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NEW ZEALAND PLANTS AND GARDENS

The Official Journal of the Royal New
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Volume VII.

DECEMBER, 1966.

No. I



Christmas Greetings

It is my privilege once again to convey Christmas Greetings to all our members. Christmas is a wonderful time for millions of people living in many parts of the world. We in New Zealand should be truly grateful for the heritage that is ours, to live in such a beautiful country blessed with a marvellous climate.


We, who have a love for Horticulture, have grand opportunities to obtain excellent results for our labours. In return, it is pleasing to realise that so many of our members are willing to help others by various means to do likewise. The aim of the Institute is to foster interest in and improve the standard of Horticulture and to this end we continue to do good work. Over a hundred students are taking courses for our examinations this year. An achievement of note is the start made in granting the Award of Garden Excellence, to selected plants. Hundreds of garden lovers will appreciate this service.

Flowers for Shows has been published. We can all feel proud of this excellent Handbook for Flower Show Organisers, Schedule makers, Judges and Exhibitors, covering flowers, plants, fruit, vegetables of all kinds, garden competitions, and a special section devoted to Floral Art on modern principles.

Historic and Notable Trees will be our next publication. A large amount of interesting information has already been compiled and this is being prepared for the publisher. Additional information, however, can still be supplied and your assistance will be appreciated.

Mr. Lemmon, Members of Dominion Council, our Secretary Miss Young, join me in wishing you a Happy Christmas and trust that we will have the pleasure of meeting you at our Conference in Sunny Nelson in February.

J. F. LIVING,
Dominion President.



PRESENTATION TO PRESIDENT OF THE UNITED STATES,
MR. L. B. JOHNSON AND MRS. JOHNSON

On the historic occasion of the recent visit to Wellington of the President of the United States, Mr. L. B. Johnson, and Mrs. Johnson, flowers with a message of welcome were sent to them on behalf of members of the Royal New Zealand Institute of Horticulture. The gift of flowers comprised a gay bureau arrangement using Super Star roses, scarlet Sim carnations, bulbinellas and cymbidium orchids with fronds of New Zealand ferns and a bow trim of New Zealand flax for Mrs. Johnson's pastel beige bedroom at Government House.

The following acknowledgement has been received by the Dominion President, Mr. J. F. Living.

*The White House,
Washington.
October 21, 1966.*

Dear Mr. Living,

How thoughtful you were to welcome me in such a nice way when we arrived in New Zealand at Government House. Our trip was exciting and thrilling from the moment we stepped off the plane.

Please express my appreciation to your wife, and the members of the Royal New Zealand Institute of Horticulture. I was enchanted with the magnificent flowers, shrubs and trees in your country and hope that someday I can come back to see more of the beauty that time did not allow this visit.

*With all good wishes,
Sincerely,*

(signed) *LADY BIRD JOHNSON*
(Mrs. Lyndon B. Johnson)

THE AWARD OF GARDEN EXCELLENCE

H. REDGROVE (Auckland)

When plants are growing in the wild they usually reproduce themselves from seed, and despite certain exceptions, most will reproduce true to type. And so with many beautiful shrubs, trees or plants the original wild forms or species can be grown by gardeners from seed with good results. Occasionally, however, a form superior to others will appear — perhaps with larger leaves, more handsome flowers, better flower colour, or a dwarf or spreading habit — some character which makes this form more desirable than the ordinary type.

For as long as man has tilled the soil to grow food for himself and for his animals, he has observed that by selection he could improve the size or productivity of the plants he grew. Most of these improvements he made by collecting seed from selected plants, although by doing so the improvements were not always maintained. In fact,

when reproduced from seed there is no guarantee and very little likelihood that all the progeny of a superior form will be as good as the parent variety. Only by a controlled breeding programme over many generations can improved types of seed-raised plants be stabilised.

So in due course he learned other methods of propagation, the method of taking off pieces of the original plant and making them grow new roots for themselves. Such a group of individual plants (all part of the original) is known as a 'Cultivar.'

Nowadays we all realise that a great many plants are available in superior forms many of which are so far removed from the originals as to be scarcely recognisable.

Horticulturists throughout the world are always watching for improved forms, and when one does appear it is usually propagated vegetatively so as to retain those better features in the offspring. In the past nurserymen have often tacked on the words "improved form" or "cutting grown" to indicate the selected plant. Such names, however, are nowadays unacceptable and proper names must be given to cultivars.

The Award of Garden Excellence was established to draw attention to good garden plants so that newcomers to gardening may have greater confidence in choosing varieties to grow and so more easily achieve a satisfying and beautiful garden.

Perhaps I should try to explain what is meant by a good garden plant. Let us take camellias for an example: some varieties have flowers easily bruised by wind and rain, some shatter very easily, while still others hang on to their flowers long after they have become brown and dead. On the other hand some are self-grooming and the flowers drop off when they fade. But there are others too that seem to hang their heads unduly or bury their flowers among the foliage.

Now if you can find a *camellia* cultivar of pleasing colour, holding its flowers undamaged through wind and rain for seven or eight days, and free flowering as well as having a good habit of growth then surely this variety is a better plant for garden display than the others described before. It was for these very reasons that *C. x 'Donation'* was given the A.G.E. in the first list published last year.

Another example is to be found in the scarlet bottlebrush, *Callistemon citrinus*, which is popular throughout New Zealand. When grown from seed good flowering plants are grown in about 3 years and large numbers are grown by New Zealand nurserymen in this way. But some observant gardener in years gone by found a form with larger flowers, very brilliant colour, and somewhat weeping habit and this cultivar has become known as *Callistemon citrinus* 'Splendens'. It is superior to most of the plants grown from seed, none of which are entitled to the name 'Splendens' — even if they have been grown from seed of the cultivar.

The seedlings should be called *Callistemon citrinus*, however good they are, because plants grown from cuttings are the only ones that can rightly bear the name of the cultivar.

The A.G.E. Committee has found nurserymen have propagated superior forms of shrubs in recent years without giving them cultivar

names and in some cases have not been able to recommend a plant for award until a cultivar name has been decided upon.

Many other superior plants have been the result of hybridisation between species and later selection by the hybridist. Only a few are worthy of the A.G.E. Some are particularly good for use as cut flowers and that does not necessarily mean that they will give a good display in the garden. Some, perhaps, would fade in strong sunlight while others might be easily damaged in rain. Yet others may have superior flowers, but too few of them to make them good garden plants.

PLANTS GRANTED THE AWARD OF GARDEN EXCELLENCE 1966

This award was initiated in 1965 by the Royal New Zealand Institute of Horticulture as a means to point out to the home gardener, plants that are of outstanding merit in the garden in that they will give a good display without any special garden care and are relatively easy to obtain. This year the award is given to the following eighteen plants. Notes on the suitability of these plants for the different regions in New Zealand are appended.

1. Shrubs and small trees

Chamaecyparis obtusa 'Crippsii'

A graceful small conifer of approximately 10-15 feet high, of pyramid form and with dense flattened sprays of golden foliage; the branches often have a semi-weeping habit. It is suitable for planting in any part of New Zealand.

Cotinus americanus

A shrub or small tree depending on pruning, which is grown not for its flowers but for the brilliant colouring of its autumn foliage. Its autumn colour is best when grown on poor soil, especially in the colder districts of New Zealand. It should not be grown in an exposed position as wind damages the foliage. Unfortunately this tree is susceptible to the root fungus disease verticillium wilt; therefore it should not be planted in areas known to be infected with this disease.

Erica canaliculata (syn. *E. melanthera*)

This winter flowering heath is a native of South Africa; it forms a compact shrub of 3-4 ft high and is one of the few species of *Erica* which is hardy in the warmer parts of New Zealand. It is not often grown in the South Island. When propagating this plant care should be taken to select only plants with good flower colour.

Hydrangea paniculata 'Grandiflora'

A late summer flowering deciduous *Hydrangea* which forms either a small tree or shrub, depending on pruning. It is not suitable for planting north of Auckland city but will thrive in places where autumn frosts occur when the white 'flowers' as well as the leaves become coloured to shades of bronze.

Hypericum leschenaultii

An evergreen shrub which grows up to 5 ft high. During most of the year, particularly in the summer and autumn, it produces clusters of golden yellow cup-shaped flowers up to 3 inches in diameter. It may be used in shrub plantings in the post difficult areas except in windy situations. It needs careful pruning to keep it in good form. It is hardy throughout New Zealand.

Leptospermum scoparium 'Red Damask'

This double red flowered tea tree was raised in California but grows well throughout New Zealand. It forms a compact shrub up to 6 feet high. As with other varieties of *Leptospermum scoparium* it is susceptible to 'manuka blight' and must be sprayed with lindane emulsion and white oil.

Metrosideros kermadecensis 'Variegata'

The variegated form of kermadec pohutukawa has in recent years been propagated extensively by nurserymen in the North Island. This Kermadec species has small leaves, villous when young, and flowers that are small and produced only sporadically throughout the late spring and summer. It forms a small tree about 10 - 15 feet high with well coloured variegated foliage. Unfortunately it is frost tender especially when young. In the cooler districts in New Zealand it has been grown successfully as an outdoor tub plant. Its identity has become confused with the variegated form of the New Zealand pohutukawa (*M. excelsa*) but this New Zealand pohutukawa form is rarely grown.

Michelia doltsopa

A handsome evergreen tree of 20 or more feet high, of distinct pyramid form. In spring it produces large numbers of magnolia-like flowers with a pleasant perfume. Again this plant is only recommended for the colder regions in very sheltered situations. It grows well in most places in the North Island.

Nandina domestica 'Pygmaea'

A dwarf form, growing not more than a foot high, of the widely grown plant commonly known as the 'sacred bamboo of Japan.' In autumn it produces rich coloured foliage. Its compact low growing form makes it suitable as a neat shrub for a small garden, a specimen plant for a rock garden or for outdoor pot culture. Care should be taken to select plants of good leaf form. It is hardy throughout New Zealand.

Pieris formosa var. *forrestii*

A neat growing shrub of up to 6 feet high. Not only does it produce large terminal panicles of white lily-of-the-valley-like flowers but at the same time its bright red young spring foliage appears. The form 'Wakehurst' was given the Award of Merit by the Royal Horticultural Society of Great Britain in 1957. It can be grown throughout New Zealand especially in sheltered shrub plantings.

Prunus campanulata

This *Prunus* species forms a small tree of up to 25 feet high, of compact upright form. Its pendulous bell-shaped cerise flowers are produced in early spring making the species suitable only for the warm parts, or for sheltered warm situations in the colder parts of New Zealand. It is a most suitable species for the Auckland province.

Prunus serrulata 'Shimidsu Sakura' (syn. *P. serrulata* 'Asahi Botan').

A late semi-double flowering cherry; the flowers are of pale pink with bright cerise tip when in bud. The tree is of globose form with a spreading habit; it rarely grows more than 10 feet high. It is often grown as a standard. It grows well throughout New Zealand.

Rhododendron 'Red Glow'

This New Zealand raised hybrid is a mid-season flowering variety. Its cerise scarlet coloured flower heads are freely produced and do not bleach with the sun. It is recommended that this variety is grown in the open or semi-shade as in heavy shade its growth is rather open and straggly.

Sophora microphylla (Kowhai)

An indigenous spring flowering tree growing up to 25 feet high. Although native of coastal areas of New Zealand it can be grown satisfactorily throughout the country if given protection from frost when young. Unfortunately it is susceptible to the attack of lemon tree borer and to the kowhai moth caterpillar. There is a great variation in flower colour and tree form: clonal selections should be made of forms suitable for cultivation but as it is one of the most striking indigenous plants that has proved to be suitable for domestication, the species itself has been given the award. It is hoped that in years to come suitable clones will be described.

2. Climbing plants*Clematis montana* var. *rubens*

Clematis montana is one of the hardiest of *Clematis* species that is cultivated in this country. This form of this species flowers freely in the spring and produces an abundance of pale rose pink flowers; its foliage is also attractive as its stems and petioles are red coloured. It is a vigorous climber and will grow in almost any situation.

3. Herbaceous plants*Chrysanthemum maximum* 'Esther Read'

Although this 'shasta' daisy was one of the first introductions of the double flowered varieties it is still considered to be one of the best to grow both in the herbaceous border and for cut flowers. Its flowering season extends from November to the end of January. It is easy to grow and free flowering throughout the whole country.

Gypsophila paniculata 'Bristol Fairy'

This white double flowered variety of *Gypsophila* has been grown in New Zealand for a number of years and has proved itself to be a reliable

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herbaceous plant. It produces clumps that when in full flower have profusely branched flower heads up to 4 feet high; again the flower stems are valuable cut flowers.

4. Bulbs

Nerine sarniensis var. *fothergillii* 'Major'

In New Zealand a number of species and cultivars of *Nerine* are grown. They all need warm, dry, sunny positions. This cultivar flowers in the late summer producing umbels of 10 - 15 flowers on stems of approximately 12 - 15 inches high. The flowers are orange scarlet in colour with golden stamens. If given sunny dry conditions it is free flowering.

Award of Garden Excellence Sub-Committee J. M. DINGLEY
A. FARNELL
J. A. McPHERSON
H. B. REDGROVE

THE CHRISTMAS GARDEN

By DOUGLAS ELLIOTT

It's not hard to find good reasons for wanting a good garden at Christmas time. For one thing you have plenty of time to enjoy the garden because days are long and there are holidays. And the weather, let's hope, will be the sort you want to be out in. Also you like to show off a bit to the visitors that come around at this time. So altogether you want the garden to look attractive and if possible to contain something a little different from the usual run.

Well, you can't have anything more suitable than the plants traditionally associated with Christmas. Our own Christmas Tree, the pohutukawa, or *Metrosideros excelsa*, heads the list. It's probably a bit on the big side for the average garden though you can keep it within bounds by careful pruning. Perhaps nurserymen will eventually offer, instead of seedlings, selected varieties propagated by cuttings. Then you won't find after years of waiting that you've got some of those dull dark reds. Instead you'll have bright crimsons, brilliant scarlets, and orange scarlets, all with big flowers, and you may even be able to choose between those that flower early and late. Meanwhile you can plant the rare and striking yellow cultivar from Motiti Island near Tauranga. This is not the brilliant yellow you might expect from the varietal name, 'Aurea', which means "gold". It's what I call pale lemon yellow. The tree seems to be smaller than the common pohutukawa.

You don't have to be a dinkum Aussie to enjoy the Sydney Christmas Bush (*Ceratopetalum gummiferum*). It's a double-bill tree. It puts on its first show — of not very exciting cream flowers — at Christmas and its second show — of spectacular pink or red star-shaped bracts — in the autumn. The leaves are dainty like those of the Japanese Maple.



Blandfordia nobilis
(see page 10)
(Photograph — Elliott)



Alstroemeria 'Walter Fleming'
(see page 11)
(Photograph — Elliott)

The tree grows 12 to 20 ft high and is frost tender when young. Another seasonal plant from across the Tasman is *Blandfordia* (Australian Christmas Bells). It is a perennial of the lily family with grassy leaves and tall straight stems crowned with clusters of hanging red and yellow bells. In his *Handbook of Bulbs and Perennials* Mr. R. E. Harrison describes several species of *Blandfordia* and then says, "Anybody possessing a moist peat spot should not rest until they secure plants of any of these species." But where can you "secure" them? I don't know any nurseryman who stocks them in spite of Mr. Harrison saying, "Plants seed freely and are not difficult to raise."

Lilies are in keeping with the religious atmosphere of Christmas, aren't they? The Madonna Lily (*Lilium candidum*) would be a good choice for the title of Christmas Lily but it flowers too early (at least it does in New Plymouth). Two that are perfect at just the right time are *Lilium longiflorum* — called Easter Lily in the Northern Hemisphere — and the Regal Lily, *Lilium regale*. Both are easy to grow and the variety of *L. longiflorum* called 'Dutch Glory' is especially fine and vigorous (I have to confess that some of mine have died out suddenly without leaving a note to say why). So much for the plants associated with the Christmas message.

Dozens of other good things flower at this time and you'll rely on many of the common ones to make the foundation or background of your display.

One of my favourites amongst these is the *Hydrangea*. I like its massive flower-heads, its beautiful colours (mostly soft pinks, blues, and mauves though it sometimes goes into rich reds and purples), and its ability to make a first-rate display over a long period without any attention except perhaps an occasional soaking.

Now let's discuss some of the things I mentioned earlier as a little different from the usual run.

Last Christmas I saw a shrub I had read about but never seen before, the Allspice, *Calycanthus occidentalis*. It looks roughly like a reddish-brown Winter Sweet (*Chimonanthus praecox*) and in fact the two belong to the same family, *Calycanthaceae*. The petals are strap-shaped. The tips fade to a tawny gold as they age. You'd expect the flowers of a plant called Allspice to be scented; they are, but not very pleasantly. It's a sour rather than sweet smell. The shrub comes from California, it is deciduous, and is capable of growing 12ft high.

A very beautiful and rare native shrub flowering at Christmas time is *Pachystegia insignis*. It grows about 4ft high and 4ft wide and has handsome leaves that are 3 to 7 inches long and 1 to 4 inches wide. They are very thick, green and glossy above, and thickly coated with white felt below. The flowers, about 3 inches across, have white petals and yellow centres and are on long stems that hold them well above the leaves. In his *Manual of the New Zealand Flora* Cheeseman says, of this shrub, "A very handsome and remarkable plant, quite unlike any other. Although New Zealand contains many beautiful shrubby composites, it may be doubted whether any one of them is more deserving

than the plant described above." Wouldn't you think a striking plant like this would have a Maori name or a popular English name? But none of my books mention one. Plants and seeds are sometimes obtainable from at least one nurseryman and one seedsman. Plant in an open sunny position that is well drained. The plant grows wild in stony ground beside the railway in the Koikoura district. Add lime if the soil is acid.

Bromeliads or members of the pineapple family are so popular now that a special Bromeliad Society has been formed. The plants include many that are beautiful both in flower and foliage. One of the biggest is *Puya alpestris* which has a rosette of prickly leaves and, after some years, a 5 to 6 feet flowering stem. The top 3 or 4 feet is covered with bell-shaped flowers of a strange blue-green. This native of Chile is fairly hardy and is doing well in many mild areas. It is more unusual than beautiful and is not by any means one of my favourites.

Yucca filamentosa is like *Puya* in general appearance, but its flowers are creamy white and much more showy. The slender flower stem grows about the same height as the *Puya*. The leaves are usually blue-green but there is a very pretty variegated form.

In frost-free or nearly frost-free areas you can grow a remarkable climber called *Solandra nitida*. Its common name is Chalice Vine, which describes the shape of the big flowers which are yellow with purple stripes. The buds are ballon-shaped; the fully open flower is 6 to 8 inches across. I grew this Mexican climber for several years here in New Plymouth. It made terrific growth, sending out long tender shoots like those of rambler roses. The leaves were big and tinged with bronze in their youth. But the plant took years to flower and then flowered very shyly, certainly not enough to earn its keep. It apparently needed a warmer climate. So I eventually cut it out. Here's another climber, more adaptable to the average garden: *Passiflora* 'Empress Eugenie'. I haven't found it listed in any overseas books and I have no clue to its parentage. The flowers are big (about 4 inches wide) and are a mixture of subdued but rich colour. The five outer sepals are pale green; the five inner petals are rosy pink. The filaments or thread-like rays above the petals are purple with two bands of white. These filaments are slightly curved, not curled as they are in the flower of the common edible purple passion fruit. The plant grows quickly but not so rampantly as some of the other passion flowers. It has a long flowering season. So far as I know it doesn't set fruit.

Coming right down to earth let's take a look at an *Alstroemeria*. The very mention of the name may give you the shivers. That is, if you have the common but beautiful species, *A. aurantiaca*, which is a weed in some gardens. Even the more beautiful but less common 'Ligtu Hybrid' is threatening to become a weed in my garden as it is coming up freely from self-sown seed.

But for a Christmas *Alstroemeria* I'd choose the hybrid, 'Walter Fleming'. This is really exciting. The three outer petals are cream or white tipped with purple; the inner three are golden yellow with white tips and flecked with maroon. The big heads of bloom are on 3-foot stems and make a wonderful show in the garden as well as being good for cutting.

HORTICULTURAL REMINISCENCES OF RHODESIA

(II) BIG, BEAUTIFUL AND BIZARRE

R. H. MOLE.

As a boy I was very fond of sausages, in fact so fond, that my father, when reviewing their cost on one occasion, used words often expressed by parents, 'It's a pity they don't grow on trees!' Many years were to pass before I was able to inform him that, indeed, there is in Africa, a Sausage Tree! Alas, these 'sausages' are stated to be poisonous to man.

The Sausage Tree is the common name given to a member of the *Bignoniaceae* and botanically called *Kigelia pinnata*. In Rhodesia this tree is found growing more often in the lower areas — say below about 3,000ft. However, I found it did not object to growing at about 4,000ft with a rainfall often double that it received in places in the wild. Planted in the woodland garden a young wildling grew fairly strongly, but I was dismayed one morning to see some branches broken — apparently by monkeys. I have since read that baboons are very fond of the flowers which they seek for their nectar. The flowers, produced in long racemes during September to January, are rather large, bell-shaped, and of a reddish-purple colour.

The finest specimens I saw in the wild were growing near a river — elevation about 2,000ft. Warmth, low rainfall, but with adequate soil moisture available, seemed to suit *Kigelia pinnata* very well. The trees were in fruit at the time of my visit, and after close examination I decided it would not be to anyone's advantage if one of these fruits happened to fall directly onto their head. The grey, cylindrical, gourd-like fruits (I think technically referred to as elongated pepos) were hanging by their 'tails' — long cord-like stalks up to about 4ft long. Many fruits were 4in in diameter and about 2ft long. I was told by a local plant collector that he had seen 'sausages' about 3ft long — one of these, he said, weighed 8lb ! !

Another tree introduced to my place of work was, I considered, appealing in form, attractive in flower, and intriguing in fruit. I refer to *Pterocarpus angolensis* (*Papilionaceae*), locally called Mukwa or Bloodwood. The latter common name was applied since, on cutting into this tree, blood-red sap exudes from the incision. The drooping, compound leaves up to about 12in long are made up of about nine pairs of large leaflets. The yellow, sweet-scented, typical papilionate flowers are produced in sprays sometime during August to December, but unfortunately are rather short lived. However, persisting after leaf fall, the fruits of the Mukwa become quite conspicuous. The disc-like pods are 2-3in in diameter. The centre — in which are often two small seeds — is raised and densely bristled and is surrounded by a circular, membranous wing.

I confess I was not very successful in raising this species from seed, and so resorted to vegetative propagation. For this, no small pruning knife was used, but instead a sizable saw ! Sections up to 2ft 6in

long by 3-4in in diameter were sawn from main branches in October and inserted in sandy soil (in situ) leaving no more than 9in above ground level. Covers were provided to keep off direct sunlight and during the ensuing rainy season stout shoots arose from the inserted truncheons.

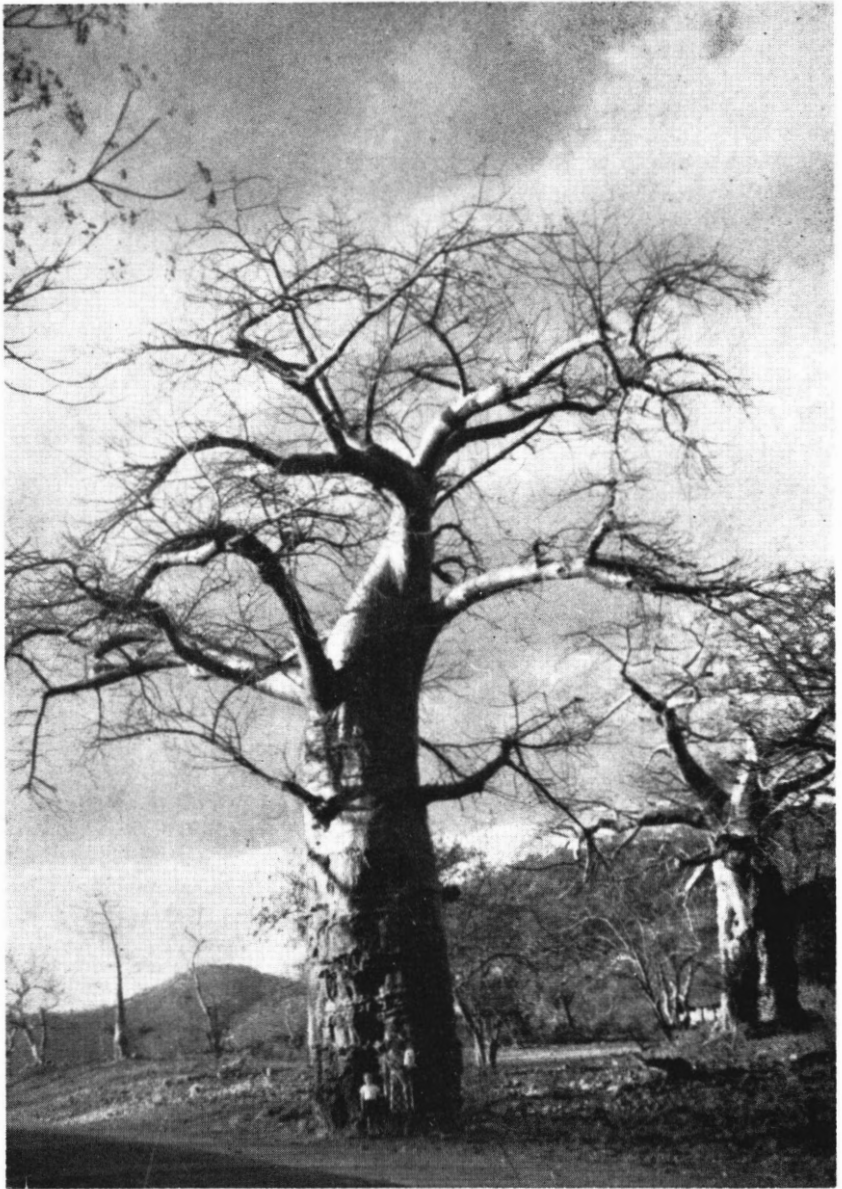
Pterocarpus angolensis grew on average to about 30ft tall in Rhodesia while heights of treble this figure were evident in Zambia (nee Northern Rhodesia). Commercially the timber is highly valued, the light to dark brown heartwood being used, amongst other purposes, for household furniture. The wood in hard, durable and polishes well.

As far as I am aware only two conifers are indigenous to Rhodesia. These are *Podocarpus milanjanus* (Yellow Wood) and *Widdringtonia whytei* (Mlanje Cedar). Both species were introduced to the property, and under cultivation I found the Yellow Wood gave the better results, both in form and rate of growth. Found in the eastern highlands — mostly over 5,000ft — wild specimens in Rhodesia were often stunted. The place to go to see these plants at their best is Mt. Mlanje in Malawi (nee Nyasaland). There, specimens may grow to about 100ft high, each species being a valuable timber tree, especially *Widdringtonia whytei*.

The mahogany family (*Meliaceae*) is well known for the timber value of some of its members, especially *Swietenia mahogani* from the West Indies. Some of the African mahoganies, while less well known perhaps, are also useful timber trees and like *S. mahogani* are, I feel, certainly of ornamental value. I am thinking, for example, of *Khaya nyasica* (Red Mahogany) and *Trichelia emetica* which bears at least three common names, viz. White Mahogany, Cape Mahogany and Natal Mahogany.

With regard to growing Red Mahogany, I remember the attractive appearance of the emergent foliage in the young trees introduced to the property, the compound leaves, of up to about 6 pairs of more or less opposite leaflets, being a rich rosy red in colour, these leaves later changing to a dark glossy green above with a paler under surface. I also remember *Khaya nyasica* as the tallest indigenous tree I saw in Rhodesia. Known as the 'Big Tree', this magnificent giant, over 200ft tall, was seen in one of the few jungle-like areas present in the high country along Rhodesia's eastern border with Portuguese East Africa. In these high border regions the dry season — April to October — is less marked and low cloud, drizzle and sometimes heavy rain, keep these forests damp until the onset of the main rains which start usually in November or December.

From my experience I think of *Khaya nyasica* as the tall, buttressed tree with comparatively little spread, while *Trichelia emetica* I remember as being less tall — on average 30-40ft high — but with a spreading crown. Its whitish, scented flowers I regarded as insignificant; the fruiting capsules containing black seeds (almost lost from view under a red arillate covering) I thought intriguing, while the compound, dark, glossy evergreen leaves, consisting of about 11 leaflets each about 5in long by 1½in wide, I thought really attractive. In fact, this foliage, set



Andansonia digitata — The giant of the low veldt in Rhodesia. This species is one of the largest trees in the world with regard to trunk dimensions.

Diameter, breast height, in some specimens exceeds 25ft.

(see page 15)

amongst the framework of the round, widespreading crown, created a tree I considered something out of the ordinary. Extended use of this species was thought desirable.

A vehicular track curved its way below and between the hillside where the indigenous arboretum was formed and the sloping ground on the other side where an exotic conifer collection was grown. Having agreed with my employer that an avenue of trees would be fitting to line the sides of this main track, it was further agreed to establish an avenue — but with a difference. On one side trees would be used to symbolize the indigenous plantation, and on the opposite side a row of exotic conifers would be established. *Trichelia emetica* was chosen to represent the indigenous plantation.

On my first trip to the thermal area in Rhodesia, appropriately called Hot Springs, the peculiar form of one tree en route claimed my attention. This species was rather tall, I reckoned on average about 50ft high, but more noticeable was the enormous girth of some specimens, and branches that tapered sharply. At the time (August) no leaves were present. I proceeded through the now hotter and drier environment to Hot Springs.

No sooner had I extricated myself from the oven-like atmosphere of the car and breathed in the sulphur-impregnated air around me than I was confronted by several piccanins offering various items of fruit and vegetables for sale. Amongst these offerings I noted some egg-shaped objects about 6 - 9in long by 3 - 4in in diameter, grey in colour, and, upon handling, velvety to touch, though hard beneath. I confess, at the time, I did not know the origin of these 'objects'. Had the piccanins known my trade I am sure they would not have thought much of their prospective customer.

On the homeward journey, having plenty of time, I was able to stop and carry out a closer inspection of one of these grotesque and peculiar trees I had noted earlier. I roughly measured its girth, at breast height, and found it little short of 100ft in circumference. The bark was soft and spongy to touch. A somewhat similar texture was found in the wood of the inner portions of the tree since someone had hacked out a sizable hole at its making a penetration of about 2 - 3ft. Looking skywards I saw hanging fruits which appeared similar to the 'objects' on sale by the piccanins.

This then was my introduction to the fat giants of the African bush — the Baobabs or Cream of Tartar trees. Botanically called *Andansonia digitata* (*Bombacaceae*), these fascinating trees are found generally in the hot, arid regions of Rhodesia, say below 3,000ft elevation. I have read that the roots of these trees have been known to spread through the sandy soil up to 100 yards from the base of the trunk — no doubt in search of moisture. I have also read that the Baobab attains a great age. Estimates exceeding a thousand years have been suggested, but this aspect of longevity must be difficult to assess since no annular rings are present in this species.

The solitary, pendulous, white, five-petalled flowers may be up to 6in in diameter, while the alternate, digitate leaves are dark green.

My first, closely examined, Baobab was always admired when I ventured its way, but on one later occasion I found my bulky monster was no more. In death there is no crescendo of a large tree crashing down to earth, but merely a sad subsidence which, as I witnessed, eventually leaves a mound of whitish, spongy material only a few feet high. No more from this site would the African children collect their 'objects'—the fruits of the Baobab.

Space will permit only brief mention of the Mopane, *Colophospermum mopane* (*Leguminosae*) which, in similar regions to that favoured by the Baobab, may form the dominant tree.

The leafless *Euphorbia ingens* seen in the lower areas and at elevations about 5000ft provided a conspicuous feature of the bush. Specimens up to 25ft tall were not uncommon. Stout, hard, woody trunks bore a many stemmed crown of erect, often four-angled, succulent branches creating a tree of unusual form. In allusion to its shape it was called the Candelabra Tree.

No mention has been made in these notes of the many diverse uses made of indigenous plant material by the African population. I was aware that many of the native plants introduced to the property (apart from those already present) were steeped in folklore, while some contained poisonous properties. For example, I understand the milky latex from *Euphorbia ingens* will blister the skin, while if a drop is put in the eye it will cause intense pain and temporary blindness — further it is stated to be poisonous to man. However, from all accounts, the Africans' use of native plants was mainly for medicinal purposes. I know that, despite trained doctors and nurses, the rural African particularly, still had firm belief in the old remedies passed down to him through the ages.

My staff was composed of rural Africans. They did a good job of work but at times I wondered what thoughts were passing through the minds of those who assisted in establishing many of these native plants. Perhaps they thought the Bwana was doing them a good turn in bringing these different plants nearer to hand whereby, ultimately, portions of them might be utilised for medicinal purposes. Or would some be earmarking those trees used in connection with the Africans' deep-rooted belief in the supernatural — still very much a part of the African's way of life in Rhodesia today.

HEBES FOR THE GARDENER

MARGARET M. MARTIN, F.R.I.H.(N.Z.), (*Whangarei*).

There is no race of plants in our country which so easily lends itself to cultivation, which has such diversity of form, and accommodates itself to such a variety of conditions, both of climate and of growing place, as the genus *Hebe*.

Found from seashore to mountain top, in wet or dry, windy or sheltered conditions, in sun or shade, it provides the answer to almost any problem that the gardener may encounter.

Hebe and *Veronica* are not separately classified in the Royal Horticultural Society's *Dictionary of Gardening*, although *Hebe* was first regarded as a separate genus in 1789, revived by Pennell in 1921, and generally accepted as such by New Zealand's botanists in 1926.

For our purposes the name *Hebe* applies to those shrubby and woody evergreen species of New Zealand as well as to similar plants which occur in South America, Australia and New Guinea.

A subsection of *Hebe* known now as *Parahebe* contains some slender and less woody plants which were formerly classified with *Veronica*. These have proved themselves as good garden plants, though often needing special conditions or growing places.

Parahebe catarractae formerly known as *Veronica catarractae* is one such, and as its specific name (from the waterfall) suggests, is a plant of stream sides, where its roots are often washed over by floods, and its foliage water sprayed. It has a wide distribution, and a number of forms, these depending largely on altitude, soil and growing place such as wet rocks or scree. It is a profuse flowerer, with long racemes of white flowers marked with pink or mauve. Its slender graceful stems set with narrow, toothed leaves are lax and spreading often rooting at the base, so that it makes a good show on a wettish bank. I have grown it successfully in a cool damp place as far north as Whangarei.

Parahebe linifolia often called the wet-rock *Veronica* is a real beauty, though not as easy in cultivation as *P. catarractae*. Nature should be imitated as far as possible. A very good picture of it taken at Arthur's Pass appears in the second edition of the late Dr. Cockayne's *New Zealand Plants and their Story*. It is found only in South Island in high country from 1500 to 4000 ft. Of rather prostrate habit, with slender branches rooting at the base, and narrow close set leaves, it has quite large flowers up to $\frac{1}{2}$ inch across, each stem bearing several short racemes of two to five flowers, white or pale rose pink. This is a most desirable plant for a cool moist place and would be ideal on wet rock beside a waterfall, in South Island or under specially cold conditions in the south of North Island.

Coming to *Hebe* proper, we have, in Northland, a most interesting and decorative plant in *Hebe diosmifolia*, of which two forms are commonly grown in gardens in Whangarei. To the gardener's eye they are similar in size and general appearance, both being neat, upright and compact bushes up to 3 feet high. But one bears white and the other mauve flowers, and the leaves of the white flowered form are longer and narrower than those of the mauve flowered plant. Both produce rather broad corymbs of flowers up to 3 inches across, these being especially impressive in the mauve form. As it occurs in nature only in Northland, care should be exercised in the choice of growing



Hebe diosmifolia (see page 17)

(Photograph Douglas Elliott)

place south of that area. A white flowered *Hebe*, closely resembling the white flowered form of *H. diosmifolia*, was grown in my old home in Marlborough many years ago. This was probably *Hebe divaricata* collected on hills not far from Havelock, and made a good garden plant, also liking a little shade.

Hebe speciosa, that well known and handsome species, often seen in gardens, and with a wider distribution than *H. diosmifolia*, is more easily grown though liking a dryer sunnier position, on a bank for preference. Its type locality is given as the South Hokianga Head, but I have walked and climbed all over and about it, without finding a single plant, but this place is much wind eroded and also grazed by cattle which like it as well as other species. Its thick almost fleshy leaves are up to 4 inches long, with the reddish purple flowers in racemes longer than the leaves and produced towards the ends of the 5 feet stems. It is a handsome shrub for a coastal garden in almost any part of the country. It hybridises very freely with several other species, and in so doing has been responsible for many named forms, some of which are of garden origin.

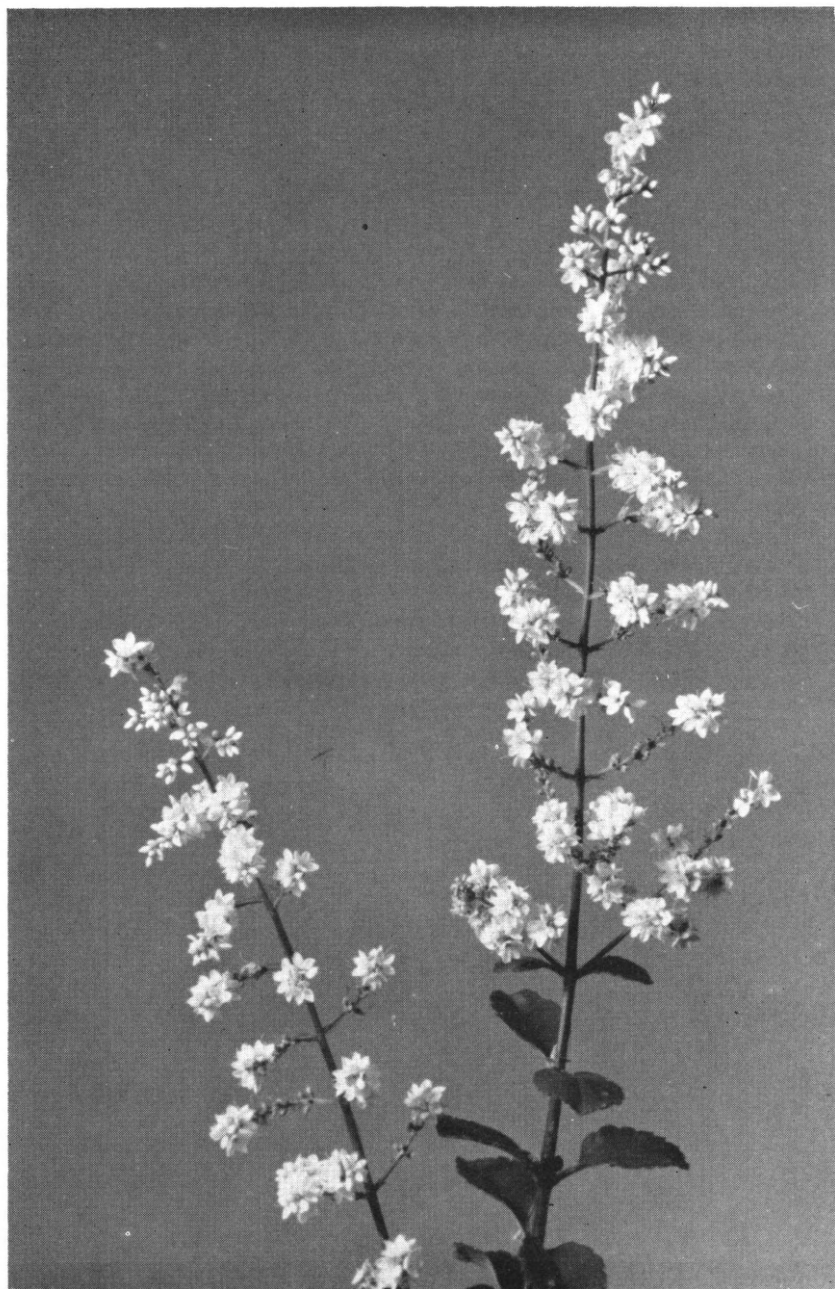
In particular there is one well known as *Hebe x andersonii* which in its variegated form is a popular garden plant. It is a cross between *H. speciosa* and *H. salicifolia*. The long racemes of this hybrid are a pleasing shade of mauve. The variegated form sometimes reverts to green. *Hebe parviflora* is not one of the showiest for its flowers, but it has a most attractive habit of growth and foliage which lends itself to use as a hedge. The form I have seen used in such a way in Marlborough may well be the shrub-like plant now called *H. parviflora* var. *angustifolia* — the leaves were certainly narrow. They are of a light yellow green colour and were a pleasant contrast to more brilliant colours in the flower garden. A fairly hardy plant, except perhaps in the colder parts of South Island.

Another member of the genus which may be used as a hedge is *H. elliptica* which has a fairly wide range of distribution and is quite hardy. It may be relied upon to make a 5 feet hedge and produces large scented flowers blue at first, but fading to white. Like any hedgings these natives should be tended in the same way and clipped after flowering, or when becoming untidy.

Two hybrids between *H. elliptica* and *H. salicifolia* have long been grown in gardens, *Hebe x lewisii* with large lilac flowers and *Hebe x amabilis* with white flowers. These as well as various cultivars have often been propagated from a single plant, and distributed among gardening enthusiasts long after the original plant has been lost.

It is a sad fact, too, that scientific descriptions by botanists sometimes lack details essential to the gardener, who, for instance, would prefer to know the colour and size of flower rather than the meticulous details of stem, branch and leaf.

For the alpine or rock garden there are a multitude of ball-like, cupressoid or whipcord forms which are extremely hardy, and since they come, for the most part, from high altitudes, will need good



Hebe hulkeana (see page 22)
(Photograph -- Elliott)

drainage, drier and colder conditions. They are generally compact in habit and often most distinctive in the colour of their foliage — grey greens, glaucous or golden.

The boxed-leaved *Hebe*, *H. odora*, has apparently many forms, some previously distinguished as *H. buxifolia*, and some making attractive ball-shaped bushes that can be used as good accent plants. It has a wide climatic range, and so should be hardy in most places. The ball-like form is fairly frequent in the genus, and can be used to great advantage in the garden. Care must be taken to prune, otherwise the centres of these dense bushes are apt to die out.

Glaucous leaved hebes provide another colour note in the garden. One of these, *H. pinguifolia*, a 3ft. shrub from the drier side of the South Island, has a variety of forms. Some of these are prostrate, and some have their rather thick leaves edged with red, compensating for their rather poor white flowers.

Another glaucous leaved plant is *H. pimeleoides* most distinctive with slender prostrate branches adorned with small thick leaves sometimes edged with red and rather striking spikes of blue purple flowers. It is also a plant for a dry, sunny rock garden.

Perhaps most unusual in form of all the genus are the whipcords, in which the leaves are reduced to scales, and so closely pressed to the stem as to give the appearance of cord. Most distinctive in form and often in colour as well, they are ideal plants for exposed positions in rock or scree gardens. For the most part their flowers are neither abundant nor showy, but it is the habit of growth and colour of leaf and stem that sets them apart from all others. They are mountain dwellers, none occurring north of the Volcanic Plateau, and most are confined to South Island, so that their hardiness is assured.

H. tetragona — (the four angled *Hebe*) so called from the leaves being arranged in four ranks, is perhaps the least hardy as its habitat is the Volcanic Plateau. It is one of the yellow green species and makes a neat erect bush of from 6 inches to 3 feet according to soil and situation.

Hebe armstrongii is also yellow green, has been grown in gardens for many years, and is on that account the best known of the whipcords. Wild plants seem now to be extinct though careful search in some of its more inaccessible (to stock) habitats might reward a plant hunter's zeal.

The most remarkably coloured and patterned is *H. lycopodioides* from the dry side of South Island. This is a small erect shrub with very slender stems, closely clothed and tiny leaves striped and margined with yellow. A dry sunny slope should suit this most unusual plant, and its colouring should be popular, at least while the present love for leaf variegation lasts.

Taller than most in this section and with the most unusual growth form *H. cupressoides*, as its name indicates, resembles a cypress. With dense dark blue-green shoots and scale-like leaves it bears tiny blue-

purple flowers, crowded into small heads on the tips of the branches. It is still another plant from the drier side of South Island and should be treated accordingly. I should not advocate growing any of the whipcords north of their natural habitats except in places where the micro climate might specially suit.

We now come to a different type of plant altogether, and one which for size of flower should appeal to most gardeners, *H. macrantha*. Its pure white flowers, each $\frac{3}{4}$ inch, rise in racemes amidst pale green, glossy leaves. The bushes which they adorn may reach 3 feet, though all the plants I have seen were much smaller. It comes from rocky country in subalpine scrub in the central part of the Southern Alps. *H. macrantha* likes slightly wetter conditions than its variety *brachyphylla* which keeps to the drier mountains of Marlborough and Nelson. Both were formerly grown at Otari Open-air Museum at Wellington.

The real elite of the genus are also South Islanders. Of these, *H. hulkeana* is justly famous and is grown far and wide by gardeners in New Zealand and overseas. I saw it flourishing in a churchyard in Melbourne, an indication of what it will stand in the way of temperature range — light frost in winter and over 100 deg. F. in summer. In its own home province in Marlborough it is seen in many gardens, some superb specimens growing where due care is given.

Quite unlike any other *Hebe* it comes in several forms and its flowers vary in colour from white to lavender or lilac, but its most distinguishing character is that the flowers form a tallish 18-inch panicle about 1 foot wide. Most hebes form racemes or corymbs. It is often found as a rather straggling shrub on the edge of river terraces and on dry rocky faces in creeks or gorges, often, too, in the most distinguished company — botanically and horticulturally speaking. It is often in limestone areas, for example in Woodside Gorge, and in cultivation does the better for a little lime. When properly tended and pruned after flowering it makes a good compact shrub up to 4 feet high, and makes a goodly show when crowned with its lovely mauve panicles.

Pink is quite a rare colour in our flora, but in *Hebe laudiana* we see it in a most appealing shade. Found only on Banks Peninsula it is still another plant of low rainfall requirement. It has a character all its own, and is a choice plant by any standards, deserving to be better known and more widely grown. Not as tall as *hulkeana* and perhaps more spreading, it may reach 2 ft. Its leaves are beautiful, thick, almost fleshy, about an inch long and almost as wide; the margins are toothed and edged with red. The flower heads are in corymbs, 2 inches or more across, and crown the plant. As I know them they are definitely pink, not lavender.

My first sight of this plant in its natural habitat was one of the never-to-be-forgotten experiences of my life. I had been botanising round about Akaroa, and had climbed one of its little peaks which are said to be the rim of an old volcanic crater. Near the summit I came over a little ridge and saw before me the most breath-taking

picture. Within a bowl of silver grey volcanic rock, about 6ft. across and 2 feet high, was the most delectable looking compound one might ever see. Above the almost submerged sea of green leaf floated a frothy wave of pink, lapping the silver rim and spilling across its edges, a mass of *Hebe lavandiana* in full bloom. They were held up and imprisoned by the grey bowl, shielded from wind and protected as in a hothouse, which doubtless accounted for the luxuriance of growth and bloom. The outer florets of each corymb were fully open and pale pink in colour, the inner were still in bud and deep pink giving a lovely two-tone effect. I can only hope this plant still flourishes, but the depredations of man and beast have so often wiped out rare and beautiful plants, that many are steadily disappearing. It is to be hoped that these and many more will find a place in public parks and in reserves where they will have a better chance to survive and perpetuate themselves.

FOLIAGE FOR EFFECT

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

Flowers, fruits and autumn tints may come and go with the seasons, but the colour and texture of foliage, and especially bold and unusual foliage, together with the size and habit of the plant have a much more enduring value in giving atmosphere to a garden. It is because these values are more enduring, and can stand up better to adverse weather, such as drought and dry searing winds, that the decorative effect is so much more important in the more exposed parts of Canterbury, where flowers do not last very long during the heat of summer.

Foliage plants present their own problems, however, because the brighter kinds must be planted with discrimination and restraint. The glowing fiery red of *Photinia glabra* 'Rubens', or the rich yellow of the golden privet can be used with dramatic effect in the large garden or park, where their aggressive colouring provides a welcome contrast with their surroundings. It is a very different matter in the small town garden where they can dominate the scene until you become sick of the sight of them. Nevertheless, if placed in some semi-secluded corner, where they can be seen from a comparatively limited point of view, they may be used to give character and distinction and may never outlive their welcome.

Value of Shelter

One of the most important factors that must be considered when planting foliage plans is the provision of shelter, because those whose leaves are large and spectacular are all the more easily damaged by rough winds. We still plant *Gunnera manicata* by the waterside on account of its great rhubarb-like leaves, but little effort is made now-a-days to modify selected specimens for special sites as used to be done in the days when labour was both cheap and plentiful. In those days what were called 'sub-tropical beds' were almost commonplace when

some of the hardier sorts from the warm-temperate and tropical countries were grown in glasshouses during the colder parts of the year and plunged out of doors for a few brief months in summer. Some very unusual focal points were achieved by making beds of young trees and planting them a yard or so apart, cutting them down to ground level in the early spring, and then reducing the subsequent growth to the strongest shoot. In this way it was possible to obtain shoots up to 12 feet or even more in the course of a single season and where there was plenty of shelter and an abundance of moisture in a rich soil the leaves attained a prodigious size.

Ailanthus glandulosa, the Tree of Heaven, was one of the favourites. Under normal conditions it grows to be a tree of 50 to 70 feet with pinnate leaves 18 or 20 inches long and bearing no more than a dozen or fifteen leaflets, but grown under the system described, great 4ft leaves with thirty or more leaflets were not uncommon. Treated in the same way, *Catalpa bignonioides* can be induced to provide strikingly handsome leaves that are beautifully tomentose when young and measuring 6 feet in length by about 4 feet wide. They are heart-shaped.



Cardiocrinum giganteum naturalised
(Photograph — A. W. Anderson)
(see page 26)

Somewhat similar conditions could be achieved with two poplars, the Chinese *Populus lasiocarpa*, and the Balsam Poplar, *P. balsamifera*. The former is notable on account of its red stalks and midribs while the latter is worth planting for the sake of its fragrance in spring when the bursting buds are covered by a gummy substance, which has given its name to the tree. In both cases the more or less heart-shaped leaves may grow to a yard or more in length. Although their foliage doesn't reach anything like the same dimensions, many of the eucalypts, including the ubiquitous blue gum, *E. globulus*, can be induced to provide very attractive thickets of blue leaves by the simple process of keeping the plants from developing their adult foliage by frequent cutting back and thinning of the young shoots.



Hosta plantaginea
(Photograph — Elliott)
(see page 26)

Diversity Among Shrubs

Most shrubberies consist of what can only be called great rounded masses of foliage and, while that is all that can be expected in exposed gardens, there is plenty of material that can be used to diversify the picture. Palms, tree-ferns, cabbage trees and native flax will at once spring to mind. A combination of the last two may bring both character and interest to a neglected corner, and both can stand up to fairly dry conditions once they are thoroughly established. There are several varieties of flax with variegated or coloured leaves, and one must take great care not to overdo the mixing.

Nothing can excel the delicate tracery of tree-ferns, but they are not plants for every garden. Some can stand exposure better than others, but it is only a limited kind of exposure at best, and all grow better if given some shade as well as shelter from prevailing winds. Toughest of the lot is the wheki, *Dicksonia squarrosa*, but even it cannot be expected to do without some shade.

Ground Cover

We all appreciate the cool green beauty of fern and undergrowth in the bush, and that reminds us of the possibilities that all too often lie neglected in many a woodland and shrubbery through the lack of this sort of ground cover. In this case the size and quality of the foliage is not very important because the main appeal is in breaking the hard appearance of dry soil. So variation should be the rule, varying the dappled sunshine among the pale growth of periwinkle, *Vinca major*, with the larger leaves of some of the ivies or the hostas. The latter are handsome herbaceous perennials of which there are six or eight species and several varieties in cultivation. All have thick spreading tufts of broad, usually bluey-green, leaves that are of more importance than the rather transient flowers. One of the best is the Corfu Lily, *H. plantaginea*, which is often listed as *H. grandiflora* on account of its fragrant pure white flowers. It likes a warm corner and rarely flowers unless it gets plenty of sun.

There are several beautifully variegated hostas and the same applies to the ivies, one of the more desirable of which is the Canary Island *Hedera canariensis*, a strong grower with variously shaped leaves that are beautifully blotched and margined with cream.

Some excellent ground covers arrive by accident. I know of a woodland where *Cardiocrinum giganteum*, better known as *Lilium giganteum*, now covers several acres, giving an air of distinction to what would be a very ordinary plantation of oaks. When an old Victorian conservatory was blown down some thirty years ago there happened to be three bulbs growing in a pot. They were planted out in the woodland and have spread to become the pride of the whole place. Of course their finest hour is during the early weeks of December when the flowers are at their best, but the ripening seed-heads are very imposing, and the spreading seedlings under the trees are an enduring delight.

Foliage from Seed

It isn't always possible to grow the larger foliage plants in a town garden, but there are many of the smaller kinds that are easily raised from seed and these may be used to fill up gaps caused by the removal of old shrubs or as summer shelter for young ones that are still too small to fill up. The graceful maize, *Zea mays* 'Gracillima Variegata' has all the elegance of a dwarf bamboo and its broad bands of yellow mix well with the coarser leaved *Z.m.* 'Quadricolor' with its stripes of red, purple, cream and green. Equally easy is the Castor Oil Plant, *Ricinus communis*, obtainable in forms growing anything from 4 to 8 feet and bearing leaves in varying shades of green or bronze, and stems varying from red to green. The buff or greenish flowers are scarcely noticed, but the red fruits add interest to the bush in the autumn. I doubt if you could get a greater contrast with the large leaves of the Castor Oil Plant than the soft fluffy balls of the summer cypress, *Kochia scoparia*. Some gardeners prefer the var. *trichophylla* because it turns red in the autumn, for which reason I have heard it called burning bush, but I prefer the beautiful soft green of 'Childsii' which retains this pleasant colour throughout its life.

This is but a taste of the variety of interesting plants that may be grown for the sake of their foliage. I have not had space to mention the abundance of the hebes or the conifers which must wait for another day.

NOTES FROM THE CHRISTCHURCH BOTANIC GARDENS

L. J. METCALF (*Assistant Curator*)

The main feature of the weather over the past few months has been the general lack of rainfall. Continuing on from a winter which was drier than normal, the spring months have been very dry. For example, although the October rainfall was almost average, it was an exceptionally dry month because most of the rain fell on one day. So far the City has had only 18.50 inches of rain so that unless the unusual happens we will have a rather dry year. Amazingly the lack of rain seems to have had little effect on the growth of most plants. The trees and shrubs have grown particularly well and in the eyes of some have never looked better. Spring flowering herbaceous plants have been good too, and in some parts there have been very fine displays.

During the months of October, November and December one of the most attractive parts in the Gardens is the Primula Garden. Situated on the banks of a small stream in the Woodland, the Primula Garden was formed during the winters of 1955 and 1956 and now that much of the early planting is attaining some size it is now assuming a degree of maturity. As yet it is still not particularly well known, as once the display of daffodils is past not many people visit the area. However, it is noticeable that each year a few more people are discovering this little-known part of the Gardens.

Mainly Asiatic primulas are grown, most of the outstanding species belonging to the Candelabra section, although a number of others are grown. First to flower in August and September is *Primula denticulata* which has large heads of pale lilac or lilac-purple. Grown from seed it is quite variable and a number of different colour forms ranging through lilac, mauve and purple are produced. The white form, *P. denticulata* 'Alba', is very beautiful and well worth growing if it can be obtained.

In the Candelabra section, probably the most outstanding species during October and November is *P. helodoxa* which comes from western Yunnan and upper Burma. It is a magnificent plant attaining 3 feet or more when in full bloom. The fragrant flowers are a rich yellow and are borne in numerous superimposed whorls up the tall stems. When grown in company with *P. pulverulenta*, which flowers at the same time, it is most effective. *Primula pulverulenta* comes from the mountains of Western Szechuan where it was discovered and collected by E. H. Wilson and it is one of the finest of the Candelabra primulas. It grows equally as tall as *P. helodoxa* and perhaps its greatest charm lies in the flower stems and calyces being covered with white farina which contrasts admirably with the dark-eyed, crimson flowers. To see it at its best *P. pulverulenta* needs to be grown in fairly large drifts. *P. pulverulenta* has given rise to various colour forms, the most notable of which is the well-known Bartley strain. This strain was evolved by a Mr. G. H. Dalrymple of Bartley, England, and it includes white, various shades of pink and salmon. It is some two or three years since this strain was grown in the Botanic Gardens but efforts are being made to secure new stock.

Of the other Candelabra primulas the next to be considered is *P. japonica*, which for general garden purposes is one of the hardiest and most amenable. It is a robust growing plant with bold foliage and strong stems bearing several whorls of purplish-red flowers. It is happy in any moist, loamy soil in a shaded situation and will freely reproduce itself from seed to add to the thickness of the planting. *Primula japonica* was discovered in 1855 near Hakodadi, Japan; but it was not brought to the attention of the gardening world until 1871 when it was exhibited at one of the London flower shows. There are a number of distinct colour strains which vary from white to crimson. The one known as 'Miller's Crimson' is one of the commonest; in this strain the flowers are a crimson with a dark eye and without any trace of magenta in their colouring. *Primula japonica* 'Postford White' is really outstanding, the flowers being pure white with a yellow eye. We have had numerous disappointments trying to raise plants of this strain, the seedlings always coming with a trace of pink in them. However, this year we have been fortunate enough to obtain a few plants in the true strain.

Primula beesiana and *P. bulleyana* flower through November and December and help to prolong the display. Both are fine plants although some authors state that *P. beesiana* is not one of the most beautiful of its section. This is a matter of opinion and in Christchurch it certainly makes a fine display. *Primula beesiana* was discovered by George Forrest in

1908 in the mountains of Lichiang and the colour of the flowers is best described as a rosy carmine. Concerning *P. bulleyana* there is no doubt. It is a handsome plant with crimson flower buds and bright golden yellow flowers. It was also discovered by Forrest in the moist alpine meadows of Lichiang. The last of the large growing Candelabra primulas to be mentioned is *P. burmanica* which, as the name suggests, comes from Burma. It is rather similar to *P. beesiana* but has flowers of a purplish, or reddish-purple colour, with a yellow eye. This species appears to be one of the least known of those mentioned.

Among the later flowering species are *P. florindae*, *P. sikkimensis* and *P. viali*. This latter is an interesting species which comes from Yunnan and was introduced into cultivation in 1906. It is one of the last primulas to break forth into leaf and it is usually late October before the first leaves appear above the ground. The flowers are produced in a dense spike from 1 to 1½ feet high. The calyces of the unopened flowers are bright crimson while the flowers are bluish violet and the effect of the flowers progressively opening up the spike is quite striking. *Primula florindae* and *P. sikkimensis* both belong to the *sikkimensis* group and are distinguished by their tall stems bearing rather loose heads of pale yellow to bright yellow flowers. They revel in very moist conditions, even wet, and plenty of rich humus.

One of the most charming species grown is *P. cockburniana* which has flowers of a very rich orange colour borne on slender stems. It is unfortunately a short-lived plant and fresh stock must be raised annually in order to be sure of keeping it. Some of the other species of *Primula* which are grown are *P. capitata* and its variety *mooreana*, *P. polyneura*, *P. secundiflora* and *P. chionantha*. This last is a charming species which comes from the high alpine meadows of Yunnan. The leaves are dusted with a pale yellow farina and the fragrant flowers are of a delicate shade of white.

Although there are quite a number of places where these plants will not succeed there are probably just as many where they will, and where conditions are suitable far greater use could be made of the easier species.

RHODODENDRONS — A VETERAN'S NOTES ON CULTURE AND CARE OF CULTIVARS (II)

C. H. WILY, (Auckland).

PESTS AND DISEASES

A noted American writer lists and describes over 40 diseases and pests that the rhododendron is heir to in England and America. In fact, he devotes 35 pages to this subject.

We in New Zealand are more fortunate: in fact we suffer chiefly from two major disorders — thrips and die-back. There are certainly other troubles we may have: for instance chlorosis (yellowing of the

foliage) caused by excess of lime, by overwatering, using nitrates for fertilising instead of decomposing green vegetable matter and using it as mulch, failure of the plants to set flower-buds by too deep shade, etc., but these are not diseases. They are mainly the result of faulty methods of culture. Unsuitable growing conditions will induce leaf-spot or marginal browning of the leaves.

Thrips are sucking insects whose presence is recognisable by the foliage going silvery on top and usually a dirty, muddy brown below. For this spray with a D.D.T. preparation, or malathion. Do NOT use a D.D.T. preparation sold for use in the house. These are almost always kerosene-based and will severely harm the plant.

Start spraying before the end of October. It is true you will not see any signs of thrips so early in the season, but a few will have hatched and if these are not checked they will build up rapidly and cause damage later. Use some spreader like 'Wetsit' or 'Wetta' with your spray — only 6 or 8 drops to half a gallon of spray. This aids its retention on the foliage. Thrips seldom attack a variety with thick indumentum on the underside of the leaf, or with bullate leaves, and are far less troublesome to a plant in more or less full sun than to one in the shade.

Both sides of the leaf should be sprayed — in fact spraying of the underside is the more important.

If a wind is blowing do not stand to windward of the plant where you may inhale some of the spray. For bigger plantations where you may spend some hours on the job, it is wise to use a mask.

Thrips are more troublesome in the north; in fact they are seldom seen in Taupo.

Some species and cultivars are far more susceptible to their ravages than are others. Observation over a few seasons will teach one what cultivars are badly attacked and these should receive special attention.

DIEBACK

Here the foliage, a twig, or sometimes a whole branch will begin to wither and finally dies.

The exact cause seems not to be certain, but my own observation goes to show that it stems from starvation over a period. This starvation may be caused in a number of ways. It may be from robbing roots or too dry summer conditions, or it may be from loss of roots in the soil caused by insects eating the roots (chiefly grass-grub) or by soil borne organisms termed *Phytophthora* spp. The difficulty is to determine which type of cause is the trouble.

If there are no large trees nearby you can discount robbing roots, though the average tree sends its roots out far further than one thinks.

It may then be grass grub, but this is found nearly always in light fluffy soils. If you stir the soil you may find the tiny grey grubs about

$\frac{5}{8}$ of an inch long. The treatment is to spray the soil liberally with D.D.T. or malathion. When species of *Phytophthora* become established in a *Rhododendron* garden the control is difficult. Scattering a form of copper such as 'Cuprox' was at one time advocated, but its efficiency is now questioned.

You should also cut off any twig that is affected, and burn it. If left lying it will spread to other plants. It can even be carried on the secateurs, so I always rub a little 'Cuprox' on the blade.

Both grass-grub and *Phytophthora* feed on the roots of the plant. I have pulled up a small *Rhododendron* and found it literally had no roots: the grassgrub had eaten the lot.

Stirring Soil

Rhododendrons are very shallow rooted and most of their feeding roots lie quite near the surface. This taboos the use of spade or hoe and comes down mostly to hand weeding, or possibly the careful use of a sheath knife.

Hosing

When you water your plants do it thoroughly. Inadequate watering is often worse than no water. It can cause the surface roots to resume activity and put out their fine hair feeders that die when the sun has dried out the surface again, and there is no moisture lower down to be drawn up to replace it. A hose run gently all night is the better way.

A hose that has been lying in the sun for some hours can make the water in it surprisingly hot. This is bad for any plant, especially one that requires a cool root-run. Run the water out until it gets cool to the hand before you turn it on to your plant.

MULCHING

Though every gardener knows the purpose and value of mulching, not everyone realises that there are several types of mulch with different actions that must be taken into account.

First there are two types of feeding mulch. There is that composed of green, undecomposed organic matter — say green leaves or fresh lawn-clippings. This will, of course, ultimately break down into humus, but in doing so it robs the soil under it of nitrogen. This lost nitrogen must be replaced, or sooner or later a nitrogen deficiency will result. This can be done with ammonium sulphate or by blood and bone manure.

In breaking down, this green matter often generates considerable heat, so if put on too thickly the plant may be damaged or even killed outright.

The second feeding type is organic matter that has already broken down into compost, e.g. leaf-mould, etc. This robs no nitrogen, commences its function of feeding at once and is quite harmless.

The third type is non-feeding and merely covers the roots without in any way altering its own character — say a plastic sheet, a large flat rock, or even a large board. Such a mulch is quite useful.

If you go out into the fields in very dry weather when the grass is parched and the ground hard and dry, and turn over a large stone, you will find the ground under it soft and moist and probably full of worms. A rock, flat surface down, over the roots of your plant will naturally have the same effect. A very heavy rock is not desirable;



Rhododendron fortunei 'Magnificum'
Hardy Chinese species with lilac pink flowers
(Photograph — Elliott)
(see page 38)

its weight compacts the soil under it. If you can get one about 15in by 10in and about 2 to 2½ inches thick, and perfectly flat, this is ideal. Such pieces can be split out of rock that has been water laid.

Mulches should only be applied when the soil is fully moist. Otherwise the mulch merely acts to exclude any rain that may subsequently fall and its action is worse than if no mulch had been used.

FERTILISING

The *Rhododendron*, if given the opportunity, is rather a gross feeder, but is also rather particular about its food.

The standard artificial fertiliser is 2 parts by volume of superphosphate and 1 part each of sulphate of potash and sulphate of ammonia. Always use the sulphate and **never** the muriate. (There is a good chemical reason for this which we need not go into). Bonedust, blood and bone, and fish manure are also good. Dung of ruminant animals, usually the cow and sheep, is excellent, provided it is properly matured. Sheep manure got from under the woolshed grating has the advantage of being completely matured (having probably been there for 2 or 3 years) without having been exposed to the leaching effect of rain. Horse manure, being a 'warm' manure, should not be used. Poultry manure is very strong and can be safely used only when mixed with about three times its own volume of soil and allowed to stand for several months, with occasional turning over.

Fertilising in Autumn

Where subject to any frosts do not fertilise rhododendrons after the middle of February. This usually causes young growth that has not had time to become firm and will suffer badly in an early frost.

The best times to fertilise are in the early spring to assist October-November bloom, and again in December to assist the formation of new flower buds for the succeeding year.

Foliar Sprays

This is a variant method of fertilising, though certainly not a substitute for the method just discussed. Their great virtue is that they act in a matter of hours instead of weeks or months and that they may thus be used far later in the season than would be wise in the case of ordinary manures, and secondly that there is no risk of their being captured by trace elements in the soil and 'locked-up' so that they are not available to the plant. As to their speed of action, phosphorus and potash applied as a foliar spray have been detected in the sapstream of the plant within 2 hours of application. Nitrogen in the form of sulphate of ammonia usually takes from 12 to 14 hours.

Foliar sprays are usually most effective when used when the evening dew is falling. For some reason the foliage absorbs a foliar spray more readily at night. There is no necessity — as many people believe — to spray the under side of the leaf. Rhododendrons, and

possibly, I imagine, most plants, absorb a foliar spray with equal readiness, through either side of the foliage.

Finally, two words of warning. Firstly, do not have your spray too strong. Half an ounce in a gallon of water is in most cases sufficient. Secondly, do not use a foliar spray for trace-elements unless you know that particular element is deficient in your soil. Even then, use it in very weak dilution. Used at random, a trace-element could do considerable harm by locking-up other trace elements — copper for instance can be locked-up by molybdenum — thus creating an imbalance of elements.

I repeat that foliar spraying, though valuable when used for its right purpose, is in no sense a substitute for regular and orthodox root-feeding.

Dead Heading

This consists in removing the seed-pods when the flowers are over so that the plant cannot make seed. To be allowed to develop its seed is very exhausting for a plant. If 'deadheading' is promptly carried out the crop of flowers the next year is more prolific. With most varieties one merely has to grasp the twig with the left hand, and the



Rhododendron nuttallii

A fragrant, cream coloured tender species for very sheltered gardens
(Photograph — Elliott)

bunch of seed-stalks with the other, and give a sharp twist. A few varieties are not so easy to deadhead this way and for these I use a small, fine pointed pair of secateurs.

Close below the flower you will see three dormant buds. These make the shoots for next year. Be careful to leave these on. Some varieties have the habit of starting these buds as the flowers begin to open, and by the time they have quite faded the new shoots may be an inch or more long. Here special care must be exercised when deadheading.

If one has a large number of plants the business of dead heading can become tedious. As the plants grow and possibly give 200 to 300 blooms, it may take up to half an hour to deal with each one. Thus, with the large growing sorts, there comes a time when one can no longer go on deadheading. This does not greatly matter. By the time it has reached that stage of maturity it can look after itself.

Pruning

Normally rhododendrons need little or no pruning, though, with the exception of the smooth-barked varieties (mostly descended from the *thomsonii* and *barbatum* series), they will take the knife quite happily. Pruning may be resorted to, however, to shape a lopsided or unshapely plant, reduce the height of a plant that has run up and become straggling and leggy by persuading it to adopt a more compact and rounded form such as well shaped rhododendrons should have, or to reduce the size of one that has outgrown its position. Pruning should be done in mid-spring. Make the cut straight across the branch just above a dormant bud pointing outwards, not slantingly as in pruning a rose.

Do not throw the prunings over the fence into an adjoining field where cattle can get at them. The leaves, in a semi-withered state, can be highly poisonous to livestock, as a friend of mine once found to his cost.

A Spindly, Leggy Plant

This can be assisted to become more compact, and throw more side shoots, and therefore more flower in the following way:

In early spring the flower buds will have formed. These will be fat buds. The leaf buds are more long and thin. Clip off some of these long buds, and just under them you will see three dormant buds. (Usually there are three; a few species have five).

The result will be that instead of one long shoot you will get three shorter ones on that branch. Do this for two or three seasons, and that will go a long way towards making your plant more compact and less straggly. You will also get a good deal more flower in succeeding years.

Suckers

When the plants are not on their own roots, but are grafted on a virile stock (*R. ponticum* is largely used), the stock itself often begins to grow and sends up suckers. These can be recognised by the difference

in leaf, and should be cut out as soon as recognised. If left to grow they will take charge and kill the scion. Gently scrape away some of the earth round them, and cut them where they join the plant. A clumsy tool like a spade will damage the roots of the scion, and I have found a hack-saw blade excellent for the purpose.

Propagation

This may be done in at least six ways:—

By seed

By slips

By root cuttings (where a plant is on its own roots and not budded or grafted)

By grafting

By division of the plant

By budding, and

By layering.

Of these, only the last is suitable for the average amateur. For the other methods knowledge, skill and suitable facilities are needed.

Layering is a simple operation and, if rightly carried out, is usually successful. Indeed many varieties, e.g. *R.* 'Fragrantissimum', seem to delight in layering themselves.

Do not think that by layering a whole branch you will get a larger and stronger plant. The best layer is a short end, 6 to 10 inches long and preferably one that has not just flowered.

Cut a 'tongue' in the lower side and insert in the cut something like a piece of dry stem of grass (not a green stem), or an oat seed, to keep the slit open. A little No. 2 hormone dusted into the slit is helpful, but not essential. Open out a shallow trench about 3 inches deep and 6 or 8 inches long, canoe-shaped so that the centre of the trench is deeper than the ends. Press the branch down so that the slit comes into the deeper centre part, and cover it with good soil or leaf mould. The layer may be fastened down with a No. 8 wire staple to keep it firm. I now use a rock when the trench is filled with soil. This keeps the layer down firmly and also acts as a mulch to keep the soil moist. In any case, see that the earth round the layer does not suffer from want of moisture.

In inserting the layer give the free end a sharp bend upwards. This creates a tension that blocks the sap flow, and induces rooting. This loose end may be kept cocked up by placing a brick against it.

If the layering is done as soon as the autumn rains come, you may be able to sever the layer from the parent plant and plant it out by mid-September. Usually you must wait another year.

Occasionally, when the branch has been stiff and difficult to bend down, a greenstick fracture has resulted, but nearly always the layer has rooted satisfactorily at the fracture.

Large leaved sorts are not so easy to layer and may take up to 3 years before they can be safely severed and lifted for planting out.

If one takes a rather low, spreading sort and layers it all round in half a dozen places, but does not sever the layers, one may get a wide spreading plant that grows strongly and expands outwards very rapidly because it is enabled to draw its nutriment from a number of widely spaced root systems.

Finally, if you buy a good *Rhododendron* — and they are not cheap — plant it in the way recommended, and tend it faithfully. If it looks miserable for some time, and finally dies it may not be your fault. It may be a 'miff', or the fault may be in the nursery.

As an example: last year I advised a lady friend to plant six hybrids, which she did. Among them was 'Cornubia', about 2½ feet tall. The other five did well but 'Cornubia' did not thrive and finally died. When we had the corpse up, to try and determine what was wrong, I saw at one glance why it had failed. It had been lifted in so niggardly a way that the root-ball was hardly 6 inches in diameter — quite inadequate to support such a big plant. An experienced grower would have promptly returned it.

So, if your first plant fails, do not be discouraged. Next year buy two more and try again.

LIST OF RECOMMENDED RHODODENDRONS CLASSIFIED UNDER COLOUR

The following cultivars, plus a few species that are not difficult to grow, have proved satisfactory to the writer in Auckland and environs provided, of course, the type of soil was suitable. It is assumed that, in this area, frost will be no problem.

Specially desirable cultivars are marked with an *

CULTIVARS—

White

- | | |
|-------------------------------------|--------------------------|
| *'Fragrantissimum' | **'Mrs A. T. de la Mare' |
| 'Glory of Bagshot' | 'Mrs P. D. Williams' |
| 'Halopeanum (syn. 'White Pearl') | *'Polar Bear' |
| **'Loderi' (any of the 20 odd forms | **'Loder's White' |
| 'Venus', 'Sir J. Hooker', | |
| 'Patience', etc.) | |

Pink

- | | |
|-------------------------|-------------------------|
| 'Alice' | **'Mrs Charles Pearson' |
| **'Betty Wormald' | 'Mrs Furnival' |
| *'Faggeter's Favourite' | 'Mrs G. W. Leak' |
| *'Gill's Gloriosa' | **'Mrs R. Gill' |
| 'Gill's Triumph' | 'Pink Pearl' |
| **'Glory of Penjerrick' | 'Prof. Hugo de Vries' |

Red

- | | |
|--------------------------|------------------------------|
| **'Barclayi' (all forms) | 'Ivery's Scarlet' |
| **'Britannia' | 'Mars' |
| *'Cornubia' | 'Romany Chai' |
| 'Earl of Athlone' | **'Romany Chal' |
| *'Elizabeth' | **'Scarlet King' (all forms) |
| *'Fusilee' | **'Tally Ho' (needs shade) |
| **'Gill's Crimson' | 'Unknown Warrior' |

Yellow

*'Carita'
'Goldsworth Yellow'

'Keay Slocock'
*Mrs W. C. Slocock'

Mauve to Purple

'Blue Peter' (demands full sun)
*'Countess of Athlone'
'Fastuosum flore pleno' (needs
shade or flowers sun burn)

'Purple Splendour' (demands full
sun)

The following small cultivars (2 feet) are suitable for rock gardens:

'Blue Diamond'
'Blue Tit'
'Cilpinense'

'Eldorado'
'Elizabeth' (in variety 'Jenny')

SPECIES—

The following are suitable for ordinary gardens:

arboreum (all forms)
decorum
delavayi
formosum

fortunei
griffithianum (with shade)
neriiflorum
williamsianum

AZALEAS—

For those who have not had experience of them the Ilam azaleas should be mentioned. These are deciduous or sometimes semi-deciduous and are like greatly improved azaleas of the *mollis* group. The colours are richer and more brilliant, the inflorescence larger and with more substance, the plant grows faster and is less demanding of water and site conditions, taking full sun quite happily.

Since the writer first discovered the Ilam hybrids about twelve years ago he has not planted any other forms of *A. mollis*. These outstanding azaleas were bred by the late Edgar Stead at 'Ilam', in Christchurch. He was also the raiser of the wonderful forms of *Rhododendron* 'Scarlet King'.

 PUBLICATION REVIEWED

FLOWERS FOR SHOWS — A Guide for Horticultural Shows and Floral Art Displays. Produced and Published by the Royal New Zealand Institute of Horticulture Inc. (15/- post free).

It is seventeen years since the Royal New Zealand Institute of Horticulture Inc. published *Official Judging Rules* in 1950. This has long been out of print and the need for a new Handbook on modern principles is being keenly felt. This has now been remedied most satisfactorily by the Handbook under review.

The Handbook is divided into two sections. The first is purely horticultural. The second concentrates on Floral Art.

It was a wise thought that caused a list of technical definitions to be included in each section, because a book of this nature must, on occasion, use technical terms peculiar to horticulture and floral art. The early sections of the Handbook are devoted to Flower Shows and their organisation. Much valuable advice, based on experience, is given on General Organisation. This naturally involves a set of Rules necessary for the smooth and efficient running of all Flower Shows. The preparation of the Schedule calls for specialised knowledge and the subtleties affecting the wording of classes are clarified.

These lead logically to the exhibitors and the judges. Many suggestions, useful for the exhibitor, are made. There is a preliminary introduction to the technique of Judging. Then follows a list of leading flowers, with particular emphasis on

those for which specialist societies have been formed. Each of these has been given a scale of points for judging, with detailed comments on meritorious and defective features for which a judge should watch.

Pointing of gardens entered for competition is dealt with in a clear and definite manner. The section comprising tropical as well as hardy fruit is set out in the same clear manner as the floral section. So also is the section dealing with vegetables.

In all 54 genera of ornamental flowers, 30 kinds of fruits, 46 kinds of vegetables are pointed for judging. This will prove to be most valuable.

The Floral Art section is right up to date and is based throughout on modern principles. Following a general introduction to the subject there is a scale of points for judging and a detailed interpretation dealing with design, colour, suitability to the occasion to mention only some of these very important items.

Much useful suggestion is made concerning schedules and rules and the place of a Floral Art section in a Flower Show. The final sections comprise a list of definitions that apply particularly to Floral Art. These will undoubtedly be most helpful to professionals as well as amateurs in this fascinating department of horticulture. The Index is adequate and helps for quick reference.

The producers of this Handbook have very conveniently bound it with wire hinges which makes it an easy matter to lie open and quite flat when being used for reference in the course of making a floral arrangement, or at a flower show.

DISTRICT COUNCIL REPORTS NORTH TARANAKI

AUGUST—

The Hawera Horticultural Society arrived in force at the Memorial Hall Lecture Room in New Plymouth armed with flowers, flowering shrubs, display stands, specimen vases and all the paraphernalia for a floral art display and proceeded to entertain and instruct us in no uncertain manner. What an evening it was! First Mr. Tom Reader of Hawera described the specimens on display, making some interesting point about each one. How would you take a cutting from *Araucaria heterophylla*? The one displayed, taken from the end of a side growth, refused to grow upwards but persisted in its sideways growth. *Rhododendron* buds may be eaten by many things but those shown had been chewed by wetas at night. Result — no blooms. To grow big bushes of *Thryptomene*, a valuable shrub for decorative purposes, members were advised to dig a hole twice as deep as normal, half-fill it with shingle, cover this with soil and plant. With no further attention, specimens have grown to five feet tall and five feet across.

Selago spuria, blooming so profusely with slightly fragrant flowers of a pale purple lilac that it should, perhaps, be treated as a perennial, almost flowers itself to death. *Magnolia campbellii*, a mass of blooms at this season in Taranaki, is, whenever possible, better viewed from above. *Aucuba* is an attractive shrub, especially the variegated type, and should be planted in pairs in partial shade to produce a crop of attractive red berries. With anecdote and hint dexterously mixed, Mr. Reader was always interesting.

Mr. Barry, a nurseryman from Hawera, had some interesting things to say with regard to camellias. He pointed out that those of the *sasanqua* group bloom from Autumn through to Spring when *japonica* and *reticulata* types take over and continue almost until the *sasanqua* group comes again, giving flowers for almost the whole year. A new variety mentioned by Mr. Barry, called 'Tiffany', a soft glowing pink, should become a popular favourite. He also stressed that a *Camellia* should not be condemned too hastily as many improve considerably as the bushes become established. *C.* 'Tomorrow' is one of these. How do camellias

get their names? Well, here is one way, quoted from the U.S.A. A lady-helper at a flower show wore a bloom from a seedling she had raised. Her friends, admiring it, persuaded her to enter it in the show. When it was declared Champion of Champions a reporter enquired what she intended naming it. She, thinking he asked when she would name it, answered, "Oh, Tomorrow" — and so was named that most striking semi-double red of immense size mentioned above. It is a fairly recent introduction from the U.S.A.

Rose hints were given by a panel headed by Mr. Burton. A wide field was covered, including spraying for insect pests and diseases; a comprehensive feeding programme; various types of mulches, including grass clippings thinly applied, black plastic, newspaper, sawdust and ensilage; while powdered cow manure was not only a good mulch but provided liquid manure when it rained. To conclude this section another nomenclature story: A group of New Zealand rosarians visiting a rose nursery in the U.S.A. were shown a new rose, a sport from 'Peace'. In typical Kiwi style one member exclaimed, "Flaming Peace!!" — and so another name was born.

To conclude the evening two floral artists, Mrs. Noel Yarrow and Mrs. Ven Young, obviously past masters in the art of demonstrating, kept members chuckling while they, from flowers and bits of this and that, created a hospital spray, a box of flowers, an arrangement for a buffet table, an imaginative interpretation of jealousy, an unorthodox illustration of motion using, among other things, lawn-mower wheels and a grey arrangement to demonstrate industry. This final one used spirals of machine lathe turnings.

And so ended a most exhilarating evening.

SEPTEMBER—

The North Taranaki District Council is particularly fortunate in having a comprehensive horticultural library endowed with sufficient funds to purchase new books as they come out. The library, donated by Mrs. Ann Burgess, and named the Ann Burgess Memorial Library, is now housed in a suitably inscribed modern cabinet in the meeting room. To encourage the use of the library, a number of books were put on display at the September meeting. This resulted in many more books being borrowed.

The special floral arrangement, prepared this month by Miss Waring, was a charming blending of dark red camellias with the green *Euphorbia wulfenii* backed by spraying ferns. Members were pleased to see this feature again in evidence at meetings.

A short talk, the second of a series by a horticultural apprentice, was given by Mr. Paul Ferguson of the Parks and Reserves Department, New Plymouth. His subject, the planting of banks, walls and slopes, had particular application to New Plymouth with its many hills, valleys, gently sloping sections and steep banks.

He suggested that clay banks should be planted green, i.e. before they have time to dry out, tall banks with small pockets filled with good soil and compost and smaller banks with enriched trenches either as the top or the bottom depending on the nature of the plant.

Among suitable plants suggested for planting on top of banks were *Rosmarinus lavandulaceus*, an attractive rosemary for trailing over banks or rock walls and covered with masses of lavender violet blooms. Other suitable plants for this position were *Grevillea fasciculata*; *G. alpina* 'Baueri'; *Hardenbergia violacea*; *Jasminum polyanthum*. From the bottom of the bank with some support various *Fassiflora* and honeysuckle could be grown. On concrete walls *Ficus pumila*, both 'Maxima' and 'Minima', and *Cotoneaster horizontalis* and *thymifolius* would be most attractive while a very useful plant from the Canary Islands, *Lotus berthelotii*, would grow well between concrete slabs. The very interesting *Fuchsia procumbens*, a New Zealand prostrate species, whose pale orange purple-tipped erect flowers are followed by shining coral red berries, could be effectively employed on shady banks.

On banks not so steep *Agapanthus*, both white and blue, and *Kniphofia* could be used to advantage. Altogether this was a very creditable effort from a young horticulturist.

The guest speaker for the evening, Mr. H. T. Beveridge, F.R.I.H.(N.Z.), of Hawera, showed slides of many interesting parks and gardens in North America.

OCTOBER—

Mr. Ian Howell, an apprentice at a local nursery, in a short talk described several kinds of lancewood. The botanical name, *Pseudopanax*, indicated that the lancewood was not a true panax. There are ten species native of New Zealand and South America. Given good top soil they are easily grown in either sun or even full shade. Propagated mainly by seed they give quite a variety of leaf forms. To keep the variety true, hardwood cuttings should be taken in winter or early spring. The commonly known *P. crassifolium* has a most interesting juvenile form, some of the lances being up to 27 inches in length and will grow to 6 or 8 feet before producing a rounded head on a single straight stem. Of the other forms *P. crassifolium* var. *trifoliatum*, *P. lessonii* var. *purpureum* which grows to about 10 feet and is much branched, and *P. lessonii* var. *adiantifolius*, resembling maidenhair fern foliage, are of most interest to the gardener.

In conclusion Mr. Howell suggested that while the lancewood grown in the garden in association with *Fatsia japonica* was most effective, small specimens grown in pots or tubs made really attractive indoor plants. This was an interesting talk well presented.

Of the specimens brought by members and described by Mr. Ian McDowall the most interesting were *Raphiolepis umbellata* and *R. delacourii* a white and a pink Indian hawthorn both bearing blue-black berries quite hardy and very resistant to salt spray. Another fine specimen was of *Fatsia japonica* with its large shiny leaves and deep purple berries. It is easily grown from seed.

Among the other shrubs flowering at this time were *Fremontia californica* with its waxy yellow flowers, *Viburnum tomentosum*, *Cornus nuttallii*, perhaps the most interesting were *Raphiolepis umbellata* and *R. delacourii* a white and a grown against a wall, and the small shrub *Hypocalymma robusta* with its double soft pink, peach-like flowers and bronzy foliage being a florist's delight.

An extremely interesting and well-presented talk by Dr. George Mason on the flora of Mount Egmont concluded a most interesting evening.

At Labour Weekend thirty-six enthusiasts in a bus and one car made a trip to Southern Hawke's Bay. From Dannevirke as a centre many gardens were visited. Those of Mrs. Russell Cook and Mr. & Mrs. T. N. White at Ashley Clinton and Mr. & Mrs. Michael Hudson at 'Gwavas', Tikokino, being woodland gardens, were something quite new to us. Among the smaller gardens visited those of Mr. & Mrs. Wood in Dannevirke and Mr. & Mrs. Ross near Woodville were outstanding. The assistance given by Mrs. Palmer of Dannevirke, Mrs. Cumming of Woodville and Mr. Tom White of Ashley Downs in conducting us around the gardens was much appreciated.

SOUTH TARANAKI

Circuit meetings for the new season began again on 31/8/66 when about fifty members and friends gathered in the Kaponga Memorial Hall. There a surprisingly varied display of blooms and foliage showed what can be grown in this district, even under this year's severe winter conditions when heavy frosts have taken their toll. A display table of proteas, ericas, *Pieris*, daphnes, polyanthus, miniature *Narcissi*, *Iris reticulata* and many other specimens were named and commented on by Mr. T. H. Reader, of Hawera. A second display table was presented by Mr. B. Hollard, F.R.I.H., of Kaponga, who brought blossoms of rhododendrons, camellias, koromiko, ericas, senecios and numerous specimens of foliage — all grown in his own lovely garden on the slopes

of the mountain. These he commented on, generously sharing with his listeners his wide knowledge of plant cultivation. The work of the floral artist added its own beauty to the evening when the ladies of the district staged a bench of about a score of lovely floral arrangements.

First speaker of the evening was Mr. H. Marchant of Cardiff, an authority with years of practical experience in his subject "Rhododendrons". Illustrating many of his points with specimens from his own and Mr. Hollard's gardens, the speaker gave an informative address on the cultivation of rhododendrons. A second speaker was Mr. P. Johnson of New Plymouth who charmed his audience with a description, illustrated by coloured slides, of an Australian holiday. This was a camping trip in their own 'bus which, over a period of 7 months, took him and his wife a journey of 17,000 miles over the highways and byways of Australia, round the coast and into the hinterland. It included such excitements as buffalo and crocodile shooting; exploring caves decorated with early aboriginal paintings; driving over almost trackless wastes where the only growth was spinnifex and rain had not fallen for years and the charm of coming again to areas where water could be found and the desert blossomed into a veritable carpet of wild flowers.

September saw a circuit meeting held in Patea, when the evening was devoted to various aspects of gardening. The first speaker was Mr. J. H. Barnard of Hawera, his subject being the staging of *Narcissi*. Demonstrating his points with specimens of different types, Mr. Barnard gave valuable hints to growers of *Narcissi* aspiring to show honours. He was followed by Mrs. N. V. Anderson of Mangatoki, who gave hints on the hybridising of *Narcissi* and their growth from seed to flowering. The cultivation of polyanthus was discussed by Mr. H. T. Beveridge of Hawera, and numerous plants, grown in Wanganui, were later offered at the sales table. The growing of vegetables, with advice on soil preparation, cultivation and spraying — a subject of interest to all present — was discussed by Mr. T. H. Reader of Hawera and Mr. E. Fairweather of Patea. Details of his programme of rose spraying were given by Mr. T. A. Snowdon of Inaha — and all speakers answered questions on their various subjects. A bench display from members' gardens was named and commented on by Mr. Syme, with special reference to camellias and advice on the use of sawdust as a garden mulch.

October saw the Annual Meeting held in Hawera when, after transacting the business inseparable from such an occasion, about fifty members were able to enjoy a bench display of excellent specimens from members' gardens. These were commented upon by Mr. B. Hollard of Kaponga and Mr. Rod Syme of Hawera. The guest speaker for the evening, Mr. V. C. Davies of New Plymouth, commented on the variety and special quality of the blooms displayed, claiming that Mr. Hollard's garden, almost on the slopes of Mt. Egmont, produced some of the best rhododendrons in New Zealand. Beautiful colour slides of a 5½-month trip overseas from which he and Mrs. Davies had recently returned were shown by Mr. V. C. Davies. The trip had been partly planned as a pilgrimage to the old battlefields which were no longer able to be easily found — in place of the mud and devastation of Paschendale and the Somme were smiling fields with crops ready for harvesting and dotted with groups of trees. Villages once flattened had been re-built in the same style; the Vimy Memorial stood proudly on its hill; from the Menin Gate each day bells called a city to a daily silence of remembrance; Messines Ridge and other cemeteries were beautifully tended; and at Ypres the heap of rubble to which the Cloth Hall had been reduced was once again a great cathedral. Many famous gardens in Great Britain were visited, including Kew, Edinburgh, Blenheim, and the homeward journey took the travellers through many of the beautiful gardens of America.

In all of his travels, Mr. Davies took particular notice of trees, bringing back colour transparencies of the beautiful, the ancient, the unusual and the historic.

WAIKATO

With the increasing population and expansion of the towns in the Waikato there is obviously a most encouraging and widespread interest in horticulture. So many new sections both in town and country are being made into gardens and it is rare to see one that is not at least kept tidy. The majority reflect the horticultural interests of their owners, even if in some cases there is a regrettably noticeable lack of knowledge of the principles of garden design! Perhaps the commonest mistake is to plant too many permanent trees and shrubs without taking into consideration the size they are likely to grow into within a few years. To endeavour to assist in avoiding this problem it is the practice at meetings of the Waikato District Council during the identification session to briefly discuss requirements and characters of plants brought for either naming or exhibition to other members. This is proving of value to everyone and is reflected in the increasing large numbers of plants and flowers that members bring along to meetings.

It is very obvious where most members' interests lie, for ornamentals always form the greater part of plants brought in, and fruit and vegetables are not so well represented. It is therefore all the more encouraging that some members who are commercial orchardists bring along fruit which not only provides identification of varieties old and new but also shows that high quality fruit is grown in the Waikato.

During the past few years a greater interest and expansion in commercial fruit, vegetable and flower production has taken place in this district. This, of course, is to be expected because of the population increase, but it is showing that the Waikato is a most suitable area for growing many crops. Small fruits, such as strawberries, are being grown on an increasing scale, and raspberries and boysenberries, crops hitherto not grown here commercially for many years, are producing well.

There is quite a considerable amount of interest locally in blueberries, but so far no commercial plantings have been made. At the Rukuhia Soil Research Station a trial area is giving good crops each year, and almost invariably those who taste the fruit like it very much. Blueberries are of the genus *Vaccinium* and most of the commercial varieties are forms of or hybrids between *V. corymbosum* and other species, often *V. pennsylvanicum*. They require moist peaty or sandy acid soils, but these are plentiful in the Waikato in the many drained peat swamp areas, and it is surprising that this potentially valuable crop is not grown commercially as yet. In North America it is a most popular fruit as those who have eaten blueberry pie will testify.

When the great range of plants that could be grown in this district is considered then it is realised how comparatively small is the actual number we do grow. It is therefore all the more encouraging to see unusual plants appearing at meetings, and this is most certainly stimulating interest in many plants previously thought to be difficult to grow. Currently rock gardens are popular and many beautiful plants, even true alpine, are thriving. In this field and with bulbous plants there is very great scope for the introduction of plants not as yet readily available.

At a recent meeting of the District Council several films on horticulture were shown; these proved popular and with the greater number of high standard films now available this is a good medium for disseminating horticultural information. The National Film Unit Library has many very good films on horticulture, and embassies and commercial firms can often loan suitable ones.

WHANGAREI

MAINLY MAGNOLIAS

This was the title of a talk given at the July meeting by Mr. D. R. Purser, F.R.I.H.(N.Z.), which concerned those magnolias, both species and hybrids, grown in New Zealand, together with some information on the newer camellias now becoming so popular in Northland.

In outlining the history of the *Magnolia*, Mr. Purser said they had been cultivated in China for two or three thousand years, but not so much for their beauty as for the purpose of cutting them down and distilling an essence used as a love potion. However, China is the home of most of those known and grown here, though of these the most important group are the hybrids raised by Europeans. From North Burma comes the biggest of all magnolias, *campbellii*, which, in its native land, reaches 150 ft. There are numbers in cultivation round the world, and though not as tall as those in the wild, there is one of 60 ft or more in the garden of the late Mr. Percy Thompson of Stratford. There are also a number round about Whangarei, a notable one being in the garden of Mrs. McKinnel. Though English gardening books say that this species takes 20 years to flower, this does not apply in our climate, so much warmer than that of England, and more approximate to that of their native land. From 6 to 8 years is usual here, and the pink flowers up to 10 inches across are spectacular on the bare branches.

Magnolia mollicomata, considered to be a sub-species of *campbellii*, is also deciduous, and smaller in all its parts but blooming earlier in half the time, with lovely pink flowers up to 6 inches across. It has been crossed with *campbellii* to give us 'Charles Raffill', also with large pink flowers coming early. The Yulan, *Magnolia denudata*, is counted by some to be the best. It is not so commonly grown, but there is a very good one in Cambridge. It is one parent of 'X Veitchii', raised in 1907 by Veitch, using *denudata* pollen on *campbellii*. He obtained 5 plants, one of which was 'X Veitchii'. It is early flowering, large, of lovely form and colour and also a good doer. Considering their beauty and the very large range of species and hybrids — 80 species and a host of hybrids, comparatively few are grown in New Zealand — perhaps 16 species and as many hybrids, though we have our own native member of the *Magnolia* family in *Drimys axillaris*, now known as *Pseudowintera*.

The dearth of magnolias in our gardens was recently remarked upon in an article by J. Edmonston in the *New Zealand Camellia Bulletin*. He writes: "I have always believed that for general garden planting the cherries (both Japanese garden types and species), magnolias, maples, rhododendrons, azaleas and camellias are of primary importance. There was a time when many corporation garden curators had Kew training, but the parks of even our large cities do not show that any attention has been devoted to the *Magnolia*."

A Danish authority on trees has this to say about *Magnolia soulangeana*: "To many garden owners this flowering Spring tree seems to be the most beautiful thing that one can possess, and not without reason." He says, also: "The delightful, large, tulip-like flowers should be seen against a dark, quiet background of evergreen bushes — not against a brick wall."

Although most magnolias are Asian in origin, there are some species from temperate parts of North America. Of these, the one we grow here is *M. grandiflora*, with evergreen, shining leaves, felted beneath, and large, creamy-white, fragrant flowers. It is fairly commonly grown throughout New Zealand, and there is a specimen in Laurie Hall Park. The Chinese and Japanese magnolias grow on different types of soil — the Chinese on the sweeter, chalky soil, and the Japanese on acid soil. The only Japanese species to tolerate limey soil is *M. kobus*, and its hybrid with *stellata* — *M. 'X Loeberni'*, will also grow on limey soil. *M. sieboldii*, formerly known as *parviflora*, is also a Japanese species and is summer-flowering. *Magnolia soulangeana*, itself a hybrid between *liliflora* and *denudata*, embraces many forms popular with gardeners. Most enjoy a good mulch of leaf mould and good compost, resent root disturbance, require little manure, and can be grown to perfection in Whangarei, as we do not get severe frosts. They may be improved with pruning, but as the wood is brittle, cannot easily be layered. Cuttings and seed are the usual ways of propagation. Seed must be carefully watched as blackbirds take it. Blooms of several magnolias were displayed, as well as those of another close relation of the genus, *Michelia*

doltsopa, a fairly newcomer to this country. This small tree revels in a moist situation and produces its large, creamy, scented flowers from July onwards.

Mr. Purser ended his talk by showing colour slides of magnolias in bloom, with a running commentary on their growth habits and requirements. Slides of some of the new camellias followed. These two plants associate well in the garden and, being distinct in form, complement each other and give a rich display of colour in winter and early spring. Indeed, no one listening to this comprehensive description of magnolias and seeing the magnificent blooms, both in picture and on display, could fail to be impressed by their beauty and their garden merit. Our thanks are due to Mr. Purser and his able assistant, Mr. John Silich.

DISPLAY TABLE

July may perhaps be considered the most unpleasant month of the year in Northland, and some people might say that the flowers are scarce, or that they themselves haven't any. That this is far from the truth was ably demonstrated by a look at our July Table.

Pride of place must go, of course, to the magnolias and camellias, but flowering cherries, plums and proteas, as well as hebes and *Moschosma*, added interest and colour.

Magnolia campbellii must surely rank as one of the most spectacular of its genus, with *stellata* as the most floriferous. Their close relative, the fragrant *Michelia doltsopa*, is handsome in form as well as in foliage, and a very good doer in our climate. *Protea barbiger*, from Mr. Purser's garden, is a striking plant which should be grown more frequently. Though some folk say the blooms of these and also poinsettias are not good keepers, Mrs. Sanson showed flowers of both which, properly treated after picking, kept for three weeks. Also shown by Mrs. Sanson was a clear pink tea tree from the far North, near Spirits Bay. This plant was collected in the wild and successfully transplanted to her garden.

Moschosma reparia (as defined by Mr. W. Sykes of Lincoln and formerly of Kew) is a tall herbaceous perennial from South Africa, with flowering stems quite 6 ft high and almost as wide, studded with bright lilac flowers. It is a splendid cut flower, lasting at least a fortnight in the vase. It stands rather wet conditions and grows readily from cuttings in spring. It is unfortunate that a much inferior plant, smaller in all its parts and of a wishy-washy mauve, is catalogued under the same name.

If a full list of camellias shown were to be given it might read like a nurseryman's catalogue, but a number were of great interest. 'Betty Sheffield Supreme', generally regarded as being in the very top flight, showed her quality in a pot-grown plant from Mrs. Wright. Mr. Blumhardt brought a new and very attractive plant of 'Felice Harris', as well as an interesting range of *saluenensis* seedlings and hybrids. Others of interest were 'Ubane', 'Shirobotan', 'Elegans', 'Isabella', 'Donation', 'Laurie Bray' and that really good old timer 'C. M. Wilson', which can hold its own with most of the more recent 'sports' and hybrids. As a spectacular garden plant, 'Donation' must be a favourite and should be grown by everyone who likes camellias.

THE VEGETABLE GARDEN

The weather for early August has taken a decided turn for the better, and with the odd daffodil, etc., making a welcome appearance, Spring must be just around the corner.

With so much rain in recent weeks, though, many soils will still be unworkable and the vegetable garden will be mainly on the late side this year.

If early potatoes have not yet been planted, it shouldn't be too long before it's possible to get them in. An old-established rule about the spacing between the rows is at least three feet, roughly the length of a spade. Unfortunately many gardeners don't adhere strictly to this advice, and it could be admitted that when potatoes first appear through the soil, three feet spacing does seem over-generous. But it is not, really, when you consider that they need to be moulded up at least three times, with the third one the most important of all. With less than three feet there is just not enough soil to do this, and it is so essential to cover the almost matured tubers as they become exposed with the beating-down action of rain.

TREES FOR SHELTER AND FOR ORNAMENT

This was the title of a talk given at our August meeting by Mr. J. S. Say of the Department of Agriculture, Auckland.

Mr. Say opened his talk by observing that shelter, whether on farms or for gardens, need not consist of endless belts of pines or poplars, but could be of more interesting and varied material and of greater ornamental value.

New Zealand was, on the whole, a windy place and shelter was desirable on that account. However, that was only part of the story, and shelter was necessary to provide the kind of micro-climate of light and shade where choice shrubs such as rhododendrons, camellias and the like could be grown. In modern houses, where areas of glass are often extensive, welcome shade as well as privacy could be secured by careful planting. Sundecks should be screened, planted, and small sections overlooked from others could still retain privacy with suitably planned planting. Ugly views could be similarly blocked out. Noise and dust from streets and traffic could also be considerably lessened by screen planting.

In many new subdivisions for housing, much of the top soil is removed and what is left is extremely difficult from the gardener's point of view. This is a problem in which the Institute of Horticulture should help by advising what plants to grow, and how to arrange them to blend with the landscape.

Builders and architects were now more aware of the problems involved but it was often the case that all money was spent on the actual house or factory, and little or none left for beautifying the grounds. Even ugly buildings could be improved by proper framing and background planting, but unless we knew what we wished to achieve, wrong planting could prejudice people against any form of shelter or screening.

Mr. Say mentioned a booklet on Farm Shelter which he thought would prove very helpful for those interested. Mixing of shapes and colours and textures was of greater interest than a uniform type. Mixed conifers were always to be preferred to a row of one kind. Contrasts in colours and shapes were easily obtained by the use of such trees as *Acmena*, golden poplar, oleander, *Chamaecyparis obtusa* 'Crispii', silver birch, *Caesalpineae*, *Pittosporum*, *Agonis*, and for wettish places, the swamp cypress *Taxodium distichum*. All these trees were easily available in Northland and did well here. For shorter-growing screens or to complete the foreground of the taller plantings, many of our native trees were excellent. These could include the many coloured flaxes, *Phormium* spp., hebes in a wide range of forms and flower colours, kowhai, *Corokia*, and the wide range in colour and shape of dwarf conifers.

A fine selection of colour slides added point and interest to a lecture which went to show that the days of monotonous hedge and shelter belt are indeed nearing their end, and no garden need lack character, colour or privacy when so much quality material is available, together with so many capable gardeners ready and willing to help the amateur.

DISPLAY TABLE

Our August Table really showed that Spring was well under way in Northland. Rhododendrons, camellias and magnolias were all there, with plum, almond and cherry in singles, doubles, and many shades of pink and white. *Edgeworthia papyrifera*, the so-called yellow daphne (to which it is related), is a Chinese deciduous shrub that appears to do well around Whangarei. It is grown in Japan for papermaking, though we look on it simply as an ornamental. Its clusters of yellow flowers are best looked at from below. *Rhododendron* 'Cornubia' must surely be one of the best red-flowered hybrids for our climate. It does well with some summer shade from overhead, likes fairly good soil and some water in summer. No beginner, or even expert with rhododendrons could go wrong with it. *Prunus* 'X Pollardii' is a hybrid almond which flowers very early, and though it sets abundant fruit, is not as good as 'Monovale', which has the better flavour and can be eaten as well as used in cooking. Other *Prunus* shown were *blireana*, *moseri*, *wrightii* and 'Thundercloud', all from Mrs. Wright's garden.

1967 ANNUAL DOMINION CONFERENCE

of the

Royal New Zealand Institute of Horticulture (Inc.)

FORTY-FOURTH ANNUAL MEETING AND CONFERENCE OF DELEGATES

NOTICE IS HEREBY GIVEN that the forty-fourth Annual Meeting and Conference of Delegates of the Royal New Zealand Institute of Horticulture (Inc.), will be held in Nelson on March 2nd, 1967, commencing at 9.00 a.m.

The 1967 Banks Lecture will be delivered at 8.00 p.m. on 2nd March by Mr. R. J. Ballinger, B.Agr.Sc., of Blenheim, entitled
"The New Look in Horticulture."

Members of the Institute and delegates from affiliated organisations are specially invited to attend the Dominion Conference and the Banks Lecture. Other activities are being planned for the benefit of visitors.

It is recommended that those attending the Conference make early hotel reservations, through the Town Clerk, Nelson.

K. J. LEMMON,
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