowers because of the warm colour that is so very effective in the pale sunshine.

There are few plants that return so much for so little attention and will flower over such a long period of the year. The torch lilies will grow almost anywhere and do remarkably well even in odd neglected corners where they attract but little attention when not in flower.

PROBLEMS OF CITY BEAUTIFICATION

R. W. BALCH, N.D.H.(N.Z.) (Dunedin).

In modern towns and cities attempts to beautify streets, the surroundings of buildings and public amenities by the use of plants, presents ever-increasing problems for the horticulturist. Buildings are taller, streets are wider and more complex in design, traffic of all descriptions is denser, while the space and scope for planting gradually decreases. The need for trees, shrubs, flowering and foliage herbaceous plants, and grassed areas, is more than ever necessary, as the countryside retreats, suburban gardens become smaller, and business centres expand. In addition the architectural and engineering creations of today, with their severe lines and harsh colours, are more difficult to blend with the curves and colour tones of nature, than was the mellowness of older buildings.

Most landscape gardeners are fond of plants. They really prefer to design an area in quite a different way to that in which they are required to do on many occasions. They like to take plants suitable

to a particular locality, then create an effective setting in which to display them to advantage and where they will grow well. In cities of today the setting and conditions are usually formed first, then the landscape gardener is given the task of beautifying it with plants. He is confronted with many factors that are not conducive to healthy plant growth. This limits the choice of plants tremendously, the main consideration being that anything selected must be tough and hardy. Conditions that can be encountered are wind tunnels, draughty areas, sunlessness, dust, insufficient moisture or lack of drainage. Conditions of this nature are often impossible to alter. Unnatural soil conditions and weed-infested imported soil must be rendered clean and fertile. Vision must not be obscured, spouting and gratings must not be blocked with fallen leaves, roots must not be allowed to lift sealed areas or disturb foundations. Often most difficult of all is the maintaining of plantings in good and effective order.

Other influences that can make additional difficulties are the presence of overhead and underground services — electric and telegraph cables, water and gas mains and drains of all descriptions. These with their complementary fittings and appliances such as power poles, wires, vents, valves, manholes, etc., can be really crippling in their demands. Pedestrians taking short cuts, vehicles out of control, and straightout theft and wanton destruction, can easily wreck either a new or well established planting. Traffic notices of all descriptions are among the bugbears of street beautification, for they are so often placed amongst plants or on turfed areas. Their colour, shape and size are possibly very necessary to attract the attention of drivers, but they detract greatly from the effect of a carefully planned planting scheme. At night some types of street lighting cause all flower colours to appear as a uniform grey which is a great pity for trees, flowers and lawns, when suitably floodlit, can be very attractive indeed, especially to visitors to a city who have time to spare for strolling in the evenings.

Architects of today are fond of including external and internal plant troughs, window boxes and fixed plant containers in their designs. This is often done without reference to the horticulturist as to their suitability for satisfactory plant growth. The result is that the latter must attempt the well nigh impossible in unalterable conditions.

Here in Dunedin, as in most places of comparable size in New Zealand, streets, roads and motorways are continually being altered or built to accommodate the demands of modern traffic. With these changes comes an ever-increasing number of traffic islands, median strips, clay banks, rock faces, overhead bridge approaches and streams and creeks tamed by concrete walls. All of these may require the use of plants in some form or other to make more attractive or render safer. The main considerations in planning the planting of these features are effectiveness and ease of maintenance. Dunedin's hills can create problems that are not always encountered in cities of the plains. Street plantings can reduce erosion on bare banks, screen the glare of head-

lamps from approaching traffic, define crossings, accent obstructions and diminish reflected light from buildings that have vast areas of glass in their construction. In the selection of suitable plants these factors must be taken into consideration.

Large traffic islands and wide median strips in Dunedin where obstructions to cutting are non-existent or very few, are usually grassed, cut by tractor and gangmowers if possible, or by some form of motor mower. When power poles, notices and other obstructions are present they are planted with shrubs or bedding plants. This is also done when widths do not exceed 4 or 5 feet. Bedding plants are used for central areas where colour for most of the year is desirable, but the expense and labour entailed in raising, planting and maintaining two crops a year, limits the use of this treatment. At present there are between three and four miles of median strips in Dunedin already planted or awaiting planting. Approximately half a mile is grassed, a quarter of a mile is planted with bedding plants, while the remainder is, or will be in shrubs. It is not a simple matter finding suitable shrubs in sufficient quantities to carry out this planting. They need to be inexpensive, compact, preferably evergreen, free flowering, wind resistant, good ground cover plants and generally tough and hardy.

The decision of whether or not to sow median strips and traffic islands to grass is usually determined by the ease of cutting. Where a tractor with gangmowers has room to operate it is often done. A small rotary mower is still necessary to follow up to complete the cutting close to concrete kerbs and around obstructions. When power poles, notice posts and seats are sealed around with concrete or asphalt, trimming of hedges by hand can be practically eliminated.

Spring and summer bedding plants give more colour than any other method of planting, but the extent of this is limited by the number of plants that can be grown, planted and maintained by the facilities available. In median strips damage can occur in several ways. The spilling of powdery substances from passing trucks such as cement, sulphur and other loose raw materials can burn and destroy plants. Vehicles, especially after dark, at times mount low kerbs and can run the full length of a bed with one or two wheels amongst the plants before regaining the road. Corners, in particular, can be cut by traffic unless protected by small concrete walls. Where no provision is made for pedestrians crossing roads, to and from bus stops, tracking through plants is inevitable. When damage to young plants is caused in this way they may be replaced providing a stock of the same plants has been held in reserve. After a few weeks, however, repairs to that particular crop cannot be made, so the display can be partially ruined for the season.

A curious fact that has been noted in windy, dusty areas is that every few years the soil in median strips planted with bedding plants has to be lowered, as the gradual build-up of dust trapped by the growing plants makes the soil level too high so that it dries out in dry weather too

readily. This tends to demonstrate the value of hedges and shelter belts in filtering out wind-blown dust.

Shrub plantings are subject to the same types of damage as bedding plants. Fortunately, the sorts suitable for street use will often shoot away again from the base when crushed and broken, so much of the damage may only be temporary. In steep streets, where poor drivers sometimes lose control of their vehicles in treacherous road conditions, the damage to shrubs in centre strips has at times been devastating. Loss by theft in new planting of good class flowering shrubs is considerable. It seems helpful if these can be planted in large quantities of each sort, so that they may not appear to be as choice as they really are. Any blanks should be replaced immediately before others get the same idea. A type of damage that occurs in all plantings in public places — trees, shrubs and herbaceous plants — is when plants are just pulled out and thrown away or flower heads are wantonly knocked off. Apparently this is usually the work of young people. In some cases it has been because the person responsible has been reprimanded at school or elsewhere, and just has to 'take it out of something or other'.

In Dunedin streets, shrubs that have been established in quantity and are reasonably effective, are evergreen azaleas, both *indicas* and *kurumes*, deciduous azaleas, hardy *ericas* of many sorts — *Erica darleyensis* in particular, *Hypericum* 'Hidcote Gold', *Senecio greyi*. Others are being tried in smaller numbers. Plantings of the smaller growing native *senecios*, *hebes* and *olearias* have also been made.

Before any shrub planting is done it is advisable to allow the strips to lie fallow for a year, so that perennial weeds may be eliminated by spraying and cultivating. Imported soil used to fill them, after road formation, often contains couch, docks, dandelions and thistles. The addition of beach sand in liberal quantities when rotary hoeing helps to improve soil texture.

Where steep banks and rock faces have to be clothed, it helps greatly if the engineers responsible for the road works can be persuaded to erect stone walls, 2 or 3 feet high, at the base on the inside edge of the footpath. The cavities behind can be filled with soil and planted with scrambling shrubs. These in time can link up with other plants put in at the top and growing downwards.

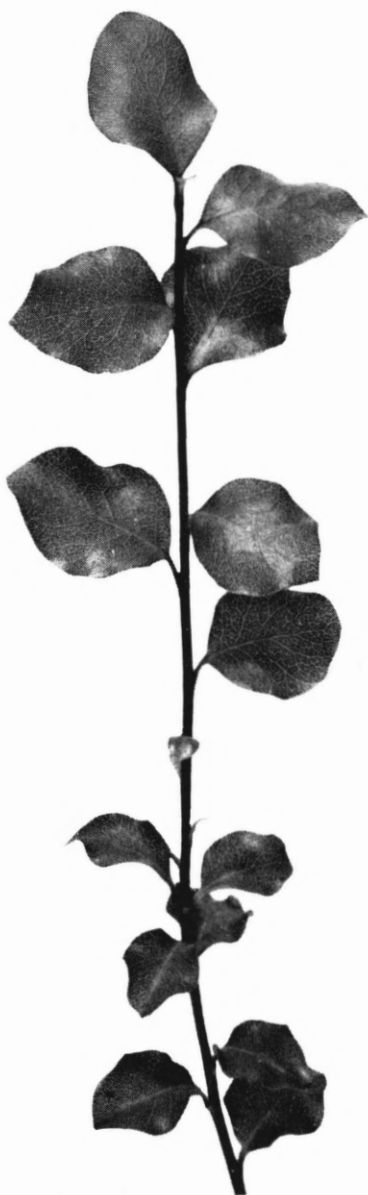
An ever-present factor in street plantings of all descriptions that must always be borne in mind, is the danger from traffic to which workmen engaged in planting and tending the areas are exposed. In many cases they must stand on the roadway itself to do their work. Their only protection is in the form of temporary notices advising traffic that men are working in the vicinity. This is an additional reason for establishing self-maintaining plantings as much as possible, where weeding, pruning and replanting are reduced to the minimum.

PITTOSPORUM TENUIFOLIUM CULTIVAR
'JAMES STIRLING'

W. R. SYKES, B.Sc.(Hons), N.D.H.
(Christchurch), on behalf of the Nomenclature Committee of the R.N.Z.I.H.

This cultivar is characterised by the small size of the leaves. Typical fully-grown ones are roughly broadly ovate or elliptic-ovate in shape and the lamina is 15 to 17 mm. long with a maximum width of 12 to 13 mm. Although these figures just fall within the overall range of size as given for the species itself in the *Flora of New Zealand* Volume I by Allan, the lack of any larger leaves on 'James Stirling' results in the distinct appearance of this cultivar. The leaves are also broader in proportion to their length than in other plants of *P. tenuifolium* which I have observed. Otherwise the leaves have the typical *P. tenuifolium* texture, i.e. thinly coriaceous, and are rather pale green and markedly undulate or wavy. From the cultivated specimens which I have seen it appears that 'James Stirling' has a more open habit than is usual in *P. tenuifolium*.

This cultivar is named in honour of James Stirling, Supervisor Government Gardens, Wellington. Mr. Stirling discovered the original plant when he was inspecting a landslide on the road north of Ruatoria in the East Cape district. The parent tree was apparently of considerable age and size and after an intensive search he found one seed capsule. From the seed inside, nine seedlings were raised, all apparently with the same characteristics as the parent, i.e. as I have outlined above. These plants have been propagated vegetatively and since the stock is uniform they have all been given the cultivar name 'James Stirling'.



Pittosporum tenuifolium cv.
'James Stirling'.

(Photograph — D.S.I.R.)

NOTES FROM THE CHRISTCHURCH BOTANIC GARDENS

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

Since last writing these notes the weather has continued to follow a rather erratic course, more or less going from one extreme to the other. There have been rather prolonged periods of dull cloudy weather followed by similar bright sunny periods. Rainfall has been below average and there have been rather long spells of dry weather. The longest being seven weeks without a major fall of rain. On the whole, March was a dull and rather wet month while April was mild and sunny. Sunshine for April was 20% higher than average and practically the entire month's rainfall was recorded on the one day.

The effect of this weather on plants has been most noticeable. Some bedding displays went off very quickly with the dull wet weather of March, while others were prolonged by the same weather. The absence of frosts in April enabled these displays to continue until late in the month. The clear sunny days of April were favourable to autumn colouring and this season some beautiful displays were evident.

In Christchurch there is probably less variety in plants in flower during May than at any other time of the year. Even during the mid-winter months of June and July there are more species and varieties of plants to be seen in flower. One group of hardy shrubs which lives the autumn and winter months is the species and varieties of *Mahonia*. They are useful for their foliage, flowers, or fruits and some combine all three.

One or two mahonias are the most popular with the New Zealand gardeners, and with their fine bold foliage and conspicuous yellow flowers they make very handsome garden plants. The genus was originally named *Odostemon* in 1817 but this name was closely followed by *Mahonia*. Later still both names were largely dropped and all of the species were generally referred to *Berberis*. However, the name *Mahonia* was conserved against *Odostemon* and it is now well established except among a few horticulturists. The genus contains about 109 species and it is surprising that so few are in cultivation. In fact there are probably some very fine garden plants awaiting introduction. Only four species are commonly cultivated in New Zealand.

One of the oldest species in cultivation in New Zealand is *M. aquifolium* which is found in North America from British Columbia to Washington and Oregon. It is a spreading shrub up to 6 feet in height with shining foliage, and in Christchurch flowers from September till late October. Leslie Ahrendt in his monograph states that most of the plants grown in Great Britain as *M. aquifolium* are in fact hybrids between that species and *M. repens*, or *M. pinnata*. Various plants in the Christchurch Botanic Gardens bear this out as there is a distinct variation in habit and appearance. Some have the shining dark green foliage and bushy habit of *M. aquifolium* while others have a low habit, spread rather widely by stolons and have the dull rather glaucous foliage

of *M. repens*. The rather wide-spreading stoloniferous habit of hybrids between *M. aquifolium* and *M. repens* makes them ideal for ground cover under trees and other difficult places but they are not suitable for planting among choice shrubs.

Some of these hybrids have at different times been named as varieties of *M. aquifolium*, however, they all have petals which are shorter than the inner sepals; a character which testifies to their hybrid origin. *Mahonia* x *wagneri* is a shrub growing from 4 to 6 feet in height with dull, greyish green leaves which have three to five pairs of leaflets. It is apparently a hybrid between *M. aquifolium* and *M. pinnata*. As growing in Christchurch it is quite neat and not unattractive, but not to be compared with *M. x undulata*. This hybrid was imported from L. R. Russell's nursery in England about 1951. It is intermediate between *M. aquifolium* and *M. pinnata* and its characters may be regarded as opposite to those of *M. x wagneri*. It is a handsome shrub growing from 5 to 8 feet in height and has lustrous dark green foliage which shines in the sun. The bright yellow flowers are produced in abundance from early August until October. Altogether it is a very good garden shrub.

Throughout New Zealand some confusion exists concerning *M. japonica* and *M. bealei*. These two are closely related, both come from China, and to add to the confusion the latter has been listed by some authors as a variety of the first. The differences between the two have not always been made clear and both have been widely cultivated, usually with their specific names reversed. Actually they are easily distinguished, *M. bealei* being recognised by its very large and broad terminal leaflets. The two species hybridise and with some plants grown as *M. japonica* there may be uncertainty. Plants grown in Christchurch as *M. japonica* mostly show some evidence of hybridisation. Both species are first class shrubs with very handsome foliage and a long flowering season. *M. japonica* eventually grows into a spreading shrub up to 10 feet or so in height and more across. The pendulous racemes of flowers are up to 10 inches long and are produced for quite a long period, any time from April till September. It is a good shrub for growing in shady places and it is very drought resistant. *Mahonia bealei* is a slightly smaller shrub and with its bolder foliage is a little more impressive. The flower racemes are shorter and erect and are another character which serves to distinguish it.

Of the species of *Mahonia* grown in this country, the one which has caught the fancy of most gardeners is *M. lomariifolia*. This species is a native of Yunnan and S. Szechuan where it grows as a shrub in shady, moist gullies or under mixed forests. It was first cultivated and distributed by Major Johnstone of Hidcote Manor, Gloucestershire, from seed collected on George Forrest's last journey in Yunnan. It is a handsome shrub of unusual appearance and its narrow habit makes it more suitable for small gardens than *M. japonica*, or *M. bealei*. In Christchurch it flowers between March and May, and the tall stems with a

rosette of foliage at the top and the numerous racemes of bright yellow flowers clustered in the centre of the rosette make it a striking plant in the garden.

The last species of *Mahonia* cultivated in the Christchurch Botanic Gardens is *M. fortunei*, a species which comes from Hupeh in China. It was first collected by Robert Fortune who found it cultivated in a nursery in Shanghai. It is a small shrub only growing 3 to 6 feet in height with erect, unbranched stems. The leaves are up to 8 inches in length and with long, narrow pinnules 3 to 4 inches long and about $\frac{1}{2}$ inch wide. The flowers are produced in the autumn, generally from March until April. It is interesting rather than beautiful and not to be compared with the other species.

CORRESPONDENCE

Dear Mr Editor,

I have just been reading the December issue of *New Zealand Plants and Gardens*, for the continued sending of which I am so grateful to you. In it I note with great interest the new Award of Garden Excellence. This is, of course, the equivalent of our Award of Garden Merit. Two plants in particular, included in the first list of plants to receive the new award, rather surprised me. The first was *Campanula poscharskyana*. This species was introduced to cultivation by my late father, and he was heard to remark, some years after it had become well established, that it was the only plant he regretted having discovered! In this country it can be a very definite weed, taking possession of considerable areas of ground, and smothering all neighbours. Admittedly, it is a very beautiful plant, but it must be used with caution.

The second plant is *Dianthus* 'Mars'. Here, this is a plant which, to borrow one of Clarence Elliott's comments, 'always has one foot in the grave'. Handsome though it is, it is nearly always short-lived and often flowers itself to death in a couple of years. I shall be interested to know if these plants behave differently in New Zealand. Certainly, neither plant would have been given the Award of Garden Merit in this country.

Incidentally, the R.H.S. has recently formed a new, and important committee, of which I am honoured to be a member, to review the whole field of plants cultivated in Britain and to recommend to the Council those which they consider worthy of the A.G.M. This will be a great improvement upon the method hitherto pursued, of rather 'hit or miss' recommendations, for the committee is meeting four times a year and going through lists of plants alphabetically and systematically in search of worthy recipients of the honour.

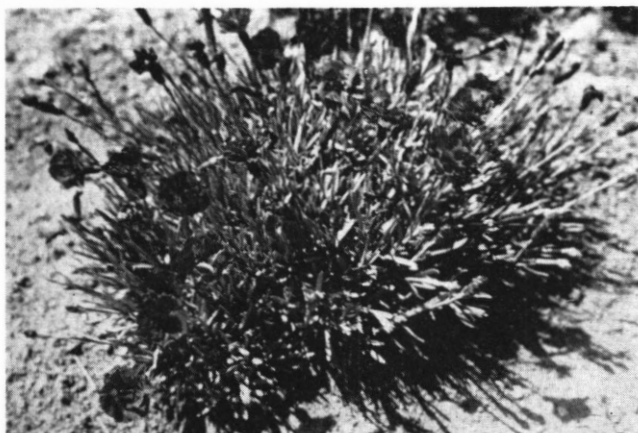
I was also interested to note amongst the plants to which your own award has been given, *Sternbergia lutea*. The point of particular interest being that it appears to have retained in N.Z. its autumn-flowering habit, having, apparently, adapted itself to the move over the equator.

All good wishes,

Yours sincerely,

Will Ingwersen, V.M.H.

East Grinstead, Sussex.



Dianthus 'Mars'
(see pages 308,
310)

(Photograph—
H. B. Redgrove)



Campanula poscharskyana (see pages 308, 310)

(Photograph — H. B. Redgrove)

Dear Mr Editor,

Members of the A.G.E. Committee were delighted on receiving Mr Ingwersen's letter which you rightly, and so thoughtfully, sent to us for comment. We were pleased that Mr Ingwersen expressed great interest in the Award of Garden Excellence and correctly interpreted the scheme to be the N.Z. equivalent of the well known and much appreciated R.H.S. Award of Garden Merit. His surprise at finding two plants, namely *Campanula poscharskyana* and *Dianthus* 'Mars', in our first list of awards is of considerable interest, highlighting the importance of N.Z. having a list of recommended plants for conditions in this country rather than having gardeners rely on recommendations from overseas.

In accordance with the accepted procedure for making the Award, the committee is influenced in the first place by the replies received from District Councils, Horticultural Departments of the Agricultural Colleges, the H.T.A. and other interested people.

In the case of *Dianthus* 'Mars', the comments could be summarised as follows: No comment, not generally known, only moderately successful, good when lime is added, good, very good, very popular with rock garden enthusiasts, an excellent rock plant but rather small for the border, while one District Council would prefer the variety 'Mrs Clark' in preference to 'Mars'.

The Committee also considers the plants recommended for the Award in the light of personal experience, and one of us (Mr H. B. Redgrove) has this to say about *Dianthus* 'Mars'.

Dianthus 'Mars': I have grown this plant for many years in England and although on sandy soil in Kent found the plant fairly perennial. I agree that it did frequently appear to flower itself to death but in N.Z. I have not observed any unusual tendency to die out. In my Auckland garden on clay and with a rainfall of 75 inches per annum, I have plants growing in three different positions which have not been replanted in 6-10 years and during that time many cuttings have been taken from them. The perpetual flowering habit is very marked and flowers are usually produced during nine months of the year with the main flush in November. The illustration shows a specimen of this plant flowering in Palmerston North. It was at least two years old when the photograph was taken, and was a picture of health. The flowers are fragrant.

The comments on *Campanula poscharskyana* were of a similar nature: No comment, not generally known, reasonable, should be given some thought, good, very good, particularly good ground cover, well worth planting but prefer the dark blue variety 'E. K. Toogood'.

Mr Redgrove has this to say about *Campanula poscharskyana*:

'This species from Dalmatia is certainly vigorous and under specially favourable circumstances could be too invasive when planted

in an open fertile soil. However, it is as a ground-cover plant and as a plant for crevices in stone walls and paving that this *Campanula* excels. Its nearly evergreen foliage and the neutral colour of the flowers are both advantages when it is used as ground cover. It is quite at home on clay soils as well as more fertile ones. The photograph shows the plant's ability to fill a wall crevice. I feel that many thousands could be used in the city of Wellington with great advantage.'

The A.G.E. sub-committee in thanking Mr Ingwersen for his letter and comments consider that, when account is taken of the performance of these two plants in N.Z., they were justified in giving the Awards.

Yours sincerely,

A. Farnell (Convener).

Sub-committee: J. M. Dingley, J. A. McPherson, H. B. Redgrove,
A. Farnell.

RANUNCULUS PAUCIFOLIUS KIRK

PROFESSOR L. W. McCASKILL

This plant is confined to a basin on the Castle Hill sheep run 60 miles west of Christchurch. The area on which it grows is situated at an altitude of 2500 feet and is composed entirely of rocks and debris weathered from massive piles of Tertiary limestone.

The height of the plants is rarely four inches, more commonly less than two inches. Leaves were originally described by Kirk as being three to eight in number (hence the specific name) but under present freedom from trampling and other disturbances by stock, plants with over 40 leaves are found. (A plant in cultivation at the Castle Hill homestead had 200.) The leaves are radical, on rigid petioles, with the blade up to two inches across, deeply lobed, greyish-green in colour, coriaceous and deciduous. The flowers which appear in October are up to two inches in diameter, have five pale-yellow sepals and five to ten golden-yellow petals. The whole plant is hairless.

Arnold Wall studied the plant over a number of years from 1918 and successfully cultivated it in his Christchurch garden. (It was also grown for many years in the rock garden of the Royal Botanical Garden, Edinburgh.) Wall described it as growing only in an area of about 300 yards by 60 yards. Nearly all were on ground sloping at 6-8deg; few were found on level spots and none on very steep ground. He counted 70 plants in 1919 and thought there might be a total of 100. Wall commented on the fact that if the area is kept bare the debris tend to blow away and the plant has nowhere to live; if the material piles up the plant may be buried; if the material becomes stable a closed association develops and the plant may be crowded out and die.

In 1940, W. B. Brockie, then of the staff of the Christchurch Botanic Gardens, made a study of the area and recorded 75 plants. He was interested in the effects of stock trampling and in 1940 fenced a small area containing two plants each with four leaves. Into the enclosure he transplanted two other plants. The statistics eight years later were as follows:

Undisturbed plants	a. 23 leaves, 6 flowers
	b. 14 leaves, 5 flowers
Transplanted plants	c. 35 leaves, 7 flowers
	d. 24 leaves, 9 flowers

Numbers of seeds were produced, were sown within the fence and developed into vigorous plants. It was obvious that disturbance by stock was an important factor in the welfare of the plant.

In 1942 the Annual Conference of the Royal New Zealand Institute of Horticulture was asked by its Canterbury Council to take steps to have the *Ranunculus* preserved. Part of the land was freehold, part Crown leasehold. Pending survey and further negotiations, the owners of the run agreed that the area could be fenced. The Department of Lands and Survey made funds available to L. W. McCaskill of Christchurch to have the fencing carried out. Fencing materials were very difficult to obtain and the full story of how they were procured cannot even yet be told; but obtained they were and in March, 1948, the fence was erected by students of Lincoln Agricultural College. A count of plants at the time showed the numbers to be down to 32.

The first result within a year was a spectacular increase in the number of plants to 135, many of them new seedlings. (It seemed obvious then that stock disturbance must have been a major factor in preventing or severely reducing increase from seed.) But within a year or two stabilisation by other vegetation, both native plants (especially *Poa acicularifolia*) and exotic weeds, appeared to threaten the welfare of many of the plants. The policy was adopted then of sowing seed and later of transplanting seedlings and divisions of mature plants to other parts of the reserve. In this way, several new sites of varying aspects and stability have been colonised. By 1963, there were at least 160 plants and the estimate at November 1965 is that the number approaches 200.

To ensure the health and vigour and therefore perpetuation of the plants in the more stable areas, competing vegetation has been removed over an area several square feet round each plant. If this practice proves successful it will be continued.

The Manager and part-owner of the Castle Hill run, Mr R. A. Blackley, was most helpful in assisting the Department of Lands and Survey to have the fenced area legally reserved. A survey in 1953 showed that an area of 2 ac.-0r.-32p. would be required from the pastoral run and 13 ac.-2r.-20p. from the freehold. The freehold area was donated by the owners.



Castle Hill Reserve, the Home of Ranunculus paucifolius Kirk.
(see page 311)

(Photograph by R. C. Blackmore, Lincoln College)



Ranunculus paucifolius Kirk (see page 311).

(Photograph by R. C. Blackmore, Lincoln College)

On 16 July 1954, pursuant to the Land Act 1948, the area of 15 ac.-3r.-12p. was formally gazetted as a reserve for the preservation of native flora. This means that access to the reserve is permitted only by obtaining the written authority of the Commission of Crown Lands, Christchurch.

References

Kirk, T.: 1899 *Students' Flora*.

Wall, A.: 1920 *Transactions N.Z. Institute*.

Brockie, W. B.: 1946 *Christchurch Domain Board. Bull. No. 2*.

Appendix

The reserve also contains several other interesting native plants. Among them being:

1. Barest areas: *Myosotis colensoi*, *Lepidium sisymbrioides*.
2. Open formation: *Pimelea prostrata*, *Nothothlaspi rosulatum*, *Poa acicularifolia*, *Anisotome enysii*, *A. aromatica*, *Carmichaelia monroi*, *C. corrugata*, *Wahlenbergia albomarginata*, *Ranunculus monroi*, *Raoulia australis*, *Senecio haastii*.
3. Nearly-closed formation: *Plantago spathulata*, *Festuca novae-zelandiae*, *Raoulia subsericea*, *Vittadinia australis*.

NOTES FROM AUCKLAND

P. J. JEW, N.D.H., N.D.H.(N.Z.), A.Inst.P.A.(G.B.)

The month of May marks the beginning of the traditional planting season for hardy trees and shrubs and this year the pattern of local weather has encouraged a prompt start. The bright sunny periods broken by odd days of heavy rain have not set any records but have certainly been favourable for gardeners and plants alike.

Coinciding with the opening of the season was the annual 'Tree Week' sponsored by the Tree Society. The work of this organisation is to foster the love of trees and encourage the wise planting of trees — the right tree in the right place. Such a project merits the support and assistance of all Auckland horticulturists when the size of the task is realised. Over three thousand homes have been constructed in the area during the last twelve months, and their new owners are at varying stages of shaping gardens, to say nothing of all those replanning their quarter acre lots. The task is magnified by the fact that much of the current housing development is taking place in districts with heavy clay soils in which it is not easy to grow plants. However, existing gardens in these areas do indicate that the growing of suitable trees is not impossible and it requires little aesthetic appreciation to assess their value in the urban landscape. The skilled advice necessary to ensure successful planting is often more time consuming than one

can reasonably expect the plant retailer to provide even if he is so equipped. Perhaps it is a field in which the local District Council can play a greater role.

Disappointments often arise due to the fact that planting methods used do not always reflect the same thoroughness displayed in choosing the plants. The owner hopes to enjoy years of pleasure from these permanent assets and yet, due to haste or ignorance, he fails to give them a start which will ensure more than mere survival. The never ending weeks of wet weather in an Auckland winter so often tempt him to get the plants in, irrespective of soil condition. The trouble is further aggravated by digging the planting holes into heavy clay which can only act as basins collecting surface water. Some form of drainage from the lower side of the holes can correct the situation but a more reliable means is to raise the immediate planting areas and follow up with regular and generous mulchings. It is surprising the range of trees that can be grown on heavy soils with this technique which does encourage most of the roots to remain in the surface layer. However, in time the roots do travel a considerable distance, sometimes impoverishing adjacent borders and rising above the surface of the lawn.

Soil types and conditions do vary considerably throughout the region but it is apparent that certain types do well in most areas including those with the heavier types of soils. One might term these plants 'sure doers' and it is taking time for some of them to be recognized as such. So often the promise of bright and showy flowers tempts one to choose something quite unsuitable, which will give no structural value to the garden. In the home-garden the one or two trees chosen are such important and permanent features that the choice must be sound. There should be every chance that they will flourish and equally important every guarantee that they will not grow so large as to cause embarrassments within the foreseeable future. How often deviations from this principle are countenanced by all types of excuses.

One of the most attractive and hardiest trees to fit this specification is the Silver Dollar Gum, *Eucalyptus cinerea*. A medium sized tree of quick growth it is essentially grown for its silvery-blue foliage which is also popular for floral work. Coastal winds and heavy soils appear to have little effect on this New South Wales tree. The creamy flowers generally pass unnoticed against the grey foliage. Another gum suitable for comparable soils is *Eucalyptus leucoxylon* 'Rosea', often called the Winter Flowering Gum, although most specimens in Auckland flower in early autumn. The dense axillary clusters of red to pink flowers, although inconspicuous compared with some species, are honey-laden and attractive to birds. Both these trees are suitable for the medium sized garden, and have an added advantage in that they tolerate hard pruning. *Eucalyptus ficifolia* is certainly the most popular of the ornamental gums with its terminal clusters of brilliant scarlet flowers but it is not a tree for these cold waterlogged soils.

Perhaps not so rapid in growth as the gums but worthy of a place in any home-garden is the West Australian Willow Myrtle, *Agonis flexuosa*. This elegant tree of attractive weeping growth habit will rarely exceed 15 feet in height, and the open type of growth fits it for the smallest of gardens. Small white scented flowers are clustered along the growths in spring and these are followed by young foliage tinted coppery-red. All but the heaviest of soils appear to suit it in practically any situation. A larger member of the genus is the Juniper Myrtle, *Agonis juniperina* which is equally graceful in habit producing masses of white flowers during the winter months. The use of these for floral work and its rapid growth have made it a firm favourite for many situations. Both species are the better for a light trimming after flowering but care must be taken not to destroy their natural shapes.

Difference of opinion is sure to arise when defining what constitutes a tree as compared with shrubs and such subjects that could be questioned are the camellias of the *sasanqua* group. However, the 12 to 15 feet of growth made by vigorous varieties such as 'Hiryu' and 'Rosea' give the character of a tree to many gardens, even on heavy soils, when planted on the surface and mulched regularly. Such attention is rewarded by a profusion of flowers in autumn when often there is little of interest in a garden. A further though not final virtue possessed by this decorative group of plants is their ability to recover from severe pruning.

The Cootamundra Wattle, *Acacia baileyana* must certainly rank as one of the showiest and most popular trees in northern home gardens. Its ability to thrive in most situations and the winter flowering habit outweigh its reputation of being shortlived. However, heavy pruning after flowering can prolong its life as well as enhance its appearance.

An unusual though reliable tree for planting in these problem areas is the Australian Coast Honeysuckle Tree, *Banksia integrifolia*. This rapid growing species of dark green leaves with silvery reverse produce greenish-yellow cones in generous numbers during the autumn.

It is understandable that at least one native tree is worthy of selection for such home gardens and the lemonwood, *Pittosporum eugenioides* shows an ability to thrive in difficult inland situations. Even under larger trees it will show off its pale green foliage to good advantage. The variegated form is extremely popular, but it appears to lack the characteristic shape of the type.

For those very difficult coastal situations an excellent choice is *Lagunaria patersonii*. The common name of Norfolk Island Hibiscus conjures up false ideas and possibly accounts for its lack of popularity and consequent shortage on the market. One need not be put off by catalogue descriptions of its height and rate of growth. Although it may ultimately reach 40 to 50 feet in height its pyramidal habit restricts its spread and the rate of growth even with good treatment is far

from rapid. Its dull green sage foliage with whitish reverse is attractive in itself and the rosy-pink to mauve-pink flowers although solitary and axillary are produced in sufficient numbers during February to draw interest. All the same its hardiness is sufficient to warrant its choice for the larger home garden or beach section.

Although no mention has yet been made of deciduous trees it does not infer that they are considered any way inferior in this climate.

Possibly the showiest of small deciduous trees for the difficult situation is *Malus* 'Profusion'. Flowering in late spring with a wealth of pure wine-red flowers, this small tree is destined to become more popular when better known. Its hardiness and freedom of flowering, from the season it is planted, are qualities not easily matched.

In the small garden not open to cold winds, a deciduous tree which appeals to many is the Japanese Maple, *Acer palmatum*. Quite apart from its many forms this tree gives character to a garden and tolerates a wide range of soil conditions. Even in the north one is generally permitted some display of orange-red autumn foliage.

A deciduous tree which really thrives on the heavy soil is *Melia azedarach* (Pride of India). This spreading shade tree with glossy ash-like leaves, changing to light gold in autumn, is little seen in home gardens yet, although it has shown its worth in the district as a street tree. The fragrant lilac-coloured flowers in the spring are certainly overshadowed by the clusters of yellow beadlike fruit which follow and persist into the winter.

Pistacia chinensis is a comparatively recent introduction which has already shown its worth on heavy soils in the area. The pinnate foliage assumes outstanding autumn colourings even in Auckland and on the female trees the roundish red berries are produced in generous bunches. It does not appear to exceed a height of 15 feet on these soils.

Provided shelter from strong winds is available, *Prunus campanulata*, the Taiwan Cherry is indeed a sight in late winter with its profusion of pendulous bright cerise-red bells on the upright branches. The attraction it is to the honey-loving birds adds to its interest in a garden.

A very firm favourite for Auckland gardens is *Liquidambar styraciflua* and it is particularly suitable for the heavier soils provided ample space is available.

Its character is soon lost however, by indiscriminate pruning to keep it within bounds. The only way of ensuring that the specimen is of good autumn colourings is to select it in the nursery rows at the appropriate time. Equally popular is the silver birch, *Betula pendula* but the number of good specimens on heavy soils are limited since it requires an unrestricted root run to produce the characteristic weeping growth. This can be achieved on heavy soils by generous mulchings which encourage lateral rooting on top of the impervious clay.

No survey of trees on the heavier soils would be complete without mention of *Juniperus chinensis* 'Albo-variegata'. It can be seen thriving in the most difficult of situations and although of slow growth eventually produces a tree of unusual shape. The patches of cream flecked throughout the grey-green foliage make it an attractive evergreen.

Any selection of trees naturally is coloured by personal preferences, but these notes do at least indicate that there is no need for planting forest giants such as a twisted willow *Salix matsudana* 'Tortuosa' or the silky oak, *Grevillea robusta*, on that quarter acre section of difficult soil.

GROUNDS DEVELOPMENT AT KURANUI COLLEGE, GREYTOWN

GENERAL SHRUBBERIES

By D. BRAMLEY, M.A. (*Head of Social Studies and Horticultural Departments*)

Kuranui College is a multi-course co-educational college opened in 1960. It has over 800 pupils gathered from approximately 400 square miles and replaced the secondary departments of the four District High Schools.

The architect's plans for the college contained little in the way of garden planning, and the writer welcomed this chance to try his hand at large scale garden planning. Detailed plans to scale were drawn up and these included provision for one large shrubbery (approximately 1,500 feet long), several smaller shrubberies, a native corner and alpine rockery, evergreen and deciduous specimen tree plantings and two smallish herbaceous borders.

It was decided to carry out half the development in 1960 and the remainder in 1961. The areas to be used were marked out, and a subsoiler used to loosen the soil. The soil posed problems. The topsoil of about 1 foot was generously provided with many boulders. The actual soil is a darkish loam (pH6) thinly spread between the boulders in the top foot of earth.

The areas were dug over and the worst of the stones removed. Future positions of shrubs were marked with stakes and holes dug about 3 feet 6 inches square and 2 to 3 feet deep. Stones were removed and soil put back into these holes. The bulk of this tedious work was carried out by the Horticultural Course pupils.

The shrubs selected had to be able to stand considerable wind, heavy frosts in winter, soaking southerly rains and hot dry summers. The usual factors of spread of flowering, height, balance of variegated, berried and flowering shrubs were taken into account also. Some shrubs were donated and others bought from New Plymouth, Palmerston North and Masterton out of a grant provided for grounds development. As the shrubs came to hand they were planted by the pupils (following the detailed plans drawn up), and the bulk of the inter-

vening ground was covered with sawdust from a nearby mill. Sturdy name sticks were made, painted white and labelled in black lettering. The first year's growth was generous and consequently rewarding. This encouraged us to push ahead in 1961 with the completion of the plan.

The newer areas were much slower to become established, probably because of a dryish spring, heavy winds and hot summer.

As there are approximately 300 shrubs in the general shrubberies it is not intended to review them all but an endeavour will be made to cover the best represented groups.

The *Ceanothus*, all of which are doing well in these conditions, are represented by *ramulosus*, *edwardsii*, *thrysiiflorus*, *papillosus* 'Roweanus', 'Marie Simon'. The acacias have provided quick shelter as well as beauty and include *baileyana*, *longifolia*, *prominens* and *riceana*. Banksias have grown well and withstood the heavy winds and dry summers. We have *spinulosa*, *ericifolia*, *collina*, *integrifolia* and *grandis*. Forsythias have been planted at intervals to provide bright patches in early spring—'Spring Glory' (the most profuse), 'Beatrix Ferrand', 'Lynwood Gold' and *intermedia* 'Spectabilis'.

There are a number of weigelias all of which add valuable colour in spring. In addition their hardiness and ease of growth make them admirable subjects for our hard conditions. 'Eva Rathke', 'New Red', 'Newport Red' and the old pink are our chief varieties. We planted about 18 *Cytisus* or hybrid brooms including the eye catching 'Lord Lambourne', x *praecox* and 'Burkwoodii'. As these are generally short-lived they were planted to give interim shelter and colour, and are gradually being removed as the more permanent shrubs grow. *Grevillea sulphurea*, *oleoides* 'Dimorpha', *rosmarinifolia* and *asplenifolia* are well established but liable to wind damage. One specimen of *G. rosmarinifolia* has twice lost large pieces from its centre.

The hollies are represented by *Ilex aquifolium* 'Golden Queen' a beautiful but slow growing variegated specimen, and by the interesting *Ilex paraguariensis*, from the leaves of which South Americans brew Yerba Mate tea.

The conifers have not been neglected and are used as specimen trees and as a contrast to the usual rounded shrub shapes. The beautiful *Cedrus atlantica* 'Glaucu', *Cedrus deodara* and *Cedrus deodara* 'Aurea' are well established. The showpiece of the junipers, the slow growing *Juniperus coxii* or 'Coffin Juniper' from Burma is now about 4 feet high. *Juniperus chinensis* and the prostrate *Juniperus communis* 'Depressa Aurea' are also well established. *Chamaecyparis obtusa* 'Crippsii', *Chaemaecyparis lawsoniana* 'Stewartii', *Cryptomeria japonica* 'Elegans Aurea' and *Cupressus sempervirens* 'Stricta' are other conifers which have been planted.

Autumn and winter colour is provided by the berry section which includes:— *Cotoneasters harroviana*, *horizontalis* and *conspicua*, *Crataegus crenulata*, *Pyracantha angustifolia*, *Stransvaesia davidiana*, *Symphoricarpus racemosus*, *Sarcococca ruscifolia* and *Aucuba japonica*.

Extensive use has been made of the New Zealand native shrubs both in the general shrubberies and on the southern boundary as an informal 9 chain hedge. The grey foliage and yellow flowers of *Senecio greyii* and *S. compactus* appear at intervals throughout the shrubbery to provide quick ground cover and all the year round colour. Hebes supply a variety of colourful flowers and foliage and include *H. hulkeana*, *H. andersonii* 'Variegata', *H. macrocarpa* 'Latisepala' and some hybrid forms of *H. speciosa*. Other natives include *Dodonaea viscosa* 'Purpurea', *Hoheria populnea* 'Alba' and 'Aurea Variegata', *Pittosporums eugeniioides*, *ralphii* and *ralphii* 'Variegatum' and *tenuifolium*, *Sophora tetraptera* and *Pomaderris apetala*.

The main planting of large deciduous trees was made on the eastern boundary with only moderate success. The most successful have been *Betula pendula*, *Platanus orientalis* and *Quercus palustris*.

Because of difficulties of climate, soil and situation our hardest plants to grow have been the ericas, azaleas, rhododendrons, kalmias, camellias and to a certain extent the daphnes. The presence of lime from extensive concreting works did not help, but steady progress has been made with acidifying the necessary areas of soil and also improving its much needed moisture retentivity by mulching, etc. As shelter increases we hope to add more of these beauties by creating special local climate and soil patches to suit them as we have already done with *Magnolia stellata*.

Roses have not been neglected and despite windy conditions have added their patch of colour in bush and climber form. They include the well-known varieties 'Queen Elizabeth', 'Frensham', 'Peace', 'Perfecta', 'Burnaby', 'Eden Rose', 'Faust' and 'Paul's Scarlet'.

It is our hope that all pupils at Kuranui College have gained something from their surrounding, and that the more earnest will be able to carry some of the ideas behind the plantings into their adult life.

THE NATIVE CORNER

By A. B. FORDYCE, B.Agr.Sc. (Head of Science Department)

Although native plants feature elsewhere too, the main planting of indigenous flora is confined to the north-western corner of the grounds. Here, a more or less oblong area fronting on to a border some 25 yards long, contains 147 species 69 of which are in a small alpine garden.

The two main developmental problems have been summer drought and exposure to westerly winds. The original soil, a silty loam overlying river gravels, has been improved by removal of the larger boulders and extensive mulching with sawdust to enhance organic matter status and conserve moisture. However, it is still necessary to water fairly consistently throughout the summer to keep humidity and soil moisture levels reasonably high. The wind problem has been alleviated by planting *Leptospermum ericoides* as a windbreak and spot-planting with *Hebe salicifolia* and *Coprosma robusta* throughout as shelter plants.

In the first season a few hardier plants were added to the collection — *Hoheria angustifolia*, *Cordyline australis*, *Sophora tetraptera* and *S. microphylla*, *Plagianthus betulinus*, and *Podocarpus totara*. These have done well and some are now over 10 feet tall. Already the kowhais together with *Clianthus puniceus*, *Hebe speciosa*, *H. salicifolia*, *H. hulkeana*, and *Senecio greyii* can make a fine display of flowers, while in season the berries of *Coprosma robusta*, *Hymenanthera crassifolia*, and *Corokia cotoneaster* add charm to the area and prove attractive to birds. Several of the plants, notably the coprosmas and hebes, have produced seedlings in profusion while *Dodonaea viscosa* and its variety 'Purpurea', together with the manuka have seeded also.

As more shelter has grown, the main collection has been increased. A few of these plants were nursery-grown — *Dacrydium cupressinum* and *Libocedrus plumosa*. These and others, have been donated by interested parents and friends of the school, but the majority have been transplanted as seedlings directly from the bush to their permanent positions. Among the less hardy species we have *Alseuosmia macrophylla*, *Olearia kirkii*, *Schefflera digitata*, *Fuchsia excorticata*, and *Geniostoma ligustrifolium* which are surviving in the shelter of more robust plants. This season we hope to introduce some of the ferns which do not require a high humidity and can tolerate some light.

The collection is not intended to represent a particular ecological unit, rather does it aim to show a variety of plants from different habitats. Although larger plants such as *Gaya lyallii*, *Corynocarpus laevigatus*, and *Senecio perdicoides* will demonstrate this feature, perhaps the widest geographical representation occurs in the alpine garden. Here one finds *Ranunculus insignis*, *Raoulia rubra*, *R. loganii*, and *Aciphylla squarrosa* collected from the Tararua Ranges, *Celmisia sessiliflora* and *Pachystegia insignis* from the inland Kaikouras, *Helichysum depressum*, *Viola cunninghamii*, and *Hebe epacridea* from the Canterbury ranges, and *Epacris alpina* and *Dracophyllum recurvum* from the Kaimanawas. *Parahebe catarractae* and mat-forming *Raoulia* spp. from the river's bed, grow in company with *Linum monogynum* and *Wahlenbergia pymaea* from high grasslands, and *Hymenanthera alpina* from the alpine scree country. The fragrant leaves of *Angelica montana* reach for space beside the whipcord stems of *Hebe subsimilis* and the delicate tracery of *Coriaria pteridoides*.

With the variety of plants available, all of which will eventually be labelled in accordance with Allan's *Flora of New Zealand*, it is hoped that not only will the planting become a valuable living herbarium for senior biology students, but also it will introduce to all pupils the wonderful heritage of our native flora.

PLANTS FOR WINTER EFFECT

DOUGLAS ELLIOTT (*New Plymouth*)

'My garden's terribly dull in the winter,' said a friend the other day. 'There's never a bit of colour in it.'

'You've only yourself to blame,' I said. 'There are dozens of plants that flower in the winter.'

'Is that so?' he said. 'Then why don't more people grow them?'

'I can think of two reasons,' I said. 'Ignorance and lack of space.'

'How do you mean?'

'Well, some of them are like you: they simply don't know they can get plants that flower in the winter. Others have their gardens so full of plants that flower at other times of the year that they just don't have room for the winter ones. You can't grow two plants in one hole.'

'Fortunately,' I added, 'most gardeners manage to find room for a few of the winter plants; otherwise they'd not only have a dull winter but they'd also miss growing some very beautiful and very interesting shrubs that would be worth growing no matter when they flowered.'

'Will you make me a list of the best?' asked my friend.

'I haven't time,' I said.

'It wouldn't take all that long, would it?'

'It would if I listed the lot,' I said. 'Besides, you wouldn't have room for half of them. Tell you what I'll do; I'll pick out some of my favourites. And I'll include some that I know are very popular even though I wouldn't grow them myself. That should give you a fair selection.'

I made my list and a few days later we went through it together. You might be interested in some of our comments.

'To start with,' I said, 'I'm taking winter to mean June, July and August. I've grouped most of the plants by the month they flower in. This'll be a bit inaccurate because their flowering time varies from year to year and also it overlaps from one month to another. For instance, *Protea nerifolia*, which I've put in the June lot, actually starts in April.'

'I get the idea,' he said. 'And that's all I need for a start. What's first on the list?'

'*Luculia gratissima* and poinsettia,' I said. 'Two tender things that can't take heavy frost. But they're good in mild districts. *Luculia* has fragrant pink flowers in big round clusters. Poinsettia or *Euphorbia pulcherrima* has scarlet bracts that look like flowers but last longer. Don't waste your time trying to grow it in a windy position.'

'Do you like camellias?' I asked.

'Some,' he said. 'I think they're rather stodgy.'

'That's because you've only seen some of the old varieties,' I told him. 'I think you'd like the new ones; they're much more showy. In fact, I reckon some of them are the best garden plants you can buy.'

'I might only have room for one,' he said.

'That certainly limits the choice, doesn't it? But I'd make it

'Donation' without any hesitation. It's a real beauty with large semi-double pink flowers that are showy for three or four months. Sometimes it starts in June, just as the really early camellias, the varieties of *Camellia sasanqua*, are going over. The sasanquas are noted for their small leaves and plentiful but rather fragile flowers.

'Now for something quite different but with an equally long season. I expect you know the japonicas?'

'Prickly things, aren't they?'

'That's right, and for that reason they make a good hedge. They have masses of single or double blossoms that are white, pink, apricot, orange or scarlet. If I have to pin myself down to one, I'd choose the old-fashioned but very good "Falconet Charlotte".'

'What colour?'

'Apricot that deepens as the flowers age. And it's double; so it lasts longer than singles. Incidentally, you'll find japonicas listed under *Chaenomeles*. One of my favourite scented flowers starts in June.'

'I can guess that one. *Daphne*?'

'Come to think of it that is probably my top favourite for scent and it certainly blooms in the winter and is worth a place in every garden that isn't too cold,' I said. 'But what I was really thinking of was *Chimonanthus praecox*.'

'No common name?' my friend asked.

'Wintersweet or Allspice,' I replied. 'Good names too because they draw attention to the fragrance, which is superb. The flowers don't show up much in the garden but they're good for cutting — a sort of semi-transparent greenish-yellow with a touch of purple in the centre. An improved form with bigger and yellower flowers is 'Luteus'. Allspice is deciduous and very hardy. Another plant with a super scent is flowering apricot, *Prunus mume*. Not only smells good but is very pretty too—rich pink double flowers all along the bare stems. Starts in June and continues for several weeks. You mightn't have room for any wattles but in case you have, there's a beauty flowering in June—Queensland silver wattle or *Acacia podalyriifolia*. (That means it's got leaves like a *Podalyria* or sweet-pea bush.) It's a bit frost-tender but is well worth trying.'

'What's special about it? They all have yellow flowers, don't they?'

'That's right,' I said. 'But the flowers on this one are bigger than most, they're very sweetly scented, and they're the first of all the wattles to come out. The leaves are pretty too—very silvery. That's just about the lot of my favourites for June.'

'What about other people's favourites?'

'Oh, yes,' I said, 'I mustn't dodge mentioning them, must I? Well, they are proteas and banksias. Although I'm not keen enough to grow them I can see their good points and I certainly would grow them if I had an open dry exposed section where I needed a quick

effect. For that kind of position, there's nothing better than these tough plants. The proteas come in a wide range of species but I suppose I'd better fix on what I think is the best. That's *neriifolia*, the one with the deep pink flowers and the blackish fringe like small feathers around the edge of what look like petals but are really bracts. When it comes to banksias I'm not so certain which I think is best. It partly depends on the space you can spare. I like *integrifolia*, which grows 25ft high. It has very pretty bright yellow flowers. Then there's *spinulosa*, more shrubby and 8ft high with reddish-amber flowers that are some of the best for cutting.'

'Are there any plants with berries on in June?' my friend asked.

'There's *Callicarpa dichotoma*, a moderate-sized shrub with clusters of small shiny purple berries all up the straight stems. You could find room for that. *Pyracanthas* are like evergreen hawthorns—very pretty, very prickly, and very worth planting if you have the space. You probably won't have space for the best berrying tree of the lot—*Idesia polycarpa*. It has big grape-like clusters of bright red fruits that usually remain on the tree right up to spring. I say 'usually' because some people lose them to the native pigeons.'

'Why does the *Idesia* need a lot of room?'

'It's big to begin with—a tree with a wide spread. But on top of that you have to plant a pair to get fruit—unless you can persuade your neighbour to plant a male while you have the female.'

'Surely that's enough for June,' my friend said.

'You're right about that,' I said. 'As I've already explained, some of these plants go on flowering in July and August; so I'll just pick out the highlights for July.'

'There are more wattles such as *Acacia baileyana*, one of the biggest, and most popular, with silver-fern leaves. I forgot to mention that *Magnolia campbellii* opens the first of its big pink goblets in June; but it's in its prime this month. It takes so long to start flowering that I don't recommend it for the average garden. Some of the other magnolias, which come out next month, are better at earning their keep.'

'Are there any more scented flowers?'

'I wonder if you'd call witch-hazel scented,' I said. 'It does have a scent, but it's not strong.'

'What's it look like?' my friend asked.

'It's unusual,' I replied. 'Personally, I think it's a real charmer—full of character and good in the garden and indoors. The flowers are yellow and have narrow petals with a bit of a curl in them. Could say they're like little wood shavings. And the leaves turn glowing yellow in the autumn just before they fall.'

'What height does it grow?'

'Eight to ten feet. The botanical name is *Hamamelis mollis*. A very unusual shrub that flowers now is *Garrya elliptica* or tassel-bush.'

'Doesn't sound very exciting.'

I agreed that the name didn't mean much and added that it was a poor name for a very good plant.

'The tassels look more like strings of beads to me,' I said. 'They're 12 to 15 inches long and very pale green with a touch of purple where the sun strikes them. The plant is evergreen and grows about 10ft high. Unfortunately it's a bit dull when it's not flowering.'

'Now that I come to think of it,' said my friend, 'I've noticed some manukas flowering lately. Which do you think is the best?'

'That's a bit hard to say. 'Red Damask' is very popular. It's double and rich red. But 'Martini' won an Award of Garden Excellence not so long ago, which shows that it's a top-notch.'

'What colour?'

'You could call it a bi-colour because the flowers open pale pink and deepen to red as they age. Manukas are good because they have a long flowering season and are very hardy. They don't mind dry conditions. A plant that's a bit like manuka is *Thryptomene calycina*, a quick growing shrub about five feet high with pink buds and white flowers. The flowers look as though they were made of enamel for a brooch. Another Australian with white flowers and pink buds is the Australian waxflower, *Eriostemon myoporoides*. I particularly like the variety called 'Profusion'; and it's well named. The leaves are shorter than those of the original species and this lets the plentiful flowers show up better. And talking of the leaves, I should mention that they have a pleasant smell.'

'Are there any more flowering fruit trees in bloom in July?'

'Yes; there's the first of the flowering cherries, one called *Prunus campanulata*. Not only the first but also one of the deepest red. It grows quickly into a tall tree 15 to 20ft high. And finally in the list for July we come to some members of the protea family that I like a bit more than the true proteas; they are the leucospermums. They grow in the same conditions as proteas—full sun and perfect drainage—and the flowers are like waratahs.'

'Are they the same bright reds?'

'No; nothing like that. I guess they're what the womenfolk call pastel shades and they range through variations of pink to yellow and orange. They show up well on the plant, last a long time, and are good cut flowers. One of the most striking is *reflexum*, but it's a bit big for the average garden. I'd say *bolusii* and *tottum* are the best for the small garden. Unfortunately, like the proteas, these shrubs sometimes die out suddenly for no apparent reason. Probably killed by a virus or a fungus.'

'That looks like enough for July,' said my friend. 'Now let's pick the eyes out of the things that flower in August.'

'There are several magnolias coming into bloom. One of the



Adenandra fragrans (see page 327).

(Photograph — Douglas Elliott)

earliest is *stellata*. It probably had a few flowers last month but will come into its full glory now. It's different from most of the others.'

'In what way?'

'Well, you know how people call magnolias tulip trees. It's a fair description, I suppose. But it certainly doesn't apply to *stellata*, because the flowers don't look a bit like tulips. The petals are narrow and slightly curled. They're usually pure white though on some plants they're touched with pink (and there's a variety that's all-pink). This is a really good shrub for winter as it flowers without fail and has such a long season that even if a storm ruins the first flowers there are plenty of buds to come out later. The flowers have a pleasant scent too.'

'I rather like magnolias,' my friend said. 'What others do you recommend?'

'I still think the old-fashioned and rather common 'Soulangeana' is one of the best. It's tough—I've seen it flowering well where it's exposed to quite a lot of wind; and it flowers well every year right from the start. No waiting like there is with *campbellii*. Another I like very much is *denudata*. The pure white flowers are perfect goblets. It's earlier than 'Soulangeana'. Then, there's a close relative of the magnolias called *Michelia doltsopa*. The flowers are a bit like big *stellata* flowers and they have a wonderful scent. The plant is ever-green and grows into a cone-shaped tree. It's fairly new, so I don't know for certain how high it'll grow. I've seen some about 15ft.'

'When do rhododendrons flower?'

'They have a very long season with the main display around the end of October. Still, some of them bloom this month. I'd say the pick of these early ones is 'Cornubia'. The flowers are rich glowing red and have an attractive waxy texture. It's slightly frost-tender. If you want a hardier variety, try the old-fashioned 'Nobleanum', which is rosy scarlet, or 'Ivery's Scarlet'. The name isn't quite true to my idea; I'd say the colour was rich crimson.'

'Are there any small shrubs I could plant in front of the taller ones?'

'One of the prettiest is *Adenandra fragrans*.'

'Does the *fragrans* part mean that it's scented?'

'Yes, but the flowers haven't much scent; it's the leaves that smell—when you bruise them. Very pleasant too. The flowers are in small clusters. They're a bit like manuka and are very bright pink. This shrub won't stand heavy frosts. Then there's *Phyllica pubescens*. The common name is flannel flower though I think it should be called feather-duster flower because of the shape and the fluffiness of the greenish flowerheads. I wouldn't grow it myself, but it's very popular.'

'Why wouldn't you grow it?' my friend asked.

'It doesn't appeal to me very much. Besides, it soon gets scruffy and dies out. A shrub I do like is what some people call lily-of-

the-valley bush and I especially like the particular one listed as *Pieris forrestii*. It has finer flowers than the old species called *japonica* and, what's more important, the young leaves are glossy and glowing red. It's a fine plant for *Rhododendron* country; in other words, for acid soil.'

'I think that's given me plenty to sort out,' said my friend.

'I suggest you have a look at the plants during the winter and pick out the ones you'd really like to grow. No need to rush out and order them this season. Besides, you may see some that we haven't discussed and that you think are real winners. If you have space left amongst your shrubs you can plant some of the winter-flowering bulbs and annuals. Then you'll have to stop saying your garden is dull in the winter.'

ROSES

(NOTES FROM NEW PLYMOUTH DISTRICT)

A. D. JELLYMAN, N.D.H.(N.Z.)

It is very easy to get wrapped up in the virtues of winter and spring flowering plants when you are selecting shrubs for a garden. No doubt there is a wealth of material available for these periods. The tendency to buy them is increased by the fact that the time of the year when shrubs are bought is winter or spring and the gardener sees the ever-alluring spring flowers and tends to buy material he can see blooming. When this happens you can often find that for a greater part of the year the garden is without flowering shrubs of any kind and annual or perennial flowers must be relied upon.

This situation can be avoided by some careful thought when planning your garden. Of the many summer flowering shrubs there are few that give the lengthy period of bloom that roses provide. Every garden should have roses. They are universal favourites and give a sustained period of bloom over a period of 6 months or more. One often hears it said that New Plymouth's climate is not suitable for the culture of roses. In other circles one occasionally hears of people importing papa clay in which to grow their roses. This is done to emulate the soils of places where roses appear to grow well without fuss or much effort. Taranaki soil is of volcanic origin, very friable and porous. Coupled with a copious rainfall this situation arises; heavy rain may fall at a given time and within a very short period it has percolated away through the soil, thus in the height of the summer although several inches of rain have fallen the soil can be quite dry after a week or so. In addition to this the rainfall tends to leach nutrients from our soil very rapidly, thus a relatively poor soil can result. When many people plant roses in their gardens they completely overlook the nutritional requirements of the plants and proceed to plant them. Then they forget them. A little

while later they realize that the bed of roses is not doing what it is supposed to do. They dash to their retailer and buy some 'rose manures' and spread these around the plants quite unaware that it is far too late in the season and so face further disappointment. As is common with most plants, roses appreciate a soil rich in humus and nutrients and, provided these simple basics are carried out, rewarding crops can be grown.

Firstly I feel that it is always preferable to grow roses in a bed specially devoted to them. This enables them to be accorded care and attention without disturbing other plants in the garden. The aspect needs to be a sunny open yet sheltered one, where there is free air circulation and plants can get about 5 hours of sunshine per day. Secondly I feel that a choice of varieties should be considered over the season preceding the planting. Then, having determined the varieties you want to grow, see them flowering at every opportunity. You can then be sure that these roses are the ones you wish to grow and you are then much less likely to be disappointed when your plants come into flower. For myself I prefer to grow a few varieties but grow them in groups of three or more depending upon the available room. In my garden I grow only two varieties of bush roses and two climber roses. We get ample pleasure from these and are quite happy to have them only because we spent a whole flowering season making sure that these were the ones we wanted and measured up to our expectations of a garden rose.

The preparation of a bed for roses should take place at least 6 weeks before planting by double digging the plot. Remove the top spit, fork over the bottom spit, and then add copious quantities of organic manure. Incorporate this with the bottom spit, and throw the top spit of the next section upon the area already dug. This system is of particular importance in our local soils because the deep entrenchment of the organic manure tends to draw the roots downwards to the nutrients and to the cooler constantly moist portion of the soil. A basic preparation such as this will stand the bed in good stead for 3 or 4 years.

Roses prefer a constant supply of moisture throughout the growing season and thus any method of effectively retaining the moisture present in the soil must be pursued. To begin with it is always a good practice to tramp the soil of the plot before you plant it. This will give the plant a better anchorage and lessen the likelihood of the roots becoming wrenched or weakened by strong winds. At the same time it will reduce the rate of evaporation in the soil. In New Plymouth you can tramp the plot to such an extent that your boot will not make any impression on the surface when you walk over it. Further moisture retaining precautions can be taken by growing a surface rooting crop of annuals or by mulching the surface with sawdust or grass clippings. I prefer either of the latter two alternatives because both will reduce the amount of work necessary to tend the bed by bringing weeding to a minimum. Sawdust would need to be applied after planting in the case of a newly planted bed,

or after seasonal pruning of an established bed. Grass clippings on the other hand would be spread thinly over the plot regularly throughout the growing season making for easy disposal of the lawn mowings. Either of these two methods will keep the soil surface cool and reduce any drying out tendency to a minimum.

Having dealt with the physical requirements of soil for roses I will now deal with another aspect, namely that of fertilizer and its application. A balanced mixture suited to this area consists of parts by weight: 3 superphosphate; 2 sulphate of potash; 2 sulphate of ammonia. This mixture is best if applied in small quantities at regular intervals thereby reducing the likelihood of leakage from the soil. Applications should commence at the time of pruning and continue at 4 weekly intervals until mid-summer. After this no fertilizer should be applied because it would tend to keep the plant in too soft and vigorous growth and thus poor ripening of the wood in the autumn could lead to some difficulty. In fact I feel that many of the cases where the disease 'dieback' is prevalent the basic cause is the application of fertilizer too late in the season, leading to immature wood when the winter period sets in.

In areas where a long summer of high temperatures and low humidity is experienced the incidence of fungous disease is much lower than in New Plymouth where we have quite a humid and wet summer. Thus a disease like black spot flourishes and can only be controlled satisfactorily by regular spraying from the time growth commences and on through the season. There are a number of sprays that can be used for the prevention of this disease of which captan, phaltan, thiram and copperoxychloride are all suitable. Powdery mildew is sometimes encountered and is not quite as easy to control as black spot. There is one material which is effective against this disease and this is karathane, a sulphur based chemical. In effect karathane appears to be a more eradicant fungicide than a protective one and it is recommended that spray residue be washed off 30 minutes after the application. This is done because residues remaining on the young growth can cause some damage to the foliage. The only objectionable aspect of using this material is that it has a nauseating smell and skin irritations can be experienced by careless handling and undue exposure to the material.

The main insect pests are aphids and red spiders. Aphids can be controlled by spraying with malathion wettable powder. But this spray will not always control the red spider population and exclusive use of this could create a build-up of this pest. You could probably overcome this predicament by alternating spraying materials by using lindane as well. Lindane will give adequate control of red spider and moderate control of the aphids. Spraying programme can become a heavy task for any gardener and I would strongly recommend that you try to streamline your garden spraying by arranging all spraying in one operation where possible. This means that you could, by using a mixture of lindane and thiram, spray your roses, the potatoes for blight, the apples for weely aphids and codling moth, and also you may have

a caterpillar on the dahlias which also needs attention. You can see that this type of mass spraying would get over this work in one sweep and make your gardening a more efficient operation.

Pruning is a matter of taste but several points must be kept in mind when carrying out the work. Firstly study the type of growth of the bush; whether it is a vigorous, medium or weak grower. Then you can gauge what course to take. For a vigorous growing bush medium pruning is best employed. First remove any weak or diseased wood and then prune the remainder of growth to a height of $2\frac{1}{2}$ ft. If you prune a bush of this nature too hard year by year a gradual degeneration will set in and life will be shortened. On the other hand tall pruning of bushes to heights above 4 feet may give an increase of flowers. But it will become an unsightly bush and the flowers will be at a height where they cannot be enjoyed. In the case of a bush of weak constitution, pruning must be rather harder to encourage stronger growth and to build up a healthy, vigorous bush. Most rose bushes will display either an upright vigorous habit or a spreading less vigorous habit. It is therefore easy to determine just what type of pruning is best pursued for any particular specimen.

There are innumerable varieties of roses from which to choose. Points which I consider important when selecting plants for your garden are as follows. Does the flower appeal to you in the bud and in the full flower? How well will it stand up to summer strength sunshine? Does the quality of scent concern you or is a good flower sufficient? Lastly if you are just starting a collection of roses you cannot go far wrong by sticking to the established varieties. They have withstood the test of time in the face of constant competition from the many roses being released every year.

PUBLICATIONS REVIEWED

THE CHARM OF OLD ROSES, by Nancy Steen (Published by A. H. & A. W. Reed)

Mrs Nancy Steen is no stranger to our readers. Her articles on old garden roses, fuchsias and other old world plants have appeared, from time to time, in this Journal. They have always possessed considerable interest and displayed a deep knowledge of the subject, set down with a warmth of enthusiasm. So it is no surprise to me that she has produced a book on old garden roses that is likely to attract both the rosarian and the bibliophile. The format is attractive. The size (9½ in. x 7 in.) is easy to handle, while allowing adequate space for justice to be done to the 48 coloured and 17 half tone illustrations. There is a characteristic foreword by Harry Wheatcroft, which is quite in tune with the nature of the book. There are graceful acknowledgments, an impressive bibliography and an index of rose names. The book has been printed and bound in Japan.

In her introduction, the Author describes her first meeting with an old garden rose — the fragrant cherry red Bourbon 'Madam Isaac Pereire'. This must have been the birth of her love for these old roses. From then onwards we are taken, in stages, through the world of roses. Throughout there are references to these old roses in relation to New Zealand gardens. The original

settlers brought with them plants of favourite roses. These were planted. Gardens changed hands and many of these old roses were destroyed, and many became semi-naturalised. Mrs Steen tells how she and her husband made the first introduction of an old rose to their garden. It was the Gallica 'Anais Segales'. It was found in a semi-wild stand of old roses that had naturalised themselves in a roadside planting. Since then she has rescued a number of old roses, that were facing extinction, and brought them back into cultivation. Then follows the story of the Damask Rose which, as the Author describes, reads like a tale from the *Arabian Nights*. There is the white rose of the House of York, from *Rosa alba*, believed to have been brought to Britain by the earliest Roman traders. I admit to a heart throb when Mrs Steen describes the stone built cottages of Chipping Campden with old roses clambering over the porches — a countryside I knew so well.

Rosa centifolia, the rose of the Greeks and Romans, an ancestor of 'Village Maid', a vigorous, thorny beauty that can be seen semi-wild in parts of New Zealand; the curious but fascinating moss roses; the smaller roses for rock gardens or other places suitable for the miniature types — all these are dealt with in fascinating detail. Then follow the China roses and their relatives the fragrant Tea cultivars, the Bourbon roses, so fashionable in early Victorian times, the hybrid perpetuals that can be so floriferous when the growths are arched and pegged into position, the curiously striped roses that enjoyed a vogue similar to that of the Malmaison carnation 'Marmion', the musk roses that grow into fragrant shrubs with a long flowering season. Mention is made of the many uses of climbing roses which do not appear to be grown so frequently in New Zealand gardens as their merits deserve. The *rugosa* cultivars, roses of desert lands, also the use of the rose in garden and landscape with useful plans complete a book that will be a most valuable addition to the horticultural literature of the Southern Hemisphere in general and New Zealand in particular.

OVERSEAS VISITORS

Several members planning to visit the United Kingdom have asked for particulars of tickets for shows, garden visits and tours, etc.

The following Trusts arrange garden tours from time to time:

- The National Trust of England
- The National Trust of Scotland
- The National Trust of Northern Ireland

Enquiries should be addressed to The National Trust,
42 Queen Anne's Gate,
London S.W.1.

Tours are also arranged by Galleon Tours, 49 Cannon Street, London E.C.4.
(7 day tours in England and Wales)

The Organiser, Gardener's Sunday, White Witches, Claygate Road, Dorking,
Surrey. (these are Sunday tours)

Also: Societe d'Horticulture de France, 84 Rue de Grenelle, 75 Paris 7e, France.

In addition, members may apply for election as Fellows of the Royal Horticultural Society at the Secretary's office, Vincent Square, London S.W.1. Tickets to shows, etc. are then available in anticipation of election.

The British Travel Association, 206 Vivian Street, Wellington, can supply information and booklets of garden tours.

K. J. LEMMON, Dominion Secretary.

DISTRICT COUNCIL REPORTS

WAIKATO

Waikato members are fortunate in being within easy reach of a great variety of natural plant associations and one of the most interesting is the flora of the higher lands around Lake Taupo and its mountains. In accordance with the Council's policy of arranging excursions to places of such interest, during the late summer of this year a bus load of members went for a weekend to the Chateau. Mrs D. Yendell organised the transport and hotel arrangements and Miss P. Bates acted as guide for the walks at the Chateau: the Council is fortunate in having such efficient organisers and the success of such trips is due to the forethought and planning that is so essential.

The outward journey was through the King Country and by way of Taumarunui to Ruapehu. As the bus load was of varied age groups no mountaineering was arranged and the easy Taranaki Falls Walk was chosen for the first afternoon. This leads through both open tussock country and beech forest back to the Chateau. The mountain beech here is *Nothofagus solandri* var. *cliffortioides*. The late summer is a particularly good time to visit this area as the many and varied berries are then to be seen in profusion. *Coprosma cheesmanii* was particularly heavy with fruit. *Pentachondra pumila* was also observed, and in the rocky area the Eyebright, *Euphrasia cuneata* was common. *Gaultheria* spp. in berry were found frequently.

Noted for its display of colour in autumn, *Gentiana bellidifolia* in large groups was most attractive, but no flowers were seen on *Celmisia incana*, presumably due to the late frosts at Christmas having stopped flower production. *Lycopodium fastigiatum* formed conspicuous bronze mats and another plant thriving there, the Pygmy pine, *Dacrydium laxifolium*, was frequently seen. A less pleasant plant, at least when its leaves are crushed, *Coprosma foetidissima*, lived up to its common name of Stinking *Coprosma*.

Near a small stream several species of *Blechnum* were growing profusely, including *B. minus*, *B. vulcanicum* and *B. penna-marina*. *Gleichenia cunninghamii* was also thriving nearby.

The night was spent at the Chateau and on the second day the morning was devoted to exploring the rocks and scoria slopes and taking photos. A plant of outstanding interest was admired, *Senecio bidwillii*, with its attractive thick silvery leaves.

Dracophyllum recurvum on the slopes of the mountain was noted and the beautiful very pale blue of the Harebell, *Wahlenbergia pygmaea* attracted much attention.

The return journey to Hamilton was along the attractive scenic drive around the shores of Lake Taupo and through part of the extensive pine forests of the central North Island.

From the enthusiastic comments of those who went on this trip it was most enjoyable and gave the opportunity of seeing so many of our native plants in their natural setting.

WELLINGTON

APRIL — A 'different' outing was enjoyed by members. They were privileged to visit the Ministry of Works nursery at Haywards, situated in a secluded spot close to the Hutt River, unknown to many people. The subject of trees and shrubs used for highway planting was of great interest. The outing terminated with a visit to see the beautiful trees at Harcourt Park, Upper Hutt.

MAY — Mr A. L. Poole, Director-General of Forests gave a most stimulating address on afforestation in New Zealand, illustrated by colour slides of trees and forests, somewhat off the beaten track.

JUNE — The Kapiti District Horticultural and Beautifying Society Inc. graciously combined with Wellington District Council at Paraparaumu Memorial Hall on 1st June. Mr J. F. Living, the Dominion President, before a large audience, presented Mr G. A. R. Phillips with the certificate of Associate of Honour. On this happy occasion we were delighted that so many friends and neighbours of Mr and Mrs Phillips were present. At this function Mr Living also presented the certificate of Junior Diploma in Horticulture to Mr G. Bennett of the Wellington District Council. Mr James Stirling gave, and demonstrated with small trees, plants, rocks, etc., a most interesting address on frontage planting, suitable for a new garden in the district. Mrs Phillips and Mrs Bennett were each presented with a sheaf of beautiful flowers. The ladies of the district decorated the hall with a magnificent display of floral art. The abundance of flowers and shrubs demonstrated the difference in growth and variety of plants, so easily cultivated within a few miles of Wellington. The success of cultivation of many of these plants and trees has been due to the help and advice so freely given by Mr Phillips. The heartfelt appreciation of the good work he has done for the district was extended to him at that very impressive gathering.



The Institute's President, Mr J. F. Living, (left) presenting the award of Associate of Honour to the Editor, Mr George Phillips.

(Photograph — 'The Dominion', Wellington)

WHANGAREI

MARCH

This meeting was addressed by Mrs Griffin, who specialises in the growing of chrysanthemums. Those who attended heard a comprehensive, lucid and well-planned account of growing chrysanthemums from the preparing of the soil, through all the stages of their growth to the final picking of their perfect blooms. In Northland most people grow chrysanthemums for cutting, either for home or florists' use as there were few opportunities of showing exhibition blooms.

The place chosen should be an open, sunny one, where air could circulate freely. Almost any soil would suit them, but they did better on the heavy ones, but drainage must be good. Beds should be built up a few inches higher than the lawn to ensure this. Plants must have good food under them, and compost and well rotted animal manure should be dug in. Prepare the bed in September, especially if in new ground, and for the cut flower market. If for the home garden, prepare the bed in October, digging in blood and bone, plus a mixed fertiliser, or a special mixture of—Superphosphate, 4 parts; Sulphate of potash, 2 parts; Sulphate of ammonia, 1 part; Bone dust, 2 parts; Dried blood, 1 part.

Apply at the rate of 3oz to the sq. yd. in the top 3 inches of soil, with another dressing in January. Plants could be bought, or tip cuttings made from old plants in September, by snapping off the top 5 or 6 inches, dipping in a rooting hormone powder, and setting in a seed box. The soil in the box should be 4/5 scoria and 1/5 compost.

Cuttings should be kept regularly sprayed with a mixture of D.D.T., malathion and dithane, using the quantity directed on the packet. Spray every 2 to 3 weeks, and every 2 weeks by the end of January. If rust appears, spray every week. Plant out cuttings of early chrysanthemums in mid-November. Mulch in mid-December, but be sure the soil is wet before applying the mulch. When the plants are 6 to 8 inches high, pinch back and train. When they branch out, nip again to get more stems—9 to 20—so that there will be a good crop of buds. When these are the size of a sweet pea seed, rub some out.

To prolong the life of the blooms, they may be covered with plastic, which will double their life from 2½ weeks to 5. By selecting a number of varieties, blooms may be had from January till June, but the plants must be fed by top-dressing twice in the season.

Beautiful colour pictures illustrating many varieties grown in Northland and at Hollows' Nursery were shown and those specially treated for the Royal N.Z. Institute of Horticulture's National Conference at New Plymouth.

DISPLAY TABLE

Some unusual plants graced the table at our March meeting, some natives and some exotics.

Among natives *Astelia solandri* (now more properly *Colospermum*) lent itself to a most effective floral arrangement by Mrs Parkinson. A fruiting branch of kohe-kohe (*Dysoxylum spectabile*) was shown by Mr Cates. This is a most remarkable and handsome tree, generally coastal, and particularly plentiful in the Marlborough Sounds. The flowers are white, in quite large panicles up to 18 inches long. They spring directly from the trunk or branches, and often form a most impressive cascade from tree top to within a few inches of the ground. The fruits which follow are equally spectacular. The size of a large grape, the hard outer skin splits into three or four segments to show the black seeds (2 to each segment) on the orange lining, known as the aril. It is sad to say that few New Zealanders are familiar with this spectacular tree—beautiful in leaf, flower and fruit.

Among exotics *Alberta magna*, coming from Natal, is a shrub which should be more often seen. It does well on clay as well as on volcanic soil, has bright green, shining leaves and scarlet flowers, followed by scarlet sepals, thus giving it a long season of attractiveness. Hybrid nerines are assets in the autumn garden. The Madagascar climber *Stephanotis*, often called Bride Flower, was also on display. Although a real tropical plant, this was grown outdoors by Mrs Martin. Facing north and with some shelter from the eaves and tall-growing poinsettias, the plant thrives and blooms well, the clusters lasting for over a month. *Pentas lanceolata*, another warmth-loving shrub grown by Mrs Martin outdoors, is a very desirable small shrub from tropical Africa and Arabia. About 2ft high and as wide, it bears fairly large heads (3 to 4in across) of pinkish mauve flowers, long lasting when cut. Plants should be pinched back after flowering to keep a good shape. Another plant of special interest was the edible *Hibiscus esculentus*, known as Gumbo, or Okra, which, though tropical in origin, grows readily here. Its seed pods are used in cookery. The large flowers are yellow with a purple base. Also on the table were plants of tuberous and multiflora begonias, and a range of colour in the blooms of *Lagerstroemia*, brought by Mr Blumhardt. These also should be more frequently grown as they are showy plants and do well in Northland. They stand hard pruning and like plenty of water at flowering time. They are usually known as crepe myrtles. A shrub with very fragrant leaves, blooming in autumn and useful for green arrangements, is *Backhousia citriodora*, with masses of creamy flowers followed by green bracts.

APRIL

At the April meeting our speaker was Mr Ralph Jordan of Australasian Nurseries, Pakuranga. He brought several specimens in pots to show how well some plants will do in such conditions. In a medium-sized planter it is easier to grow several subjects than one plant in a small pot. If used outdoors it must have a drainage hole, but inside, where watering is controlled, it need not, just be careful to have coarse material underneath and good but open soil. Cushion chrysanthemums in pots are now very popular in U.S.A. and extensively used as gifts. Three plants to each pot give a mass of bloom which may last for 3 months, and one still has the plants for next year. Assorted pebbles are the latest idea in garden cover, especially on rockeries, around conifers and in Japanese gardens. Besides being ornamental, they keep weeds down. They can be collected anywhere on beaches or stony roadsides. The soil, except for a small hole around the plant or tree, can be covered in plastic after being watered, and the pebbles spread over it. A tropical garden with larger subjects such as bananas or fruit salad plant, may have large stones as well.

Mr Jordan then continued with his talk on the myrtle family which comprises an enormous number of species, and many of these are Australian. The myrtles are characterised by flowers with many stamens, though several such as teatrees and kunzias, have true petals. The eucalypts, which comprise around 600 species, are mostly very rapid growers, one such being *E. cinerea*, the silver dollar gum, a very desirable specimen tree with beautiful bluish foliage. It is sometimes attacked by leaf-roller caterpillar, and can be sprayed with malathion. A very dainty, fine-leaved shrub which he had brought in a container was *E. nicolai*, grown by the acre in N.S.W. for the cut flower trade. A specimen 20 years old in the nursery had attained 25ft. Gums must be staked when first planted as they have a feeble root system and blow over easily. Being such vigorous growers, they are not suitable as tub plants.

Coloured slides taken on a trip to Australia were then shown. The original scarlet flowered gum, *E. ficifolia*, comes from N.S.W., but hybrids may be in various pink and rose shades, while seedlings occasionally are white. *E. macrocapa* has the largest flower of the gums, scarlet and 3-4in

across, but the plant is straggly. The melaleucas have small bottle brush flowers. *M. squarrosa* is yellow and grows well in this district; *M. nesophila*, with lilac flowers, will stand strong or salt winds, useful as a coastal shrub, white *M. pulchella* is known as the claw-flower, from the curled shape of the stamens. *M. steedmanii* comes from W. Australia, flowers scarlet and foliage bluish. The very popular rosy bottlebrush grown in so many gardens here is *Callistemon citrinus* 'Splendens'. To give of its best the tree must be pruned after flowering, to prevent seed forming. A new variety, 'Harken's Hybrid', is said to have brushes a foot long and in clusters. From Australia comes *C. speciosa*, with large, deep scarlet flowers, the largest of all. It requires swampy conditions. Another lovely foliage tree, but very difficult to propagate and therefore expensive, is *Agonis flexuosa* 'Variegata', fine leaved and dainty, cream and pink. The *Agonis* are known as the willow myrtles, from their drooping habit and fine leaves. Other members of the family are the kunzias, with very small leaves. They also do well in our soil, but are sometimes slow to bloom. *Regelia grandiflora*, which Mr Jordan described as being especially beautiful, bore scarlet tufts of bloom and had leaves like a *Picea*. There are more beaufortias than the one grown here, but *sparsa* is the best, with its delightful orange-red brushes in the early autumn. Mr Jordan showed us several slides of *Darwinia*, the mountain bell from W. Australia, and had to climb a different peak in the mountain range to find each variety. The bells are several inches long—one yellow speckled with red, and others in rose shades. In the sand plains of W. Australia grow the *Calythrix*, in various pinks and white, massed with starry 5-petaled flowers. A native pomegranate, growing on buckshot gravel which looks like scoria, has odd sausage-shaped flowers lying on the ground. Although on the sand plains also, it has been successfully grown by Mr Stevens at Wanganui.

There are many *Thryptomene* and *saxicola* 'Rosea' is easily grown here, also a newer pink variety named *T. baeckeacea* which responds to soil enriched with compost or very old cow manure. The white form *T. calycina* is not easily propagated and is hard to obtain. It comes from Victoria where the climate is cooler and more damp. The *Verticordia* or feather flowers are amongst the most beautiful of all, coming in shades of yellow, orange, red, pink, and white. They are also most difficult to propagate, growing neither from seed nor cuttings away from their natural home. Plants are taken as very small seedlings from around parent plants. Scenes of the sand plains were indeed wonderful. Mr Jordan spent about 18 months travelling in out-of-the-way places to see as many as possible of the native plants, and delighted us all with the wonderful pictures he had taken.

DISPLAY TABLE

When Mr and Mrs Waterhouse bring orchids for the table, the gorgeous blooms are always the centre of attraction. This month was no exception. The beautiful *Cattelya* 'Crystal Orb' has huge snowy flowers with a golden lip, strongly perfumed as the flower ages. *Oncidium nana*, the dancing lady, so named as the many inch-wide flat yellow flowers seem to flutter on their slender stems. *Odontoglossum grande* lives up to its name, the flowers being very large and spidery, tawny and gold, while *O. patnina* has smaller and wider petals speckled with lilac. *Lytonia*, the pansy orchid, is really like a pansy with round white blooms and central purple blotch.

Mr O. Blumhardt's large collection of hebes, both species and hybrids, was very colourful. Some were local and a beautiful white one was found on Mt. Egmont. Hebes are extremely useful shrubs for either home gardens or parks. Bushy types may be used as low hedges, and small kinds for edgings or rockeries. All can be pruned after flowering to keep them in good shape. From the Cates' garden came a collection of good chrysanthemums and the uncommon *Senecio mickanioides*, the single yellow flowers being much larger than our native ones. The trailing *Ceropegia woodii* is more notable for its leaves than the small mauve flowers, but its close relative

stapeliaeformis has most unusual green flowers like a two-inch openwork basket. The blue *Tweedia* and seed pods of the moth plant were also shown, the four plants all being from the same family, the *Asclepias*, *Protea nerifolia* and 'Clark's Red' were also shown, and a variety of camellias, all flowering very early, probably as a result of the extremely wet season. Mrs Wright brought the lovely drooping rosy berries of *Eugenia eucalyptoides* and a bunch of the large crab apple 'Jack Humm'.

WHANGAREI COUNTY COUNCIL GARDENS

We are indeed fortunate to have the opportunity of landscaping the wonderfully laid-out garden beds at Springs Flat, surrounding such a magnificent building. Mrs Reynolds and Mrs May have been delegated to plan and supervise the planting of the beds. It would take several years to complete this project, and ease of maintenance is a prime factor. The Forest & Bird Society will be in charge of one area, where only native plants will be used, and in other parts natives such as hebes, flaxes, pittosporums, and coprosmas will be planted as they are hardy and good wind resisters, most necessary as the site is exposed to cold, south-westerly winds.

Another area will be planted specially as a memorial garden to the late Mrs Given, one of the foundation members of our branch of the R.N.Z.I.H.

Mrs Reynolds described a few of the ideas she and Mrs May had already decided upon regarding planting of boxes at the main doorway — fibrous begonias inside and some dwarf *Nandina* outside where it is very dry. A low planting of hebes would be very suitable around the flagstaff, and along the front of the building, but not too closely, various conifers, flaxes and hebes. The large garden bed surrounded by roadway is to have a stone seat and drinking fountain with two-thirds in lawn, and plants carefully chosen.

REPORT OF THE EXAMINING BOARD

On behalf of the Examining Board I have pleasure in submitting the following report for 1965.

(1) Meetings:

The board met on four occasions during the year with an average attendance of 12 members.

(2) Syllabus of Examinations:

The Examinations Syllabus of the Institute includes the following Diplomas and Certificates:

- (a) National Diploma in Horticulture — N.D.H.(N.Z.)
- (b) National Diploma in Fruit Culture — N.D.F.C.(N.Z.)
- (c) National Diploma in Apiculture — N.D.Ap.(N.Z.)
- (d) Certificate in Vegetable Culture — C.V.C.(N.Z.)
- (e) Certificate in School Gardening — C.S.G.(N.Z.)
- (f) Seedsman's Certificate — S.C.(N.Z.)

(3) Applications for Registration for examinations:

During the year applications were accepted from new candidates for the following examinations:

		1964
National Diploma in Horticulture	31	19
National Diploma in Fruit Culture	2	4
National Diploma in Apiculture	2	3
Certificate in Vegetable Culture	1	—
Certificate in School Gardening	3	—
Seedsman's Certificate	—	—

(4) 1965 Examinations:

Results — these are appended separately.

Statistics — the following tables will be of interest; 1964 corresponding figures are shown in parenthesis.

N.D.H. Examination	Junior	Intermediate	Diploma
Number of Entries	62 (40)	24 (23)	13 (19)
Number of Passes	38 (21)	20 (18)	9 (15)
Percentage of Passes	61.2 (52.5)	83.3 (78.3)	69.2 (79)
Average marks—Passes only	61.1 (58.6)	60.5 (64.4)	64.5 (63)

N.D.F.C. Examination			
Number of Entries	5 (2)	4 (8)	9 (4)
Number of Passes	4 (2)	4 (8)	9 (3)
Percentage of Passes	80 (100)	100 (100)	100 (75)
Average marks—Passes only	63.5 (51)	61.7 (66)	60.8 (58)

N.D.Ap. Examination			
Number of Entries	— (5)	— (2)	4 (—)
Number of Passes	— (4)	— (2)	4 (—)
Percentage of Passes	— (80)	— (100)	100 (—)
Average marks—Passes only	— (64)	— (75)	81.5 (—)

Extra Certificate—N.D.H.

It is pleasing to report that two holders of the N.D.H. sat for the Extra Certificate in the subject of 'The Flower Garden'. Both candidates were successful in the examination.

Number of Entries	6 (2)	4 (2)
Number of Passes	5 (2)	3 (2)
Percentage of Passes	83.3 (100)	75 (100)
Average marks—Passes only	64.6 (65)	59 (62)

Conduct of Examinations:

Altogether, 60 candidates sat 101 papers in 22 subjects at 18 different centres. These centres are extremely varied. Some candidates sat in Universities, Colleges, City Council or Dept. of Agriculture offices and some even in private homes. Often only one candidate is involved. Every endeavour is made to enable all candidates to sit in the town where they are working. In all 15 examiners were appointed by the Examining Board for written examinations. Their co-operation and prompt marking of papers permitted an early release of the examination results.

Oral and Practical Examinations:

The Oral and Practical examinations for all candidates were held in Christchurch where the facilities again proved to be very satisfactory and afforded efficient conduct of the examinations for all concerned. The Examining Board and the Institute are very much indebted to Mr Gilpin (Director) and the staff of the Christchurch Botanic Gardens for their valued assistance and the facilities offered. Much help was also received from officers of the Department of Agriculture in Christchurch in preparation for the examinations, and from members of the National Beekeepers' Association. Members of the Canterbury District Council arranged billets with local members for candidates who had to travel to Christchurch and stay overnight. Mrs G. G. Henderson and a band of helpers provided morning and afternoon tea each day for candidates and examiners as well as a substantial lunch — 56 lunches were served during the week.

Statistics for Oral and Practical examinations (these are included in the statistics above):

	N.D.H.			N.D.F.C.			N.D.Ap.	C.S.G.
	I	II	III	I	II	III	III	
Number of Entries	19	8	4	—	2	1	1	1
Number of Passes	12	8	2	—	2	1	1	1

The following completed sections or the whole examination:

N.D.H. Junior Certificate

G. S. Bennett—Wellington
 B. A. Currie—New Plymouth
 R. C. Gill—Christchurch
 R. M. Scott—Palmerston North
 I. Stagg—Christchurch
 J. Sullivan—Hamilton

N.D.H. Intermediate Certificate

N. A. Aitken—Christchurch
 E. F. Butcher—Palmerston North
 I. H. Howell—New Plymouth
 D. J. Kinvig—Ashburton
 P. J. Rumbal—New Plymouth
 H. H. Ryan—Palmerston North
 L. A. Scherp—New Plymouth
 B. R. Young—Auckland

Extra Certificate after completing Diploma (N.D.H.):

A. D. Jellyman—New Plymouth W. H. McLeary—Auckland

N.D.F.C. Junior Cert. Intermediate Certificate

G. Foxton—Levin D. S. Gay—Nelson
 J. A. Lees—Okaihau

Diploma (final)

K. J. Pick—Hamilton
 I. M. Wells—Nelson

N.D.Ap. Diploma (final)

V. A. Cook—Oamaru

(5) **Government Grant for Examinations:**

The Examining Board acknowledge with appreciation the capitation granted by the Minister of Agriculture for assistance to the Institute in the conduct of the examinations.

(6) **Remit from 1965 Conference**

Re the holding of Junior and Intermediate Oral and Practical Examinations in both North and South Islands (and until satisfactory facilities are available in the North Island, Stage III examination continue to be held only in the South Island). This subject was fully considered and investigated by a sub-committee who were of the opinion that facilities in Palmerston North could become available from 1966 for Junior and Intermediate candidates, and thereafter in alternate years, and that an observer from Palmerston North should attend the 1965 Oral and Practical examinations. Their final recommendation would then be made to the Examining Board after the 1965 Examinations had been held.

Professor J. A. Veale of Massey University of Manawatu attended the examinations in Christchurch as an observer. The Examining Board expects to receive the Report of the sub-committee at its next meeting.

(7) **New Special Prize Fund Donated:**

Through the N.Z. Institute of Park Administration, Mr. P. J. Skellerup of Christchurch donated the sum of £100 as an endowment fund to provide an annual prize out of the interest accruing there from, for the best junior Examination Student. The formula for determining the 'best student' has still to be defined.

The Board warmly appreciates this fine gesture by Mr Skellerup and feels that this prize should serve as a stimulus to a more sustained effort in the examinations.

(8) **Exchange of Students from Australia:**

An approach had been received from South Australia for an exchange of students between New Zealand and that State, which would facilitate Australian students obtaining the National Diploma in Horticulture. The practical issues involved are being investigated.

(9) **N.Z. Forest Service:**

The N.Z. Forest Service has adopted the Junior N.D.H. Certificate as a qualifying examination for the granting of study leave to their Nursery employees to attend a Diploma Course at Massey University.

(10) **'Guide for Students' Booklet:**

This booklet, which was last revised in 1959, is being bought up-to-date, for the benefit of registered students.

(11) **Revision of Examination Prescriptions:**

The Board has received recommendations and suggested revisions of some of the examination prescriptions. These are being carefully considered.

(12) **Personal:**

During the year three eminent members of the Examining Board announced their retirements from their respective official positions of employment — Mr. E. Hutt (Director of Parks, Wellington), Mr. J. A. McPherson (Director of Parks, Auckland), and Dr. J. S. Yeates (Head of Botany Department at Massey University of Manawatu). It is sincerely hoped, that they all will be able to continue on the Board, for their lengthy terms of service to the Institute and the Examining Board have been most valuable and the Board's work and status have been enhanced by virtue of their membership and contributions to its counsels. Appreciation of their individual and combined services is placed on record.

Mr J. A. Hunter of the D.S.I.R., Auckland, likewise has retired and it appears unlikely that he will be able to continue on the Board. Miss J. M. Dingley of Auckland has been proposed to take the place of Mr Hunter. We welcome Miss Dingley, and place on record our sincere appreciation of the extremely helpful and valuable co-operation of Mr Hunter during the past years. He has shared his wide experience and knowledge with other members of the Board in all its deliberations.

(13) **Acknowledgments:**

The Examining Board acknowledges with sincere thanks the help and assistance received from all who have been associated with the conduct of the examinations this year.

- (a) The panel of examiners.
- (b) The Christchurch City Council Parks and Reserves Department, and officers of the Department of Agriculture.
- (c) Honorary supervisors at centres for written examinations.
- (d) The Canterbury District Council for assistance and hospitality with Oral and Practical examinations.
- (e) The Director of Horticulture and Officers of the Horticulture Division.
- (f) The National Beekeepers' Association of New Zealand Inc., for their collaboration and help in matters relating to the National Diploma in Apiculture.
- (g) Technical Correspondence Institute for assistance and tuition given the examination students.

On behalf of the Examining Board,
H. D. GORDON, Chairman.

1965 EXAMINATIONS

The results of this year's examinations conducted by the Royal New Zealand Institute of Horticulture, Fruit Culture, Apiculture, Vegetable Culture and School Gardening, both written and practical, have been released. The Oral and Practical examinations were conducted in Christchurch which is the permanent examination centre for all candidates in the Oral and Practical examinations.

A total of 60 candidates presented themselves for examination and the percentage of passes obtained was 76%.

The Junior Memorial Prize for the candidate gaining the highest marks in the Oral and Practical Stage I examination was awarded to N. L. Avis of Christchurch; the David Tannock Memorial Prize for the highest marks in the Oral and Practical examination Stage III was awarded to D. Field of Christchurch; the J. A. Campbell Memorial Prize for the candidate completing the Intermediate examination and gaining the highest average marks was awarded to J. P. Rumbal of New Plymouth.

The subjects in which passes have been gained by candidates are indicated by code numbers as follows: Bookkeeping (2), horticultural botany (3), plant protection stage I (4), oral & practical stage I (5), principles of botanical classification (6), horticulture stage I (7), special subject (8), oral and practical stage II (9), horticulture stage II (10), plant protection stage II (11), oral & practical stage III (12), thesis (13), horticultural economics (14), fruit culture stage I (15), fruit culture stage II (16), business aspects of vegetable culture (17), vegetable production (18), principles and practices of plant protection (19), extra certificate (20), entomology stage II (21), pathology (22), garden problem (23).

Auckland

Latimer, E. H., 11
Leonard, J. W., 3, 4, 5
McLeary, W. H., 20
Peters, A. C., 3
Strickett, J. H., 3
Young, B. R., 6, 8, 9

Christchurch

Aitken, N. A., 9, 10
Avis, N. L., 5
Field, D., 10, 11, 12
Fortune, M. J., 3
Kinvig, D. J., 7, 8, 9
Mander, G. D., 10, 12
Porteous, B. E., 5
Scadden, W. J., 2, 7, 9
Scott, E. Miss, 5
Stagg, I., 4
Woodley, J., 2, 8

Gisborne

Johnson, C. F., 3

Hamilton

Bigwood, J. A., 4, 5, 7
Chamberlain, P. R., 3, 5
Hale, D. J., 5
Pick, K. J., 12, 13, 16
Robertson, H. A., 3, 4
Smith, C. R., 2, 4
Sullivan, P. A., 3, 4, 5

Hastings

Paynter, M. J., 11, 14

Hokitika

Thompson, P. S., 10, 11

Kaikōhe

Lees, J. A., 9, 11, 14

Levin

Foxton, G., 7

Masterton

Frances, M. J., 3

Napier

Bennett, R. D., 18, 19
Walker, C. R., 23

Nelson

Gay, D. S., 9, 14, 15
Wells, I. M., 13

New Plymouth

Currie, B. A., 3, 4, 5
Edmondson, P. Miss, 2, 3, 4
Howell, I. H., 7, 9
Jellyman, A. D., 20
Rumbal, J. P., 7, 9
Scherp, L. A., 2
Sole, P. J., 2, 3
Wiltshire, M. A., 3, 5

Oamaru

Cook, V. A., 12, 13, 21, 22

Palmerston North

Butcher, E. F., 6, 9
Eales, M. R., 17
Markham, P. H., 3
Ryan, H. H., 9
Scott, R. M., 5, 6

Rotorua

Green, P. M., 5
Lyttle, R. J., 3, 4

Whangarei

Anderson, D. S., 6

Wellington

Bennett, G. F., 2, 5
Lokum, L., 7
Martin, J. Miss, 3

Rock Garden Plants and Perennials

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