

VOL. VII.

SEPTEMBER, 1967.

No. IV.

NEW ZEALAND
PLANTS AND GARDENS



THE JOURNAL OF THE
ROYAL NEW ZEALAND
INSTITUTE OF
HORTICULTURE

(INCORPORATED)

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The attention of readers is directed to the "IN MEMORIAM" notice of
the late Editor, Mr. G. A. R. PHILLIPS.

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NEW ZEALAND PLANTS AND GARDENS

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

Volume VII.

SEPT. 1967.

No. 4

In Memoriam

Mr. G. A. R. PHILLIPS

It is with deep regret that we announce the death of Mr G. A. R. Phillips in Wellington on August 18, 1967, and extend to his widow and family the sincere sympathies of all members of this Institute.

Mr Phillips was appointed Editor of New Zealand Plants and Gardens on September 1, 1956, and has continued in this capacity right up to the time of his death, in spite of failing health over the past months. Mr Phillips brought a scholarly knowledge and understanding of horticulture into his duties as Editor. The literary qualities and authoritative worth of the Journal reached a very high standard under his editorship bringing acclaim and expressions of appreciation from its readers in New Zealand and overseas. Mr Phillips received the distinction of Associate of Honour of the Royal New Zealand Institute of Horticulture in 1966 (vide New Zealand Plants and Gardens Volume VI, Nos VI and VII). We mourn his passing and acknowledge with gratitude his great contribution to horticulture.

THE EDITOR

Having to take over the Editorial Chair temporarily in the present sad circumstances your Acting Editor feels that we should examine the functions of an editor. Your Acting Editor has acted both as a contributor and an editor so gone are the days when he used to regard the editor as an ogre sitting on a comfortable chair with a blue pencil deleting the really meaningful part of his contributions.

Now the Editor's function is essentially regulatory and he acts as a buffer between the publishers and the contributors. Just as a game is much more orderly if it is controlled by a referee or an umpire or a show is so much better if judges are provided so an Editor is necessary to a good publication. An umpire is not essential to a game nor is a judge indispensable for a show but we certainly feel that they are desirable for the full enjoyment of the players or exhibitors. A paper, a magazine or other periodical could be run without an Editor but imagine the chaos and confusion behind the lines as the contributors decided between them what should be left out to match the space available. The publication date would seldom be met.

Nevertheless the Editor is subsidiary to the contributor as the umpire and judge are subsidiary. The quality of a publication depends on the contributors and here the Editor may play a most important part by obtaining suitable contributors and by guiding them to the best of his ability. "New Zealand Plants and Gardens" has been well served by its contributors in the past and is filling a need in New Zealand horticultural literature.

Nevertheless we are constantly on the lookout for new contributors for there is a continual erosion of their numbers through many causes and actually our contributors in the past have been more noteworthy for the quantity and quality of their contributions rather than their numbers. Our title indicates that we are not primarily a botanical journal but a horticultural one though we do encourage the use of botanical names and correct nomenclature. Further we do publish certain botanical articles with popular appeal. However in the main we look for horticultural contributors of some standing in their particular field of horticulture and with the facility of putting pen to paper. This for better or worse is the age of specialism and if you have the desire and ability to write suitable articles on your particular field of study you may be sure we will be only too pleased to consider your writings for publication in this journal.

JOHN GOVER,
Acting Editor.

MY GARDEN

DORIS BENSTEAD F.R.I.H. (N.Z.)

Over a period of 42 years I have had only one garden, quarter of an acre in extent.

The disadvantages of a flat section was partially overcome by making two rockeries, one in sun, the other in shade, and by dividing and enclosing portions of the garden.

As the water level here in the Hutt Valley sometimes remains high for quite long periods it was found necessary to use raised beds to grow a number of plants successfully.

Crazy paths were used at first but as these proved too difficult to keep tidy concrete paths replaced them. To hide the hard edge of the concrete wherever possible a great variety of perennial matting plants is grown.

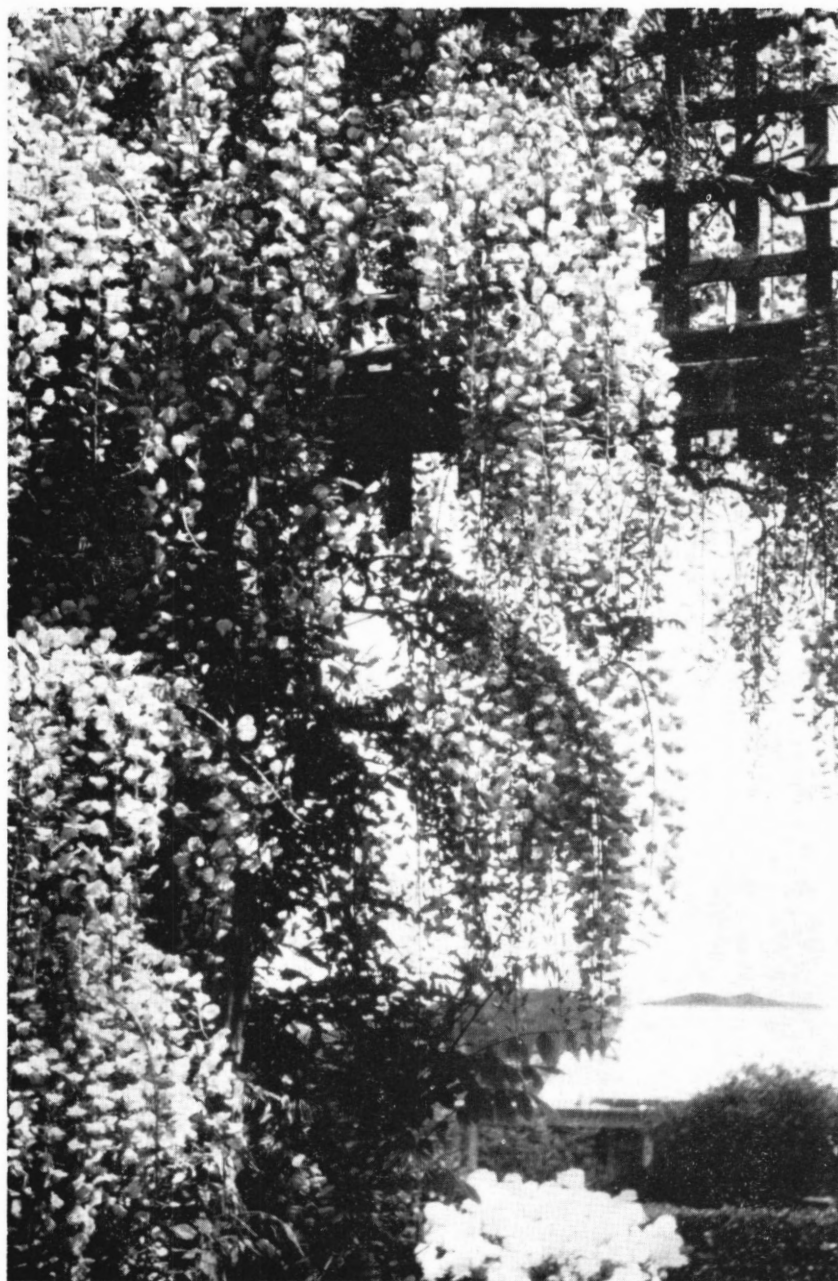
As the garden in front of the house has very little shelter reasonably wind hardy plants are grown there. On the one side of the path to the house are shrubs, perennials and annuals in pink, lavender and blue with a variety of grey foliage plants. It is edged with *Lithospermum diffusum* 'Grace Ward' which I prefer to *L.d.* 'Heavenly Blue,' finding it brighter in colour, larger in flower and naturally more compact, though I would not like to discard the latter. On the other side of the path the flower bed contains only lime-loving plants.

To the north is a 10ft hedge which provides shade for Azaleas (many of them Ilam hybrids), *Crinodendron lanceolatum*, *Pernettya mucronata*, *Cavendishia acuminata*, *Rhododendrons* 'Elizabeth,' *nuttalli* and some species of *Skimmia*, *Fuchsia*, and *Camellias* (including 'Capt. Rawes' which last year had over 100 blooms).

To the south and east a closely boarded fence topped by trees and climbers provides shelter from the southerly winds and on warm days makes the garden behind the house a veritable hot house. Here grow many Australian, South African and other warmth loving plants. Most of the Australians are winter flowering, some of these being *Hypocalymma robustum* (like a rich pink myrtle), *Kunzea baxteri*, *Agonis juniperina*, *Templetonia retusa*, *Chorizema cordatum*, *Brachysema latifolium* and *Thryptomene calycina*, *T. saxicola* 'Rosea' and *T. baeckeacea*, the latter having bright deep pink flowers very closely set.

Among the South Africans are *Orphium frutescens*, *Adenandra fragrans*, *Dais cotinifolia*, *Phygelius aequalis*, *Phyllica pubescens* and *P. gnidioides*, *Vitex Agnus-castus*, and some proteas.

In this part of the garden are warmth loving bulbs:—*Bletilla striata*, *Chlidanthus fragrans*, *Hermadactylus tuberosus*, *Bravoia geminiflora*, *Brodiaea coccinea*, *Romulea sabulosa*, *Moraea villosa* hybrids, *Urecoolina peruviana*, four different *Zephyranthes*, four different colours of *Cyrtanthus*, *Ornithogalums* and *Polianthes tuberosa*. After many



(Photograph — Doris Benstead)

View through Lattice gate at Mrs. Benstead's home.

attempts to flower the tuberose successfully here I found that if the bulbs were lifted in late June or early July, even if the foliage is still green, and hung up to ripen in a dry, airy place, all the large bulbs and some of the smaller will flower.

Some years ago I bought a few gladioli bulbs, hybrids of *Gladiolus psittacinus* and the summer flowering hybrids. These have increased till there are now several dozens. Planted in February in raised beds they produced large flowers in mid-winter with good strong stems. If picked when the first flower is opening the cold weather does not affect them.

A shrubbery partially shaded by the house next door contains many ground cover plants including Tiarella, Tolmiea, Tellima, Hostas, Epimediums, *Heucherella tiarelloides*, Mertensia, Dodecatheon, Astrantia, Cimicifunga and various Helleborus including the species.

Here also are *Anemone nemarosa*, *A. blanda* and *A. appenina*, *Podyphyllum emodi*, many Primulas including two *Primula vialli*, Galanthus and Scillas. In the deeply shaded part under large trees are *Ruscus aculeatus*, Sarcococas, *Fatsia japonica*, Aucubas, and several Mahonias. An unsuccessful attempt was made here to establish *Cardiocrinum giganteum*.

In a raised peat bed edged with large rocks and divided down the middle by a row of espalier Camellias grow happily *Gentiana sino-ornata*, *Rhodohypoxis baueri*, *Tecophilaea cyanocrocus*, two *Fritillaria imperialis*, Roscoejas, *Andromeda polifolia* and *Daphne retusa* and *D. giraldii*, the latter having white flowers followed by large scarlet berries. *Pleione formosana*, a lovely picture when in flower is well established here. This bed is edged with Parma violets and various Erythroniums most of which have been grown from seed.

Not long after I started gardening I decided to concentrate on plants which would give colour in winter. *Rhododendron* 'Christmas Cheer' was among my first purchases. After all this time it is only 6 feet tall, compact in growth and flowers profusely in the middle of winter with its frilly pink blooms standing up well to the wintry conditions. In winter too, *Reinwardtia trigynum* and *Hypericum leschenaultii* growing in a warm spot make a bright splash of colour over a long period.

I grow well over 20 different Ericas and find that it is possible to have some in flower all the year round. The hardier Ericas are really accommodating plants, spreading and smothering weeds and requiring little or no attention. As the South Africans become woody, even though clipped after flowering I renew them with cuttings which root easily in the garden frame.

This four-light frame, half of which is automatically heated, is a wonderful asset, and many of the shrubs in the garden have been



Neomarica coerulea (Photograph — Doris Benstead)



Rhodendron 'Christmas Cheer' (Photograph — Doris Benstead)

struck here. In it I have raised seed from England and America—*Michauxia campanuloides* (a 4 feet perennial) with white flowers which when fully opened resemble a reflexed lily, *Dictamnus albus*, *Adonis vernalis*, *Asclepias tuberosa*, *Daphne mezereum* (now a 3-foot shrub) *Anaphalis tripcinervis* and various other shrubs, annuals and bulbs including *Galtonia princeps* 'Emerald Bells' which should flower next season. One plant of *Campanula vidalii* grown from seed given to me flowered this summer, producing six stems two-and-a-half feet tall, hung with pale pink bells. The R.H.S. Dictionary lists the flowers as white, but these were definitely pink.

Some of the plants which I value are *Convolvulus mauritanicus sabitus*, much more compact in growth than the one usually seen and just one sheet of colour when in flower from late spring to autumn; *Thalictrum* 'Hewitt's Double' which lasts in flower over a long period, as does *Aster frikatii*; *Aster trinervis* which flowers well after the other asters have finished with bright purple flowers and a broad rough serrated leaf 2½ inches long; *Euphorbia characias*, like *E. Wulfeni*, but with a maroon eye; *Heterocentron roseum* which growing under *Kowhai macrophylla* flowers in mid winter; and the white and red pulsatillas.

Three fairly recent acquisitions are *Magnolia stellata rubra* which unlike *M.s. rosea* stays a really good pink when the flowers are fully open, *Stewartia pseudo-camellia* and *Loropetalum chinense*.

Two *Clematis indivisa* are climbing up a *Kowhai* tree, *Clematis armandii* covers one side of a shed; *Clematis montana rubens* is on the verandah; and wherever possible the large flowered hybrids are on trees and other supports.

Schizophragma hydrangeoides grows in the shade of the house, *Schizandra coccinea*, *Phaseolus caracalla*, *Laqageria rosea*, *Billardiera longiflora*, *Trachelospermum jasminoides*, *Hardenbergia comptoniana* and *Sollya fusiformis (heterophylla)* are on the garage and board fences.

There have been many failures. *Gentiana acaulis* will not flower for me in any part of the garden; *Leschenaultia biloba* which grows successfully in a neighbouring garden fails to grow for me and so on.

I feel I cannot conclude this article without mentioning the wonderful help and encouragement given me by my husband whose real interests lay in his three rose beds with well over 100 roses many of which he had budded himself; his espalier fruit trees—five apples and a pear, all with one or two other varieties grafted on to them; and his electric soil steriliser which has proved a very worthwhile help to us both.

Now, on my own and without sufficient suitable help, I have decided to replace some of the time consuming plants where necessary, with shrubs especially Camellias in the hope that I will be able to keep the garden in some semblance of order.



(Photograph — R. M. Mole)

Leptospermum scoparium 'Wairere' growing over a rock wall at the Otari Native Museum, Wellington.

LEPTOSPERMUM SCOPARIUM 'WAIRERE'

R.M. MOLE F.R.I.H. (N.Z.)

On page 321 in the "Flora of New Zealand" Vol. 1, 1961 by H. H. Allan, reference is made to the complex of prostrate forms of *Leptospermum scoparium* found growing wild in the North Auckland Botanical District. It has been stated that some prostrate forms appear to be habitat-modifications, whilst others are genetically determined. The cultivar named above belongs to the latter category.

In 1944 seed was collected from an isolated specimen of *L. scoparium* found growing on a pumice flat on the northern side of the entrance to Parengarenga Harbour, North Auckland. Mr Norman Potts of Opotiki discovered this plant which he described as being about 10 feet across and no more than 18 inches tall. Plants raised from seed at Opotiki have retained their prostrate habit.

Vegetative characters closely resemble those of the species. Branchlets and young leaves are silky-hairy; mature leaves nearly glabrous, especially above. Leaves subsessile about 4 to 12 mm x 1 to 4 mm., narrowly ovate-lanceolate to lanceolate, coriaceous, pungent, erect to patent or strongly recurved. Flowers mostly solitary, axillary, subsessile, up to 20 mm. diameter, white, flushed pink, especially towards centre and base. Sepals small, dull red, margins white.

This cultivar is long lived and seems adaptable to varying soil conditions and aspects. Best results are obtained when planted in full sun in a well drained sandy loam. Some flowers are present at most times of the year, with the main flush developing in Spring and early summer. The plant has great ability for withstanding strong winds, and I have found it hardy in Wellington where up to 10 degrees of frost have been recorded.

To ensure uniformity of stock vegetative propagation should be adopted using half-ripe cuttings with a heel. Inserted in river sand cuttings root readily and subsequent growth even in the cooler climates of Wellington has exceeded 12 inches per annum during the plant's early years.

This cultivar apart from its aesthetic appeal forms a very useful subject for large rock gardens, planted atop of retaining walls, or for coverage of unsightly banks.

Mr Potts who introduced this plant into cultivation is well known for his work and knowledge in connection with New Zealand native plants. He is responsible for the very fine display to be seen of them at the Hukutaia Domain, Opotiki.

In view of the successive layers of branches, each produced in a more or less horizontal plane, together with branchlets which become pendulous, the Maori name "Wairere" (meaning waterfall) has been chosen for this cultivar.

VARIEGATED PLANTS

DOUGLAS ELLIOTT

Walking round my garden this morning I began to wonder how many variegated plants I had. So I made a list and found I had well over a dozen different species. They ranged from trees to rock plants.

You might wonder why I grow so many. Obviously because I like them; but why? Firstly, I like them for themselves; I like the coloured leaves and their interesting markings. Secondly, I like the way they lighten up the garden which would be dull if all leaves were plain green. Thirdly, several of the variegated plants are evergreen and so are attractive in the winter when flowers are scarce. It is then that they provide good material for flower arrangements.

Perhaps you do not know what I mean by variegation. The best definition I can find is in "The Standard Cyclopedia of Horticulture" by L. H. Bailey: "This term is usually applied to a class of variations, especially in leaf-colouration, in which the leaves become striped, banded, spotted, and blotched with yellow, white, red, and various other colours in connection with the normal green of other portions of the leaves."

What causes it? None of my books give a clear answer, apparently because no one knows the exact cause.

The authorities agree that the light colouring is caused by a lack of the green of chlorophyl. Bailey says, "Cells in the variegated areas are found, as a rule, to contain the same chlorophyl bodies as the ordinary green cells of the plant. However, in the variegated parts the green colour is not developed. In the case of chlorosis (pale green or yellow instead of the normal green in the leaves) due to lack of iron or yellowing due to the lack of light, a leaf will quickly develop its normal colour if given the proper conditions. This is not the case, however, in variegated leaves."

Variegation has puzzled scientists for a long time. Bailey says, "Darwin and many of the earlier investigators believed that these variations were started in the plant by unfavourable nutritive conditions, and much has been written of the subject as to whether or not variegations should be considered as diseased conditions."

These beliefs are well illustrated in camellias where leaves will be variegated because of lack of iron or because of virus. The affected plants can become completely normal through good feeding whereas those that are truly variegated remain unchanged.

But you run a risk if you treat your variegated plants too well. Though you will not change the colour of the leaves you may force the plant to produce normal green shoots that will take most of the nourishment and starve the variegated parts.

So it seems that although variegation is not a disease, it is a disturbed condition. You might call it a horticultural hiccup.



(Photograph — D. Elliott)

Coprosma williamsi variegata



(Photograph — D. Elliott)

Coprosma repens Var 'variegata' (left) and 'Picturata' (right).



(Photograph — D. Elliott)

Heimerliodendron brunonianum variegatum

Variation shows in many different ways. The most common is an area of white, cream, or yellow on the edges of the leaf. Sometimes the light area is in the middle of the leaf. The common taupata *Coprosma repens*, shows both kinds of variegation; C.r. 'Variegata' has yellow edges and C.r. 'Picturata' has a blotch of yellow surrounded by green. You'll find both kinds in variegated forms of *Euonymus japonicus*.

On several plants the leaves have white or yellow edges and two tones of green — a very attractive arrangement. A good example is the Variegated form of parapara (*Heimerliodendron brunonionum*.)

In variegated flax the bands of cream vary in thickness from leaf to leaf but they all run lengthwise. In a few plants they run crosswise. Examples are the popular house plant *Sansevieria*, an ornamental grass, *Miscanthus sinensis*, which is commonly called Zebra grass because of its markings, and *Billbergia zebrina*.

Other kinds of variegation include the deep brown band in zonal pelargoniums, the shiny metallic markings in Aluminium plant, *Pilea cadierei*, and yellow Archangel, *Lamium galeobdolon*, the pretty mottlings on cyclamen, and the exotic colouring on rex begonias, coleus, and caladiums.

I've said that I grow over a dozen varieties of variegated plants. Perhaps you'd like to hear about some of them.

I think my favourite is a koromiko, *Hebe andersonii* 'variegata.' The edges of the leaves are white. The plant is round and about 4 feet high and is beautiful all the year round. Most of the time it bears pretty purplish-blue flowers. We prune it in the spring. It grows easily from cuttings.

The golden privet *Ligustrum ovalifolium aureum*, is too common for some people's taste, but it is extremely hardy, grows in any kind of soil, and puts on a colourful display from spring to autumn. In the winter some of its leaves fall if you cut it back really hard to 12 or 18 inches from the ground it will send up extremely vigorous shoots covered with outsized leaves.

A variety of *Phebalium billardieri* called 'Illumination' is very like the privet but doesn't drop its leaves in the autumn. It first appeared in a batch of cuttings in the nursery of Mr R. Barry, Hawera. Mr Barry carefully cultivated it for about 15 years until he had plants that didn't produce any green shoots. It is a very attractive shrub.

There are two variegated forms of lacebark (*Hoheria populnea*). the leaves of 'Aurea Variegata' have creamy-yellow edges; those of 'Alba Variegata' have white edges which make it a much more showy plant. Both, like the green form, grow quickly to a height of 10 to 12 feet unless you prune them regularly. They flower in the autumn.



(Photograph — D. Elliott)

Liriodendrum tulipifera aureo-marginatum



(Photograph — D. Elliott)

Hoheria populnea albo-variegata

I haven't space for the variegated forms of the common flax, *Phormium tenax*; so I grow *P. colensoi tricolor* which I think is a more attractive plant because it is more graceful. The leaves are well marked with cream stripes and the edges are red. The pretty yellow flowers are on stems about four feet high. the leaves are about $2\frac{1}{2}$ feet long.

A very popular shrub grown for its flowers as well as its variegated leaves is *Diervilla florida* 'Variegata.' It is sometimes called *Weigela* and misleadingly Apple Blossom. It is quick and graceful and has a mass of pretty soft pink flowers in the spring. The edges of the leaves are creamy yellow. If you leave the stems in water after the flowers fall they will root.

The variegated euonymus, *E. japonicus* 'Variegata,' is one of the best of this type of plant. It is comparatively slow growing so that it needs little pruning; it is a narrow column in its youth and middle age and you can keep it that shape by pruning it. The edges of the leaves are a definite yellow.

Hydrangea macrophylla 'Tricolor' is not new although it is being boosted as a novelty by one of the big American nurseries. The three colours are cream, pale green, and deep green. This is one of the "Lacecaps," so called because the flowerhead is composed of fertile flowers surrounded by a ring of sterile flowers. The sterile flowers are a pretty pale pink.

I have already mentioned *Lamium galeobdolon* 'Variegatum.' It is a variety of an English wildflower and we are using it as ground-cover. Though we grow it mainly for its beautifully marked leaves, we also like the soft yellow flowers that come in September. They are about three-quarters of an inch long and are hooded. As they are arranged right round the stem they look like a little yellow band rotunda. The plant grows extremely easily from cuttings and also roots where it touches the soil; so I suspect it could become a weed.

We grow two variegated thymes, varieties of the pleasantly lemon-scented *Thymus citriodorus*. The leaves of one have golden edges, of the other white. They are attractive edging plants. The golden variety tends to revert to green.

We have several variegated forms of Plantain Lily (*Hosta*). They make handsome bold clumps in shady parts of the garden. and are a popular source of material for flower arrangements. Most have cream markings but one has golden, and unlike the others, it loses its colour and turns green when the leaves mature.

A very pretty plant for the rockery, for edging, and for ground cover is *Ajuga reptans* 'Variegata.' In shady places it shows up much better than the green and bronze forms; and the light-coloured leaves make a good background for the deep blue flowers.

Here are four other plants I like very much though I haven't got round to including them in my collection.

The variegated Tulip Tree, *Liriodendron tulipifera* 'Aureo Marginatum'; is one of the most handsome of all variegated trees. The big oddly-shaped trees are boldly marked with yellow and two tones of green.

Acer negundo 'Variegatum' has compound leaves with white edges. The over-all effect is silvery and for this reason this maple is good amongst green trees.

The remaining two are natives. *Coprosma williamsii* 'Variegata' is a small shrub 3 to 4 feet high with a semi-pendulous habit. The leaves are boldly mottled with white and green. *Heimerliodendron brunonianum* 'Variegatum' has big leaves shaped like karaka leaves. They too are boldly marked with white and two tones of green. Both plants thrive in semi-shade and are also good house plants.

As I mentioned earlier if you feed variegated plant too well they will produce normal green shoots. Some varieties do this even without good feeding. Examples are Golden Privet and *Acer negundo* 'Variegatum.' In fact there is always a tendency for variegated plants to revert to normal. So you must watch them and cut out green shoots the moment you find them.

1968 ANNUAL DOMINION CONFERENCE

of the

ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE (INC.)

FORTY-FIFTH ANNUAL MEETING & CONFERENCE OF DELEGATES

NOTICE is hereby given that the forty-fifth Annual Meeting and Conference of Delegates of the Royal New Zealand Institute of Horticulture (Inc.) will be held in Wellington on March 7th, 1968, commencing at 9.00 a.m.

It is expected the Banks Lecture will be delivered by an eminent horticulturist from overseas.

Members of the Institute and delegates from affiliated organisations are especially invited to attend the Dominion Conference and the Banks Lecture.

K. J. LEMMON,
Dominion Secretary.

NOTES FROM THE CHRISTCHURCH BOTANICAL GARDENS

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

At the time of writing these notes we are just finishing the driest winter to be experienced in Christchurch for 70 years. In the June issue of the Journal it was mentioned that rainfall for the previous three months was considerably below average. Since the beginning of June less than two inches of rain have fallen and throughout this period artificial watering has been necessary in various parts of the Botanic Gardens. To date this year, less than half of our annual rainfall has fallen. With eight months of the year almost gone, and with some of the driest months of the year still to come, it would appear that we are in for a dry time.

One advantage of having such dry weather has been the fact that practically no time has been lost through wet weather. A heavy outside work programme has been considerably aided by the dry weather and much more has been accomplished than in a more normal winter. In spite of earlier predictions by many people of an early spring, near average temperatures have ensured that few plants are earlier than usual. In fact some have been several weeks late in coming into flower.

In the last issue of the Journal two new display houses, under construction in the Botanic Gardens, were briefly mentioned. These

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houses have now been completed and opened to the public, and with six houses we now have what must be the most comprehensive range of display houses in the country. The range now includes Cuninghams House (tropical plants), Townend House (flowering displays), Fern House, Garrick House (cacti and succulents), No 5 House (carnivorous plants), and No 6 House (alpine plants).

All houses except No 6 are heated by a sectional boiler and hot water pipes. Due to the heating being designed according to principles prevailing at the time of construction, Cuninghams House has never been adequately heated and during some winters many plants have lost condition. With various additions to the glasshouse range the necessity of improving the heating system became obvious. Therefore last year the first steps were taken towards improving the heating; over 800 feet of two-inch diameter piping being installed in Cuninghams House in order to maintain the house at the necessary temperatures. The existing boiler had an output of 486,000 B.T.U.'S and this has had a further six sections added to it, to give an output of more than 1,100,000 B.T.U.s. There is ample heat in hand to cope with the extra cold winter and also to allow for the erection of another display house should one be forthcoming. The boiler is fired by a Nu-way oil burner which burns a medium grade oil at 220 seconds.

The whole boiler system is controlled by Satchwell compensating controls which operate two three-way mixing valves on the boiler flow lines. Individual house temperatures are controlled manually by gate valves. This gives a very good control of minimum temperatures and ensures the most economical operation of the boiler.

The first display house to be erected in the Botanic Gardens was the old Townend House which was bequeathed in 1914 by a Mrs Annie Quayle Townend. This was a large timber-frame conservatory of ornate design and was re-erected in the Gardens on being shifted from the donor's garden. This house was used for flowering displays and was a popular feature for many years. About 1954 it was declared unsafe and in 1956 was replaced by the present structure; also known as Townend House.

The Cuninghams House was opened in 1923 as the result of the bequest of a Mr G. A. C. Cuninghams, a great admirer of the Gardens. It is a magnificent and lofty structure which in addition to the ground floor contains a gallery going around the whole inside of the house. It is used to house the collection of tropical plants and in its large centre bed, full-sized specimens of palms and other tropical trees are grown. Cuninghams House and the present Townend House are joined by a connecting passageway to that it is possible to visit both without going outside.

The fern house was constructed in 1955 as the result of two bequests. It is used to house a collection of New Zealand ferns.

Built in conjunction with the new Townend House is Garrick House. This was built to accommodate a large collection of cacti and succulents

which had been held for many years without any suitable display accomodations. In this house use was made of modern display techniques; a portion of the collection being displayed in a natural manner against a very fine diorama. The diorama was painted by the Department's signwriter and artist, Mr G. M. Gee. Special attention was paid to the accuray of dimension, colour, and true representation. The comments of most people indicate that it is a most successful display. On the bench a carefully arranged collection of highly succulent mesambry-anthemums (*Lithops*, *Pleiospilos*, etc.) hidden amongst stones, never fails to excite interest.

Connecting on to Garrick House is No 5 display house, which will eventually be entirely occupied by carnivorous plants. Just opened recently it contains *Nepenthes*, bromeliads, and orchids. As yet only about eleven different *Nepenthes* are on display, and other genera of carnivorous plants are not yet ready for display.

Display house No 6 as explained in the June Issue of this Journal is devoted to alpine plants. Although it has only been open for a few weeks it has been quite colourful and interesting, and promises to be very popular with visitors to the gardens.

MEMORIAL TO THE LATE MR M. J. BARNETT

M.B.E., A.H.R.H.S.

In memory of the late Mr M. J. Barnett, the Canterbury Horticultural Society has set up a trust fund to finance the holding of a memorial lecture every second year in Christchurch to be known as the M. J. Barnett Memorial Lecture.

Mr Barnett gave a lifetime of service to horticulture in New Zealand, and served as president of the Royal New Zealand Institute of Horticulture. He was Senior Examiner in the Oral and Practical examinations of the Institute for many years, and devoted endless energy to furthering horticulture education and fostering the interests of horticultural students and enthusiasts of all ages. He was considered to be the Dean of Horticulture in New Zealand by those who knew him well.

Interest accruing from the fund being set up will be used to defray in part expenses in bringing outside speakers to Christchurch, and in the presentation of a scroll to the speaker on the occasion of each address.

Anyone interested in making a donation to this fund is kindly asked to forward this to:—

M. J. Barnett Memorial Fund,
C/o Secretary,
Canterbury Horticultural Society,
P.O. Box 369,
Christchurch.

BOOK REVIEW
FLOWERS FOR ARRANGEMENT

By SHEILA MacQUEEN (W. R. & L. Collingridge Limited, London)

As well as being one of the world's foremost flower arrangers, Sheila Macqueen has a great love of gardening and grows many unusual and decorative plants, as will be seen in this lovely book. Opposite the finished arrangements are fine black and white photographs showing some of the actual plants she has used in each group. This adds tremendous value to the book as the text covers a wide range of information concerning the choice of suitable plants, and where and how to grow them.

Sheila Macqueen is an artist in the true sense of the world, and as well, she has a delightful sense of humour which helps her large audiences all over the world to get close to her and to learn in a wonderfully friendly atmosphere many of the finer points of flower arranging. The care for and presentation of blooms and foliage is dear to her heart also, as are the lovely and varied range of containers she uses so cleverly.

Sheila Macqueen worked with and was inspired by the late Constance Spry for many years. Together, they were responsible for the immense flower arrangements that were so admired in Westminster Abbey. At the wedding of Her Majesty, Queen Elizabeth II, and, later, at her coronation, Sheila Macqueen's artistry was well recognised; and her services are always in great demand for special occasions. With her easy charming manner, she is always most popular as a lecturer, or as a radio and television personality. She gathers friends in all walks of life wherever she travels—at home or abroad; and her books "Flowers for Arrangement," (1) "Calendar of Flowers," and (2) "Flower Decoration in Churches" will inspire many flower lovers and artists.

- (1) CALENDAR OF FLOWERS (NATIONAL MAGAZINE CO.,)
CO.,)
- (2) FLOWER DECORATION IN CHURCHES (FABER &
FABER)

1966 EXAMINATIONS

H. D. GORDON, Chairman.

The results of this year's examinations conducted by the Royal New Zealand Institute of Horticulture in Horticulture, Fruit Culture, Apiculture, Vegetable Culture and School Gardening, both written and practical, have been released. Junior Stage Oral and Practical examinations were conducted in Palmerston North and Intermediate and Diploma Stages in Christchurch.

A total of 78 candidates presented themselves for examination and the percentage of passes obtained was 77%.

The Junior Memorial Prize for the candidate gaining the highest marks in the Oral and Practical Stage I examination was awarded to C. A. Oliver of New Plymouth; the David Tannock Memorial Prize for the highest marks in the Oral and Practical examination Stage III was awarded to C. I.

McDowell of New Plymouth; the J. A. Campbell Memorial Prize for the candidate completing the Intermediate examination and gaining the highest average marks was awarded to R. C. Gill of Christchurch.

The coveted Cockayne Memorial Medal for the candidate completing the Diploma in Horticulture and gaining the highest average marks in the final stage of the examination was awarded to R. J. Nanson of Hamilton.

The subjects in which passes have been gained by candidates are indicated by code numbers as follows:

Bookkeeping (2), horticultural botany (3), plant protection Stage I (4), oral and practical Stage I (5), principles of botanical classification (6), horticulture Stage I (7), special subject (8), oral and practical Stage II (9), horticulture Stage II (10), plant protection Stage II (11), oral and practical Stage III (12), thesis (13), horticultural economics (14), fruit culture Stage I (15), fruit culture Stage II (16), plant and plant breeding (17), beekeeping (18).

AUCKLAND

Peters A. C. 4, 5
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McDowell, C. I. 10, 11, 12
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Scherp, L. A. 11, 13

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Lokum, L. 9
Short, J. G. 10
Bennett, R. D. 5

ROSE RUST

B. R. YOUNG

(Plant Diseases Division, D.S.I.R., Auckland)

Rust disease of roses in New Zealand is caused by the fungus *Phragmidium mucronatum* (Fr.) Schlecht. This fungus, which attacks only *Rosa* spp., has been introduced into the country with its hosts and has been present for many years for Kirk reported its presence on cultivated roses and sweetbriar (*R. rubiginosa*) in 1904.

As a fungous disease of cultivated roses, rust ranks next in importance to mildew (*Sphaerotheca pannosa*) and black spot (*Diplocarpon rosae*). Marcussen (1962) reports that it is generally not as widespread as mildew and black spot, but may be more harmful to infected plants as premature defoliation often occurs. At one time it was thought that *Phragmidium mucronatum* might be employed for biological control of sweetbriar. Subsequent experiments showed that only under environmental conditions exceptionally favourable to the fungus did it cause death of the host.

LIFE HISTORY

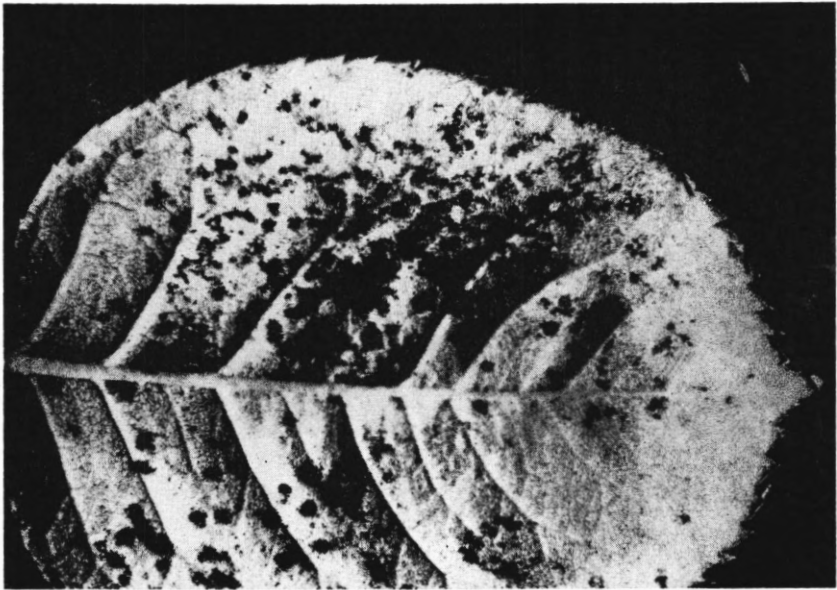
During the course of its life-cycle, rose rust produced no less than five different types of spores (*pycniospores*, *caemospores*, *uredospores*, *teleutospores* and *basidiospores*), all of which are formed in succession on the same host. However, of these five types, only the *caemospores*, *uredospores* and *teleutospores* are produced in sufficient numbers to be seen by the unaided eye.

The disease is generally first noticed during the summer when masses of bright orange *caemospores* are produced in crowded pustules or sori on the underside of the leaves, on stems, petioles and fruits. As the summer progresses, small, round, scattered pustules up to half a millimetre in diameter containing orange or reddish-orange *uredospores* appear on the underside of the leaves. With the approach of cooler weather, these orange pustules are gradually replaced by black pustules of similar size and shape containing black *teleutospores*.

Each type of spore fulfils a definite function in the life-cycle of the fungus. As far as dissemination of the disease is concerned, the two most important are the *caemospores* and *uredospores*. During the growing season the disease is spread mainly by these two types of spores and under favourable weather conditions, a new generation of *uredospores* may be produced every 10 - 14 days. The black, thick-walled, 5 - 9 - celled *teleutospores* produced on the leaves in late summer and autumn are the means by which the fungus overwinters. *Teleutospores* are shed with the dead leaves and in spring, germinate to produce *basidiospores* which recommence the life-cycle of the rust.

CONTROL

The rose grower has at his disposal two methods by which he may combat this disease, viz. (i) by growing resistant varieties, and (ii) by use of chemicals.



(Photograph — Canterbury Rose Society)

The Black over-wintering stage of Rose Rust.

(i) Rust, together with mildew, was introduced into the fore-runners of our present day roses some 150 years ago when the first breeders produced the Bourbon roses. By continued inbreeding of *Rosa chinensis* with *R. borbonica*, the later crosses became so susceptible to rust that the disease killed them. When the first of the hybrid teas were evolved they were fairly resistant to both rust and mildew, but by continued crossing with *R. foetida*, black spot was introduced which proved to be more serious than either rust or mildew.

Attempts were then made to eliminate all three diseases and this was first accomplished by Poulsen who, by inbreeding *R. multiflora*, eliminated black spot and rust, and suppressed mildew in most varieties. Kordes, by inbreeding *R. moschata*, produced disease-free floribundas and later, by including sweetbriar, derived a second resistant strain. A third resistant strain consisting of the group of hybrids collectively known as *R. kordesii* arose from the accidental crossing of *R. rugosa* and *R. wichuraiana*. The development and use of these strains by some modern breeders is leading to healthier and more resistant plants.

Resistance to rust tends to vary from district to district and it is advisable to enquire locally as to the varieties most suited to the area. Some varieties which have shown resistance in Auckland are listed below.

Hybrid Teas: 'Eden Rose,' 'Montezuma,' 'Super Star,' 'My Choice,' 'Peace,' 'Piccadilly,' 'Prima Ballerina,' 'Rose Gaujard' and 'Uncle Walter';
 Floribundas: 'Pink Parfait,' 'Queen Elizabeth,' 'Scarlet Queen Elizabeth,'

'Yellow Queen Elizabeth,' 'Dearest,' 'Evelyn Fison,' 'Iceberg,' 'Masquerade,' and 'Orangeade.'

(ii) During the growing season, spraying with either zineb ($1\frac{1}{2}$ oz 65% wettable powder per 4 gals water) or a zineb and colloidal sulphur mixture (zineb as above plus $\frac{3}{4}$ oz colloidal sulphur as 75% wettable powder per 4 gallons water) should give adequate control.

As the rust may overwinter on infected leaves, fallen leaves and diseased wood should be collected and burnt at time of pruning. It is also advisable to spray the plants with an oil-bordeaux mixture ($6\frac{1}{2}$ oz copper sulphate, $5\frac{1}{4}$ oz hydrated lime per 4 gals water plus 1 pint summer oil) at this time.

ACKNOWLEDGEMENTS

The assistance of Dr. R. F. R. McNabb is gratefully acknowledged.

REFERENCES

MARCUSSEN, K. H. 1962: *Roses in the Home Garden*. N.Z. Dept. Agric. Bull. No. 359, 20 pp.



(Photograph — Nancy Steen)

"Bronze leaved N.Z. cabbage tree, *Cordyline banksii purpurea*, at Hidcote manor."

COLOUR GROUPING

NANCY STEEN (Auckland) A.H.R.I.H. (N.Z.)

Long after a garden has been visited, pictures come to the mind of some exciting spot; and more often than not, it is an unusual colour grouping that has proved arresting and been retained by the eye. This colouring may be soft and subtle, or bold and handsome; or it may have one harshly discordant note that adds emphasis to the composition by creating an harmonious discord. We found one such spot at Hidcote Manor in Gloucestershire — the first garden in England to be administered by the National Trust. Here, an oblong lily pool was bordered with bushes of the crimson-purple flowered *Rugosa* hybrid, 'Roseaie de l'Hay,' and startling and unusual spurge, greenish-yellow in colour, being its companion plant. Across from the pool, and trained along a wall, was the clear yellow rose, 'Apeles Mestres,' a beauty bred by Pedro Dot of Spain, and popular in European gardens.

Another exciting glimpse of the same garden showed twin borders planted in rich shades of red and purple. *Rosa moyessi*, 'Scarlet Fire,' and 'Rosemary Rose' stood out against the purple tones of *Acer platanoides* 'Crimson King,' *Berberis thunbergii* 'Atropurpurea' and *Prunus cerasifera pissardii* 'Nigra.' Suitable bulbs, and low and tall perennials effectively carpeted the areas between the tall shrubs and roses. In the same garden, clipped pillars of English yew were spaced at intervals just back from a bricked pathway, bordered on either side with the single red *Paeonia peregrina* 'Sunbeam,' a Balkan plant. Behind these were large bushes of old French roses, while over all, between and behind the yews, sprayed out large bushes of *Rosa highdownensis*, the arching branches of this fine shrub rose covered with clear cherry-red flowers and dark ferny foliage. These contrasted pleasantly with the dark green, upright yews, and the low-growing paeonies. These three unusual colour schemes were created by the late Major Lawrence Johnston—a fine American gardener who settled in England.

A softer colour-grouping, but also extremely effective, was admired at Sissinghurst Castle in Kent. Against one of the tall brick walls surrounding an inner courtyard, very old and soft-toned bricks these, was trained the lovely *Wichuriana* hybrid, 'Albertine,' the flowers of salmon-pink toning perfectly with the wall. Below the rose were frothing-bushes of *Indigofera gerardiana*, which produces graceful sprays of rosy-mauve, pea-shaped flowers, this colour clash proving arresting and effective. Further along the same wall was a magnificent specimen of our *Gaya lyalli* the cherry-like, creamy-white flowers and large green leaves looking well in this position. Beneath this New Zealand tree and enclosed between a two-feet high, clipped, box-hedge and another brick wall running at right angles to the first one was a dazzling stand of hybrid alstroemerias in tones of pink, salmon and flame, the whole making a never to be forgotten picture.

Far removed in tone from these plant associations was a white border seen at Glyndebourne in Kent. This was placed effectively in front of a dark green closely clipped hedge. In high summer when we saw it, tall

white delphiniums and larkspurs were interspersed with bold groups of shaggy white shasta daisies, and frothing bushes of *Gypsophila*; the whole bordered with suitable grey and white edging plants. Early on a summer evening, and in such a setting, the picture created was serene and restful.

Across the Irish Sea, near Strangford Loch, is one of the fine gardens of Northern Ireland, Mount Stewart, at one time the seat of the Londonderry family. This garden has now been handed over to the National Trust, so will be permanently preserved and maintained. Here two unusual colour groups were a sheer delight. An almost full circle of grey stone steps led up to the famous Shamrock Garden. To one side was a very effective planting of shrubs, all yellow-flowered, with greyish foliage of varying shapes. At the base our own *Senecio greyii* was in full bloom. Behind was a yellow-flowered *Eccremocarpus*, and behind it again and swaying over all like a greenish-grey fringe, was a large bush of the Mt. Etna Broom, *Genista aethnensis*. All these were backed by tremendous specimens of blue-grey cedars and dark pines. On the other side of the steps, the Californian Poppy, *Romneya coulteri* had suckered freely, the greyish leaves and large, crinkled, white flowers with masses of yellow stamens adding to the unusual toned picture. In the same garden, a small group of only three plants combined in an arresting manner. The woody sub-shrub, *Senecio cineraria* 'Ramparts' with its deeply-lobed, white-felted leaves was interplanted with groups of salmon-pink, hybrid alstroemerias and an exceptional form of *Statice latifolia*. At the time we were visiting Mount Stewart this richly deep blue-purple flowering form of a sub-shrubby *Statice* had not been named; but there was no doubt that these three plants in tones of silver-white, salmon-pink and deep purple made an eye-catching picture. Later we saw a potted plant of this same *Statice* at the Saville Gardens in Windsor Great Park but there we were told that it was rare and still unnamed. However, in a later issue of the Journal of the Royal Horticultural Society we noted that this excellent plant had been called *Statice latifolia* 'Blue Cloud.'

An effective variety of the popular Copper Beech—*Fagus sylvatica* 'Tricolor' — and a large growing shrub, *Rosa macrantha*, were combined in a pleasing manner at the Villa Taranto in Northern Italy — the rose with its large single flowers of a creamy pink being high-lighted against the beech. The pink edged leaves of this large, spreading tree made a pleasant foil for the rose, which was smothered with bloom when we saw it. This famous modern garden has been left to the Italian nation by the late Major McEachern, and will, in future, be used as a training school for young horticulturists from all over the world. Another glimpse beyond the beech showed a white, two storied, green-shuttered building with the climbing rose 'Blaze' trained up its walls. Nearby were graceful bushes of the tall double *Philadelphus* 'Virginalae.' The white green and red in this scheme were gay and fresh in the colour, more than any rarity of plant material, making for real enjoyment.

Cleverly used, foliage alone can create lasting beauty. In a large Yorkshire garden, Newby Hall, we admired such a planting. In front of

taller shrubs were good specimens of *Continus americanus* 'Folius purpureus' and 'Pendula'—the purple and silvery leaves combining well. Beneath them, artemisias, salvias and *Stachys lanata* were effective, more so because of the yellow roses trained along a nearby pergola. These in turn were backed by yellow-leaved shrubs.

In Lyegrove, near Badminton in Gloucestershire, colours were cleverly grouped. Blue delphiniums against a background of pink climbing roses—the foreground covering being in tones of grey. These colours were all well massed, and very effective they looked on the far side of a sunken garden. Further over, another border featured red and white flowered plants of all types, while still another made a picture in purple, blue and silver.

We have, in our own small garden, endeavoured more successfully in some seasons than others—to create pictures by the use of certain colour groupings. White, grey and green in one area; yellow and white in another; pink, red and brown in still another; with blue, purple, silver and lemon tones further over. As a matter of interest, except for key plants which are permanent, we vary the planting from year to year; but each border is set off by its own area of lawn—this helping to create a restful effect. As many of our roses are older types—often summer-flowering only—we interplant with fuchsias to tone or other small shrubs, large-flowered *Clematis* helping the background effect. These climbers, if spent blooms are removed, produce colour in the garden for many months, and harmonise very happily with fuchsias and roses. Very few individual plants have been mentioned as each gardener's likes and dislikes must necessarily come into any scheme. No hard and fast rules can be laid down. Even plants we sometimes despise, in the right setting can be spectacular. We had never thought very highly of the common valerian before we went overseas; but grouped in its three shades of white pink and red, and growing out near the top of a 12 feet wall, it made an unforgettable picture on the tiny island, Isobella, in Lake Maggiore. Planted at the base of this wall, and trained up it, were white, pink and red forms of the 'Dorothy Perkins' rose, now very much out of fashion, though these common plants were beautiful in such a setting. Russell Page in *The Education of a Gardener* called valerian a first rate garden plant, in the right setting. Lovely effects can be achieved easily and inexpensively with a little forethought, not necessarily with such a plant as valerian as it can rampage badly in this climate but there are many other easy and worthwhile plants. Observe plantings in other gardens, and find out how certain pleasing or spectacular effects have been achieved. In that way much can be learnt and useful information stored up for future use.

A QUIET HAVEN IN A BUSY CITY

RENEE OTTAWAY

Have you visited one of Auckland's newest small parks — Eden Garden? Situated on the lower eastern slopes of Mt. Eden, at the top of Omana Avenue, Epsom, this picturesque park was a few years ago an

overgrown, disused quarry, part of the property owned by Sir Frank Mappin. He recognised its possibilities and offered it to the Auckland Horticultural Society. For a time some of the Council's members worked here at weekends. But when for various reasons, they were unable to continue, the task was taken over, less than three years ago, by Mr H. Jack Clark of New Lynn, a well-known gardening enthusiast.

The property, some five acres in extent, is now held by the Eden Garden Society Inc. on a 20-year lease with right of renewal, from the Crown. Now, as the result of voluntary labour, this wasteland has been completely transformed into a serene sanctuary, using the natural volcanic rock and native bush as a background for a large variety of trees and shrubs, but with special emphasis on Magnolias, Rhododendrons, Cherries, Conifers and Hibiscus which flaunt their large red, pink, yellow and orange blooms.

It is claimed that the collection of Camellias is the finest in Australasia and it is intended to hold Camellia Week at the end of August. This will be an Outdoor Show and on the final three nights the gardens will be floodlit. It is hoped that in future this park will be used for many other suitable outdoor functions.

The scarred quarry sides are gradually being covered by creepers and a man-made waterfall feeds a small stream which flows under a stone bridge to water-lily pools. Curving rock-edged paths wind round the hillside in a most attractive example of land-scaping. Around one corner a statue of Venus stands coyly against an ivy-coloured bank.

A unique feature is the Pioneer Grove where anyone may endow a tree in memory of a relative or friend, whose name is recorded on an individual name-plate. I noticed the names of many eminent people and old-established Auckland families.

When I visited the Garden, Mr Clark was hard at work with only one helper. A bulldozer was shifting unwanted trees and gravel, to clear a site for an afternoon tea kiosk. Mr Clark said that though the Society had received several small grants they were insufficient to cover the amount of work still to be done. They would therefore welcome any financial assistance, or time which interested people may be able to spare, to help in the further development of this worthwhile project. He said that several of his most loyal assistants have been lady gardeners. One of these, of course, is Mrs Clark who shares her husband's enthusiasm and has spent many hours helping to create what they both hope will prove to be an additional tourist attraction for Auckland.

As one looks around it is almost incredible that so much could have been achieved in so short a time.

Although the Newmarket Flyover with its rushing traffic is only about a half mile distant, the City seems very remote in this peaceful dell where pigeons coo in the branches of ancient trees and graceful tree-ferns give shade to rock plants.

If you plan to visit this Garden, it is open to the public between the hours of 9 a.m. to 4.30 p.m. daily, and between 1.00 a.m. and 4.30 on Sundays.

CANTERBURY HOLDS ONE-DAY CONFERENCE

JOHN OLIVER, Christchurch

If one of the primary functions of the Institute is to stimulate interest among amateur gardeners in the raising of standards through education then the one day conferences which have become an annual event under the auspices of the Canterbury District Council must surely be regarded as one of the most effective mediums. This year's conference on "Improving Garden Production," held on August 22nd although attended by rather disappointing numbers of the public was one of the most instructive yet held and, thanks to the calibre of the speakers, entertaining.

Picture a gathering of enthusiastic amateurs and horticultural students listening avidly for a whole day to a succession of New Zealand's top horticultural scientists speaking on their special fields with particular application to the problems of the keen home gardener.

Dr. Morrison, Professor of Horticultural science, Lincoln College, in his "Overture" shocked some of his listeners with his revelation that in order to keep pace with the present rate of population growth the world must bring into cultivation one million acres of new land per week. He was able to point out however, that thanks to higher horticultural education and improved practices productivity is rapidly increasing. By way of illustration he mentioned that New Zealand production of commercial glasshouse tomatoes has quadrupled since 1940 and that apple production per acre in the same period has doubled. How many of us realised that our lettuces have roots capable of penetrating to a depth of three feet and that our pumpkin plants actually renew about seven miles of feeding roots per day.

These and other startling facts and figures were only a prelude to the substance of the conference which followed. Mr D. Ricard of the Winchmore Research Station illustrated some of his most telling points by citing a 12 by 20 lawn which, he explained, uses up to a ton of water on a hot day or about one hundred tons in a normal growing season. He told exactly why wide fluctuations in soil moisture content are so undesirable and how they should be prevented. Mr R. A. Crowder, Lincoln College lecturer speaking on the structure of the soil surprised some of his listeners by advocating the more general use of grasses rather than legumes for the improvement of soil and alluded to the growing tendency to replace deep cultivation with the use of an organic profile.

Following a down to earth talk on "soil-less" composting by Mr L. G. Parks, Professor Walker, speaking on Soil Fertility emphasised the importance of understanding the history of our soils as an aid to their correct management. He paid particular attention to the effect on fertility of the properties of the original rock, the local climate and natural vegetation and stressed the value of using copious quantities of bulky organic materials which have grown by assimilation of

some of the now deficient elements. He referred to overliming as a common cause of trace element deficiencies.

Dr Harrison speaking on insect pests and Mr W. Brandenburg on fungus diseases discussed the nature and life cycles of these obstacles to profitable gardening in a way that will enable their audience to identify the enemy and select the appropriate remedies or preventive measures for combating them. The materials to use and how to use them were discussed by Mr Marcussen.

In the evening a Symposium on the "Value of the Home Garden in the Community" brought a meeting of agile minds to bear on this tantalising subject. The panel consisted of Mr Keith Tyler on the Regional Planning Authority, Mr W. D. Turner, an orchardist, Mr L. W. McCaskill, National Parks Board, Professor Morrison, Lincoln College, and Mr J. Watling, Past President of the Canterbury Horticultural Society, with Mr J. O. Taylor in the chair.

HORTICULTURAL PLANTS ON NIUE ISLAND

W. R. SYKES, B.Sc. (Hons.), N.D.H. (Christchurch)

A short while ago I made a survey of the plant life on the island of Niue. Niue is situated in the tropical South Pacific about 300 miles south of the Samoan group but it lies in the middle of the trade wind belt and thus does not experience very high temperatures. The south-easterly wind exerts a moderating influence for much of the year. It is only in the first three months of the year, i.e. in the humid, rainy season, that these trades may be virtually absent. Although rain may fall at any time of the year, drought periods of more than a month are quite common. Niue is a fairly large island of some 65,000 acres and about 13 miles long by 11 miles wide. The whole surface, apart from the outer margin, is of coral which is raised up between 100 and 200ft above sea level. This coral is often extremely rough and in many parts there is little or no soil. Basically the island consists of two terraces round the perimeter, the first being up to 100ft high and is usually very rocky and difficult to negotiate because of the jagged coral pinnacles. The second terrace encloses the main part of the surface which is in the form of a very shallow basin.

The porous coral ensures that there are no areas of standing water or swampy ground anywhere, although a fresh-water lens lies in the coral at various depths below the surface. This is now being exploited by means of deep bores but watering in the form of irrigation is hardly practised at all. Thus, practically all the domesticated plants have to grow unaided and I want to mention especially the naturalisation of some of the more ornamental ones. Nearly all the villages are near the perimeter, those on the western side being on the Lower Terrace, the centre of administration—Alofi—being in this category. The surface of Niue was originally mostly covered with forest and considerable areas still exist. There are few plants of horticultural



(Photograph — W. R. Sykes)

Rhoeo discolor, by the sea at Avatele

interest amongst the native woody plants, a fact which may come as a surprise to many, but is actually typical of a tropical South Pacific island. By this, I mean that few native plants have large attractive flowers; therefore, when I saw a splash of bright colour I usually found that I was looking at an exotic.

I have mentioned that droughts are by no means infrequent. As a result, I found that many of the ornamentals had latex in their tissues and sometimes succulent or semi-succulent leaves. These often created drying problems since the main part of my work there consisted of preparing herbarium specimens. A good example was one of the commonest plants grown round the houses—the frangipanis, *Plumeria rubra* and *P. rubra* forma *acutifolia*. The former is the pink-flowered form and the latter the white. In places they appear to be naturalised but I found that they had always been planted originally. In the very rocky village of Hikutavake at the northwest corner of the island, small trees were growing out of crevices on a coral slope where there appeared to be scarcely a vestige of soil. Equally common were the forms of *Hibiscus rosa-sinensis*, the common crimson one being most abundant. Again, in spite of reports of its being naturalised, I found that in all suspected cases they were near the site of an old house or a grave that had become overgrown. Like the frangipanis, I never saw or heard of fruit and seed being produced. Another feature common to both plants is their use for personal adornment by members of both sexes, the frangipanis generally in the form of the ubiquitous South Pacific lei or garland.

Another species found everywhere where human beings had any form of building was *Acalypha wilkesiana* in one or other of its well-known red and brown-leaved forms. It was a fairly compact shrub up to 8ft high. Most houses did not have any separate boundary to the plot of land in which they were situated but sometimes an acalypha hedge was grown to screen off part of it. The thick evergreen habit would also help to keep out the penetrating coral dust. On occasions, the striking *Acalypha hispida* or red hot cat's tail, was also seen round the houses. Nearly as common were the cultivars of *Codiaeum variegatum* and *Polycias guilfoylei*, usually being seen in one or other of the common variegated forms, the latter being also used as a hedge on occasions. A typical sight by the rocky paths leading down to the sea was the purple-backed leaves of *Rhoeo discolor* standing erect and shining with the sun on them. The white flowers are not very conspicuous because they are situated near the base of the leaves. Like most members of the comelina family that I know, individual flowers last for less than a day. In certain parts the coral boulders were hardly visible because of these plants. Another Mexican species even commoner than the *Rhoeo discolor* because it is found all over Niue, along roads and paths and over waste places, in plantations, coconut and breadfruit groves etc., is *Salvia coccinea*. This herbaceous salvia has two main colour forms on the island and I could not see why, in some places, one occurred and elsewhere it was the other. Indeed the bright scarlet and pink-flowered plants were often mixed up indiscriminately and occasionally I saw a plant with nearly white flowers. *Bryophyllum pinnatum*, a succulent species from tropical Asia was confined to the more rocky areas of the Lower Terrace, like the rhoeo, and again sometimes nearly monopolised particular small areas. Unlike the well-known *Bryophyllum daigremontianum*, the succulent leaves have no plantlets along the margins. The flowers are pendent and held well above the leaves on a main stalk. They were various shades of dull reddish and green, the best colours being where they were most exposed to the sun and drought.

The genus *Clerodendrum* is famous for the beauty of its species and I was interested to see several on Niue. The commonest one was the native *Clerodendrum inerme*, an untidy scrambling shrub which grows all round the island on seaward-facing cliffs. The flowers have white petals and the long protruding style and stamens are purple. As a horticultural plant, it cannot come into the same class as *C. buchanani* var. *fallax* (syn. *C. fallax*) with its large head of bright scarlet flowers. I saw this species scattered here and there, never abundant but successfully naturalised in scrub-covered country where it could obtain sunlight without being exposed directly to the force of the trade wind. The plants were usually 2-3ft high and roughly about the same height as *C. fragrans* cv. 'Pleniflorum.' This is a well-known southern Chinese plant and was always represented by the double form with very pale pink flowers. I could detect the fragrance as is implied by the specific name but it was not very obvious during the day. Although the so-called Honolulu rose is a very attractive plant it is a potential nuisance because of its rapid suckering habit. I noticed that it preferred the light shade of the coconut

grove or some other tree and near a few villages it has already covered considerable areas. This implies that *C. fragrans* cv. 'Pleniflorum' is of recent introduction and since there was no mention of it on Niue in a survey carried out in 1940 this is almost certainly the case. On my way home I visited Apia in Western Samoa and I was told that it is regarded as a serious problem there. While on this rather sombre note, I should mention another well-known member of the verbena family, *Lantana camara*. Although an attractive garden shrub for warm temperate countries, it is a scourge in many tropical and subtropical ones. On Niue, it is still confined to one small area in and around the prison farm. It is a recent introduction again and I am glad to say that it is being eradicated before it has a chance to get out of hand. The orange and



(Photograph — W. R. Sykes)

Clerodendrum buchanani var. *fallax* in an abandoned plantation.

pink flowers are followed by fleshy black berries which are probably spread by birds, the plants on Niue representing var. *aculeata* of this species with prickly stems.

A family well represented by species in our glasshouses and outside in warmer parts of this country, is the Rubiaceae. It is also well represented on Niue, especially in the native vegetation. Several of the commonest shrubs and small trees in the regenerating or secondary forest are rubiaceous species; others have the liane habit and one is a small creeping herb in the forest. On the exposed seaward-facing cliffs several members grow and it is here that one of the few with horticultural merit occurs; it is *Gardenia taitensis*, the name implying that it also comes from Tahiti. Like the florists' gardenia, *G. jasminoides*, it has glossy green leaves and very fragrant white flowers. I cannot recall ever seeing *G. jasminoides* in its original single-flowered form but I imagine that it would look rather like the other species. Around some of the houses the brilliant scarlet *Ixora coccinea* is cultivated and once I collected the even more spectacular *I. macrothyrsa*. This attractive shrub was growing up to 8ft in height. The reddish flowers of *I. odorata* were also very rarely seen on Niue and they bore a remarkable resemblance to the even more fragrant ones of a shrub in a quite unrelated family, *Phaleria disperma* in the Thymelaeaceae. This last species was more or less naturalised near one village.

I shall long remember certain areas of waste land on Niue in and around the villages where some of the colourful exotics were particularly abundant. One of the best examples was seen opposite the little hospital just south of Alofi where a strip of Lower Terrace forest had been cleared and then left. The result was a big contrast to the deep green of the untouched forest behind. The white flowers of *Asystasia gangetica*, a small acanthaceous plant, and the pepe, *Leucaena leucocephala* (syn. *L. glauca*), an acacia relative, were abundant. The bronze and pink leaves of *Acalypha wilkesiana* were very common and the purplish ones of *Coleus blumei* were also in evidence. I was interested to see that several coloured leaved clones of the common coleus had become fully naturalised in various parts of the island. Often they remained quite separate in their distribution. At one end of this waste area the rocks were covered with the purplish leaves of *Zebrina pendula*. Nearby, the straggling semi-shrubby plants of *Tithonia diversifolia* were producing their big yellow sunflower-like heads. This and the next two species are natives of Mexico. In several places there were twining plants of the coral vine, *Antigonum leptopus*, whose rosy-crimson polygonum-like flowers did not quite seem to blend with the bright scarlet patches of *Euphorbia heterophylla*. The last-named was apparently not present on Niue in 1940 whereas today it is all over the island where man has disturbed the vegetation. Thus its distribution resembles that of the *Salvia coccinea* mentioned earlier and which was almost certain to be present in such places. Yet another tropical American species here was *Mirabilis jalapa*, the 4 o'clock plant, which on Niue always had magenta flowers. *Stachytarpheta urticaefolia*, which is sometimes called the blue



(Photograph — W. R. Sykes)

Zephyranthes Rosea with other naturalised herbs

rat's tail, is a herbaceous species now very common on Niue and although the long, narrow, cylindrical spikes of deep blue flowers are very attractive, it is becoming a nuisance. Not far away grew a much more localised species, *Russelia equisetiformis*, but where it did grow there were large clumps of this South American shrub, its wands of scarlet flowers swaying in the wind.

The prevalence of amaryllids was notable in all the villages, different species coming into flower at different times; for example, I saw quite a different set in bloom at the end of my 10 weeks stay as compared with those at the beginning. *Amaryllis vittata* was one of the commonest of the family, being virtually naturalised around some wayside graves; its bright orange-red flowers being on shorter stalks than I have seen in plants growing in glasshouses in temperate lands. Crinums were commonly grown, white-flowered and purple-flowered plants of several species being present. One of the most striking of them, *Crinum asiaticum*, formed a massive clump several feet high. When the rain started to

come as the season warmed up in September and October, the attractive Brisbane lily *Euryclides amboinensis* with its large hosta-like leaves and spikes of white flowers suddenly appeared from dormant bulbs. *Hymenocallis littoralis*, with its peculiar spidery white flowers with their weblike corona, was sometimes used like the crinum and Brisbane lilies to mark a boundary between two houses. The smallest member of the family provides one of the striking sights in parts of Alofi a week or so after a heavy rain. I had heard about the "pink crocuses" which appeared in thousands at such times and I soon discovered that this plant was the amaryllid *Zephyranthes rosea*, a tropical American species also grown in New Zealand.

Turning from the bulbs to the cultivated flowering trees, I noted that the latter were not utilised as much as they could and should be in that there was not a great variety considering what is growing in other tropical Pacific islands. The inevitable flamboyant *Delonix regia* was probably the commonest ornamental tree. In September they were all deciduous but towards the end of October various trees began to flower. The related *Cassia fistula* or Indian laburnum, was occasionally grown but there did not seem to be very good specimens of this beautiful tree. I noted that some were in leaf whilst others were deciduous still. *Bauhinia monandra*, another member of the family, was attractive with its pink butterfly-like flowers. *Melia azederach*, Persian lilac, was grown occasionally but I have seen specimens as good in New Zealand. On Niue it flowers in September and early October. *Spathodea campanulata*, the African tulip tree, has a spectacular orange-red flower. On Niue this bignoniaceous species did not grow into a large tree and again was only seen occasionally.

A number of long-established trees have some utilitarian value as well as being ornamental. A good example is *Syzygium malaccensis*, the fekakai of the Niueans. This myrtaceous tree has clusters of pink flowers which are followed by the edible fruits. The dominant native trees of the Niuean forests are syzygiums, often still known as eugenias, but the fekakai is a Malaysian tree as suggested by the specific name. However, *Pometia pinnata*, the tava of Polynesia, is a native tree. It was common in the forests as well as in the villages. The young leaves are bright orange-red whilst the small flowers are a much deeper red. Later on the fruits are eaten. Very different is *Aglaiia saltatorum*, the lagakali of Western Polynesia. This is a small tree of the melia family and its sweet scented small orange flowers are used for scenting coconut oil. Another tree similarly used in the ylangylang of Malaysia, *Cananga odorata*, commonly known as mootoi on Niue. This member of the Annonaceae has fragrant greenish flowers. *Aleurites moluccana*, the candlenut tree, is commonly naturalised in and around the villages and is quite attractive in flower. Originally the nuts were used for torches and the oil was also extracted for lamps. In addition, the nuts were, and sometimes still are, roasted and eaten. Apart from the abundant coconuts, there is an attractive fan-leaved palm in some of the villages, the leaves of which are used for various purposes and the small fruits are eaten

like nuts. It is *Eupritchardia pacifica*, an indigenous species of the South Pacific, but it was probably brought to Niue by man in pre-European times. Finally, the abundance of pandanus on the island is of importance in view of its use in the making of baskets and mats, most of which are exported to New Zealand. The original *Pandanus tectorius* grows commonly all round the coast and is also often seen in and near secondary forest remnants inland. Several forms of this species from Tonga and Samoa are cultivated but the most favoured screw pine for basket making is the introduced species *Pandanus veitchii*, this being present in its usual white-margined form.

NOTES FROM A TE KUITI GARDEN

M. MORGAN

Living as I do on a sheep farm of some eight hundred acres, not far from the famous Waitomo Caves, I became interested in all the varied and unusual plants which abound in this high rainfall area. The farm is littered with huge limestone rocks upon which grow masses of *Astelia* with its spectacular white bottle brush flowers and from the damp *Astelia* roots dangle the lime green tangled tails of *Lycopodium billardieri*. This plant with its lax stem of spikey fronds seems to be relished by goats, and is found in the few places which they cannot reach. Nearby on the same rock we may see in January a mat of pale gold. This is the small *Earina mucronata*. This little orchid will also attach itself to pungas festooning the trunk with its grass-like leaves and delicate tiny flowers. Nearer to bush can be found a larger orchid and a close relation known as *Earina autumnalis*. This plant is also prolific in these parts and has showers of cream sweetly scented flowers in March. Sometimes known as the Easter orchid, this fascinating plant's spicy aroma will reach my nostrills on a still day whilst yards away from the actual plant. I wonder if it is the only scented orchid?

Just recently I have come across another member of the New Zealand orchid family and this one has been identified as *Sarcochilus adversus*. The leaf is about two or three inches long, and is a succulent glossy green. The plant clings to tree trunks by wrapping threadlike roots around at approximately eye level. As yet I have not seen it in flower, only its inch long seed pods.

The *Dendrobium Cunninghamii* is perhaps the better known of New Zealand epiphytic orchids it is a true tree dweller whilst *Earina* will grow on rocks as well as trees. To come across a large clump of *Dendrobium* cascading down a giant rimu, its racemes pink and white little orchid flowers in February is quite a find.

Finally I will mention the *Bulbophyllum pygmaeum*, surely amongst the world's tiniest orchids. I found it at approximately 1200ft in poor scrub clinging to small trees, quite at home with the more rampant mosses. It has leaves half an inch long and lots of round green nodule like fruits. How and when it flowers I have yet to find out. So there are, to the best of my knowledge five epiphytic orchids in New Zealand.

DISTRICT COUNCIL REPORTS

NORTH TARANAKI

May — At this meeting Miss Kay Messenger of Inglewood, gave an illustrated talk on the "Scandinavian Countries" during which she showed many outstanding slides of unusual places even venturing inside the Arctic Circle; a very good talk indeed.

A well prepared and interesting ten minute talk by one of the younger members was contributed by Mr Paul Ferguson on variegated shrubs. Variations in these plants are usually due to the lack of chlorophyll which slows up the process of photosynthesis and consequently most variegated trees and shrubs are much smaller and grow more slowly than the original green one. He then went on to describe the specimens which he had brought along.

The normal *Pittosporum tenuifolium* grows to a height of about seven feet and has a variegated form which may be grown as a hedge. *P. tenuifolium garnetti* is not only variegated but also has pink blotches on the leaves. *P. eugenioides* normally growing up to a height of twenty feet under trees and in neglected parts of the garden has a variegated form with much lighter-coloured leaves growing to only half the height. *Hebe carnea tricolor* with its pink flowers provides a very attractive shrub or a good hedge trimmed low round a border at about two feet. *H. waireka* with its dainty foliage is attractively margined and overlaid with cream. *Coprosma repens*, the 'taupata,' growing to ten feet withstands salt winds and is usually found hugging a cliff or sprawling down over the rocks. It can also be grown as a hedge. The variegated form *C. repens* 'variegata' with a yellowish tinge around the leaf margin is useful for the rock garden. *C. williamsii* 'Variegata' growing to only three or four feet and having foliage mottled green and white makes an attractive pot plant. *Metrosideros excelsa* 'Variegata' grows to a height of eight feet and is also very attractive. *Phormium colensoi tricolor*, the variegated form of the mountain flax, has a red vein on the edge of the leaf. It is very effective in the rock garden. *Heimerliodendron brunonianum* 'Variegatum' the variegated parapara, with its leaves marbled in three tones is commonly known as the bird-catching plant because of its extremely viscous seedpods. While it will grow to about eight feet, it does even better in a tub on a porch as it is slightly frost-tender.

JUNE — Our District Council members were extremely disappointed when illness prevented that colourful T.V. personality, Mr James Sterling of Wellington, from visiting New Plymouth for our monthly evening meeting.

At short notice Mr A. D. Jellyman whose scheduled meeting was to be in July produced an illustrated talk on some famous English gardens which held the interest of the large audience from beginning to end.

First a few words about the several interesting specimens displayed by members. A branch of yellow-berried holly described by the president was said to be from a tree at least sixty years old. This was the first time that it had produced a really good crop of berries. If the seed from these berries were sown only about ten per cent would come true.

Mr Jellyman then went on to describe the other specimens. *Reinwardtia trigynum* 'indica' is a yellow-flowered semi-tender plant growing only about three-feet high. *Ligustrum lucidum* 'tricolor', a variegated form of the privet on which the young spring growth has a distinct tinge of pink around the yellow margin, does equally well in shade or in full sun. *Euonymus japonicus* is the ordinary green form of the euonymus but a better known species is perhaps the spindleberry, *Euonymus europaeus*. It is deciduous and the fruits have three-valve seed pods which open a bright crise pink to show orange seeds. A rather odorous South African bulb belonging to the onion and lily family, *Tulbaghia violacea*, grows about eighteen inches to two feet high and flowers from October to late Autumn. I understand an odourless form of this plant is now available from nurseries.

The *Leucodendron* shown had large yellow bracts but being a seedling no one was prepared to name it, especially after Mr Middlemann's visit earlier in

the year. He declared that there were so many seedling variations in New Zealand that it was impossible to name them with any certainty. *Hebe diosmifolia*, a native species, can be grown from seed quite easily and will come true. The berries of *Aucuba japonica* are borne on plants with only female flowers. For a good crop of these large red berries a male plant must be grown near by. Two other plants of general interest were the *Datura sanguinea* with attractive trumpet flowers and aromatic foliage and *D. cornigera* (*Brugmansia knightii*) the nectar of which is reputed to be deadly poisonous. The corkscrew willow, *Salix matsudana tortuosa*, makes a good and distinctive sort of tree in any garden and is much sort after for floral work. Among several pink Camelias of early blooming varieties shown were 'Fluted Orchid,' Phyl Doak,' and Berenice Boddy' which should be grown in semi-shade because it burns rather easily. Of the *C. sananqua* species the most attractive were 'Plantation Pink,' a very vigorous variety with a lovely scent the free-flowering 'Mone-no-yuki; and 'Showa-no-sakae,' a semi-double with a rather weeping habit.

MR JELLYMAN'S TALK

In 1966 Mr A. D. Jellyman, Assistant Director, Parks and Reserves, New Plymouth was awarded a bursary to visit parks and gardens in Britain. He visited among other places Wisley which is under the direction of Mr Frank Knight who may be visiting New Zealand early in 1968; The Institute of Glasshouse Crops research station at Littlehampton; Suttons' Seeds; the Institute of Park Administration College; Southend-on-Sea Parks Department; Liverpool Parks Department; the Parks Departments at Glasgow and Edinburgh; Chelsea Flower Show; The London Royal Parks and the Greater London Council Parks.

It is impossible to cover all the places that Mr Jellyman spoke about and so we picked out just a few of the points found most interesting. Mr Jellyman considered that the Edinburgh Botanical Gardens were probably the finest in Britain and in these gardens the extensive rock gardens of more than five acres

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were really outstanding. It was here that many New Zealand alpine species were to be found including *Celmisia* and *Hebe* species. It was here, too, that Mr Jellyman saw *Ranunculus Lyalli* in full bloom. It was also in Edinburgh Botanical Gardens that there was a bed of beautiful blue Himalayan poppy, a hybrid developed from *Meconopsis grandis* and *M. betonicifolia*, called 'sheldoni.'

The Southport flower show with its fine massed display of dahlias, an herbaceous border almost a mile long and rock garden displays must rank as one of the premier shows in England.

One of the finest gardens Mr Jellyman saw was in Gloucester. It was Hidcote Manor which relied for its appeal on surprise. It consisted of a number of small gardens separated by well-clipped beech hedges, topiary, ornaments and water, and each herbaceous border having its own predominant colour.

At Conway is one of the best preserved castles in Wales. Here are the gardens of Bodnant where Charles Puddle is head gardener. Rhododendrons are planted here in much greater density than in New Zealand. *R. augustini* is one of the rhododendrons for which Bodnant is famous.

Of the parks of London Regent Park stood out for its roses, Hampton Court for its historic interest and for its famous grape vine. This vine planted in 1768 by Capability Brown, one of the greatest landscape artists England has ever known, is reputed to have roots extending to the Thames river some three-quarters of a mile away. It is still bearing grapes. Windsor Great Park is some four thousand acres of which the Savill Gardens and the Valley Gardens occupy some six hundred acres.

The Savill Garden, developed by Sir Eric Savill since 1931, is a woodland garden with plantings of rhododendrons, Magnolias, azaleas and many other attractive plants. There are many magnificent rhododendron species growing here. At the end of the Valley Garden an old quarry has been informally but tastefully developed into a heath garden.

Following a visit to the Isles of Scilly and Treco Abbey, the home of the Dorrien-Smith family, where many subtropical plants and a most extensive collection of New Zealand species are featured Mr and Mrs Jellyman's tour concluded with a short visit to the continent to the Keukenhof gardens in Holland.

JULY

About sixty people attended a School for Gardeners in the orchard of the North Taranaki Branch of the Intellectually Handicapped Children's Society. The instructor, Mr W. J. Wilson, demonstrated first of all the preparation for planting and the planting of an apple tree, stressing the care necessary to avoid damaging either the root system or the buds. He showed the necessary root pruning pointing out that the cut should be underneath and not on top of the root stem to prevent the water entering. He suggested that the final pruning of the tree be left until after planting. Mr Wilson then proceeded to demonstrate methods of pruning older trees. He included an apple, a pear, a plum and a peach tree showing how to control the shape of the tree, the recognition of fruit buds and the building of leaders.

Mr Messenger, the president, thanked both Mr Wilson and the I.H.C. Society for their help.

At the evening meeting the same day the programme began with the presentation by the president, Mr W. J. Messenger, of the Skellerup Prize to Miss Judith Cowan. Miss Cowan won the prize as the most successful student completing the Junior section of the N.D.H.

A student, Mr David Payne, gave a short talk on Proteas. The name protea he said came from Proteus, the versatile sea-god who was able to change his shape at will. This of course was an allusion to the great diversity of the species. The genus of flowers, native of South Africa and boasting about one hundred species, was sometimes known as the Cape Honey Flower. Plants could be raised readily from seed and also from cuttings. The seeds however were rather difficult to fertilise and the percentage of germination was rather low.

Mr Payne then showed a few of the better known types including *P.*

cynanoides (the King Protea), *P. barbiger*, *P. longiflora*, *P. scolymocephala*, *P. repens*, 'mellifera,' *P. neriifolia*, and a rather unusual one, *P. macrocephala*. *P. susannae* had foliage with a rather unpleasant odour.

Mr A. D. Jellyman described the specimens brought by members beginning with camellias, Barbara Clarke, Salutation, Brian and Donation. All these four flowers came from a very good group of garden plants displaying the flowers much better than some and having a rather upright habit of growth. *Camellia* 'Dainty' a full sister to *C. Elsie Jury*, was one of the only two seedlings raised from that particular cross by Mr Les Jury. One was single and called 'Dainty' while the other, a double was called 'Elsie Jury.' Another interesting plant described was *Pratia physaloides* (*syn Colensoa physaloides*) belonging to the Lobelia family. It had attractive flowers shaped something like the Kaka beak followed by magnificent blue seed pods of really rich indigo. The unusual distribution of this New Zealand specimen was in a line from Whangarei, its southern-most natural distribution, up to the Poor Knight and Three King Islands. Mr Jellyman said that it grew about two feet high on the banks of streams and along the margins of the forest in damp places. It was quite hardy and was growing quite successfully at Pukeiti.

Two interesting orchids described by Mr Tom French were two seedlings from a cross between *Oncidium gardneri* and *O. crispum* both from the mountains of Brazil. Mr French said they required no special treatment and would grow outside in sheltered places in Taranaki. Of these seedlings one was from Australia, the other raised by Mr French himself and both were flowering for the first time. The seedlings were of slightly differing shades of rich brown.

The guest speaker for the evening, Mr H. J. Marchant of Cardiff well known to Rhododendron growers throughout New Zealand, described the journeyings of the combined group from the Rhododendron Society and the Pukeiti Trust which he organised and led through parts of the United States a few months ago. His talk was illustrated by slides. Mr Marchant also showed several leaves of rhododendrons stating that in many instances the under-surface of the leaf was the only certain means of positive identification. Mr Marchant stated among other things that although the Rhododendron hybrids being raised in New Zealand were exceeded in numbers by those being raised in the States the growers there were surprised to find that the quality was equally as good and in some cases even better than those being raised in the U.S.A.

WAIKATO

MAY — The Waikato has experienced many more frosts than is normal this winter and it is interesting to observe their effects on plants. Many of the tender trees and shrubs which normally survive reasonably well in this district are showing signs of damage, and Proteas, Leucadendrons and Leucospermums markedly so. *Acacia baileyana*, commonly planted, shows a surprisingly varied tolerance to frost, some specimens showing severe and others little or no damage. Citrus which are widely grown in home gardens in the Waikato show distinct signs of frost damage but these plants generally make a rapid recovery when new growth starts in the Spring. The effects of frost were enhanced by the long mild autumn during which a relatively soft growth was encouraged and which suffered when the colder weather came.

At the May meeting horticulture in an area about which we hear little was described by Mrs J. D. A. Cox, of Puraruru, who spoke and showed slides of her travels in South America. One point which was emphasized was the use of the Plaza, or square, in most towns. These were, of course, the result of Spanish influence and they are used by far greater numbers of people than would be parks usually sited by necessity in the suburbs.

Panels of competent horticulturists prepared to answer a wide range of questions always seem to attract and one such was held at the June meeting under the capable chairmanship of Mr A. E. Smart of Te Awamutu. Mrs W. M. McFarland, of Whatawhata, Mrs M. Harrison of Hamilton, Mr T. K. Butler of Cambridge and Mr E. J. Martin of Hamilton were the panel who with the audience showed every sign of enjoying themselves.

AUGUST

Camellias have become very popular and widely planted in this district, and a talk on their culture and a description of the newer hybrids by Miss P. M. Bates at the August meeting was appreciated by members. Using live material to demonstrate how hybrids had been raised made many realise how much is owed to the comparatively small band of plant breeders. The results of trial work carried out by Miss Bates on growing media for Camellias and their manurial requirements were discussed and illustrated and provoked much interest.

At the monthly meeting one plant each month which has received the Award of Garden Excellence is chosen and a specimen shown. Its use in the garden, and cultural requirements are discussed briefly and this appears to be creating constant interest. It is hoped to deal with all these plants in time, choosing the most appropriate season in which to do so.

Vandalism is regrettably a curse that is associated these days with public gardens, and a particularly deplorable incident occurred in Hamilton recently. The Council has decided to change Garden Place, in the centre of the city, from a parking area to a real garden and work has recently been commenced on this laudable project. Seven *Ginkgo biloba* trees, which were for many years the only real trees in the forest of parking meters were ring-barked one night. About eighteen years old they were intended to be used in the new garden layout, and trees of this size and age are by no means easy to obtain. When the damage was discovered they were bridge-grafted at once and hopes are entertained that they will be saved, but this will not be known until growth commences again. Although this development is somewhat controversial locally it is saddening to think there are people in our midst who would stoop to such a despicable act of wanton destruction.

WELLINGTON
APRIL

A large number of members and friends toured the Wellington City Council's Berhampore Nurseries, Lady Norwood Rose Garden, Begonia House and the Botanic Gardens Nurseries in April.

At Berhampore we saw 5000 Cyclamen coming into flower, to be brought into the Lady Norwood House to replace the Begonia display. Members were most impressed with the method of soil sterilization — rotted turf was first put through the soil shredders then all of this was processed through the sterilizers. All soil used in this nursery is sterilized. Particularly noticeable was the large number of flowering gums and the very fine range of house plants which included Orchids, Coleus, Abutilons in addition to a comprehensive display of plants in the fern houses. We were interested to hear that half a million bedding plants are raised at Berhampore each year.

The Director of parks, Mr I. D. Galloway, organised a most enjoyable afternoon tea at the Begonia House for us all. Considerable interest was shown in the Banana tree which was bearing flowers and fruit. The first of the Cyclamen were on show and the African Violets flowered in profusion. The red petals of the *Clerodendrum thomsoni* had dropped and the bracts turned a dull purple. This plant apparently had an abundance of flowers this season. A notable species was the *Platyserium grande*, Elk's Horn Fern, this was a very fine specimen.

In the Lady Norwood Rose Garden members were particularly interested to see individual roses displayed in the trial beds. Particular note was taken of Western Sun, a vigorous healthy looking yellow. Pernille Poulsen, a pink floribunda, was also greatly admired.

The Rose Beds flourished here despite the lateness of the season. Rose Zambra took the eye of many people, an unusual floribunda of copper tonings. Fragrant Cloud, an outstanding rose of exceptional perfume, made a magnificent display, a deep vermillion red in colour and apparently of excellent health and vigour.

We then moved to the Botanic Gardens where a massive range of house plants

was being grown in glass houses for use in the Begonia House and also for Civic decorations. Members were particularly interested in seeing pineapples in full fruit. In the Mist Propagation houses there was a tremendous range of cuttings; varieties of the latest Camellias, Conifers, Azaleas, Ericas and Hebes, in fact just about every shrub listed in a nurseryman's catalogue, in addition to the more common subjects such as Ngaios grown in their thousands for the City's Town Belt. Lined out in open frames were again many other trees and shrubs for the years plantings.

This type of outing appears to be of considerable interest to members and it is gratifying to find that it gains so much support. We are indeed grateful to the Director of Parks for making this tour possible and look forward to more of these outings in the future.

MAY

An evening meeting was held in Shell House on Thursday, 18 May. This function was particularly well attended, some 100 members, representatives of horticultural and floral art groups and their friends being present.

The Chairman of the Wellington District Council, Mr J. G. Short, extended a warm welcome to all. The Dominion President, Mr J. F. Living, presented certificates to the following:

Mrs D. Benstead (Fellow)
Mrs Joan Gerondis (Fellow)
Mr and Mrs A. J. Hyder (Fellows)
Mr R. H. Mole (Fellow)
Mr J. G. A'Court (Fellow)
Miss J. E. Martin (Junior Certificate of N.D.H.)
Mr G. P. Nind (Junior Certificate of N.D.H.)
Mr R. D. Bennett (Certificate of Vegetable Culture)

The Dominion President spoke on the aims and objects of the Institute and gave an outline of the kind of work it undertakes. Mr Living made the point that the Institute did not in any way run counter to the activities of horticultural or floral art societies. Its aim was to help wherever possible, certainly not to hinder.

After presentation of certificates, the meeting was addressed by Mrs Barbara Matthews, A.H.R.I.H. (N.Z.). She spoke about plants and shrubs which could be successfully grown in and around Wellington. The speaker also touched on ways and means of laying out difficult hillside sections. The talk was illustrated with slides.

It was emphasized that there was a good range of plants and shrubs which could be well grown in Wellington, even in the more exposed areas. Mrs Matthews said that less experienced gardeners sometimes became discouraged by failures, which in the main were brought about by attempting to grow subjects unsuited to local climatic conditions or to the particular situation in which they were planted.

It was suggested that horticultural societies could do a lot towards correcting this situation by giving more publicity as to the types of plants and shrubs which will thrive in Wellington and the soil conditions and situations they prefer.

Mrs Matthews said that although strong winds did blow in Wellington at times she did not think they were nearly as bad as people living in other parts of New Zealand imagined. She reminded her listeners that Wellington had a beautiful setting and with a little more effort in the horticultural field on the part of its citizen it could be made even more beautiful.

The first group of shrubs to be recommended was the conifers. They grew in Wellington, were well suited for mixed planting and provided a wide range of height, texture and colour. Branches or fans of conifers were very suitable for floral arrangements.

Cotoneasters, Forsythias, Viburnums, Kowhais and some Grevilleas were also mentioned as suitable subjects.

Mrs Matthews reminded her audience that there were many beautiful

native shrubs and plants, not forgetting the flaxes, which would give a good account of themselves in Wellington. For very exposed positions prostrate subjects were ideal.

In less exposed situations the smaller varieties of Magnolias, Camellias, Azaleas (particularly the *A. mollis*) and Callunas would grow well if they had the right soil conditions. Lilies could be grown among Camellias and Azaleas.

Proteas were another group which could be recommended for planting on well drained banks and slopes, preferably facing north.

Mrs Matthews showed some slides depicting how rocks could be used to advantage, especially on slopes and odd corners.

For flat dwellers or those with very small sections the growing of bonsai shrubs or trees could hold much interest.

At the conclusion of her talk Mrs Matthews showed a number of outstanding New Zealand gardens.

Mr Ray Mole proposed a vote of thanks to Mrs Matthews, and the evening concluded with supper. The theatre and lounge had been tastefully decorated with floral arrangements.

PUBLICISING THE INSTITUTE

On Thursday, May 4th, 1967, Mrs G. Deldyck (Hon. Secretary, Wellington District Council) was privileged to introduce Fellows of the R.N.Z.I.H. who are members of the Hutt Valley Horticultural Society (Inc.) to members of that Society and the public at the official opening of the Chrysanthemum Show.

Mrs Deldyck explained the Award of Fellowships and then outlined the aims, objects and work done by the Royal New Zealand Institute of Horticulture.

The audience was most attentive and from later conversations it is felt that perhaps other Horticultural Societies could follow this idea and so the general public would understand more fully the workings of the Institute.

Mr and Mrs Harper (President of Hutt Valley Horticultural Society) later graciously invited with the Mayor of Lower Hutt, Mr Dowse, those guests present to partake of afternoon tea and so a very pleasant afternoon was terminated.

WHANGAREI

APRIL

Our delegates, Mrs Reynolds and Mrs Martin, attended the Conference held at Nelson on March 2nd and gave us an account of the proceedings at the April meeting.

Mrs Martin said that both she and Mrs Reynolds found the going very strenuous. The flight from Whangarei to Nelson entailed the use of three different planes, with longish waits at both Auckland and Wellington. A reception of delegates was given by the Deputy-Mayoress of Nelson on the evening of arrival. This coincided with the closing event of the Parks and Reserves Conference, and included a lecture by Mr Dean, Director of Auckland Parks, on street planting and beautification. This was illustrated in colour and was of great interest. Supper followed and bed was reached most thankfully after our long day.

Conference opened at 9 a.m. and continued all day, with an hour off for lunch. A good deal of purely formal business was done, but there were some useful discussions on a variety of topics, some of which were of special interest to Whangarei. The first was in regard to *Historic Trees* and their preservation. The oak at Waimea was mentioned, and an assurance given that it was to be cared for, and better drainage provided. Mrs Martin mentioned the historic row of oak trees at Kamo, and said that vandals had taken the plaque provided by the Beautifying Society. She asked if the law provided any penalty for such acts and the Dominion Council promised to make enquiries. *Litter*: this was discussed and it was agreed that the laws be enforced, and some kind of com-

bined effort be made to ensure action. Since Whangarei District Council was the first mover in what has now built up into a strong movement against litter it is pleasing to note progress made. Our own remits were almost the last to be taken. That regarding the Hen and Chickens was passed with a very slight amendment. The remit to have Dominion Council meet once a year in Christchurch and once in Auckland, so that distant sections could be represented, failed on the score of expense.

After the business was finished the Associateships of Honour were presented by the Dominion President, Mr Living. Mrs Martin received this honour, the first to be given to a Northlander, and only seldom given to a woman. Nominations are made by District Councils, only six may be elected in any one year, and the number holding it may never exceed 50. It is conferred for "distinguished service to horticulture in New Zealand."

Two lectures closed the afternoon session—one on Garden Roses, by Mrs Nancy Steen, who also received the award of Associate of Honour, and another on House Plants, by Mr Taylor of Christchurch.

At 5 p.m. the Deputy-Mayoress, Mrs Eyre, entertained delegates at a cocktail party. After dinner delegates assembled at the Conference Hall at 8 p.m. for the Banks Lecture which has been fully reported in our journal.

Your delegates were of the opinion that this lecture was outstanding and most timely. It emphasised the importance of Horticulture in our export trade—now worth over £30 million per year, and the great possibility of increases. Also it brought home to us the necessity of better handling of perishable goods, and greater care in their transport. Instances were given of valuable asparagus for the London market being ruined by senseless handling before it left New Zealand. This lecture closed a very long day's work. It was so arduous that there is now a move to spread the work over two days, and not to have afternoon lectures.

On the morning following the Conference most delegates took a bus tour of Nelson's Parks, Reserves and Recreation grounds. Mr Leigh, the Director, travelled with us and told us the story of gardening in his City. The Nelson City Council spends £1 per annum for every head of its population on its parks, reserves, and the many smaller areas which it has beautified. On the hillsides around the City are areas which are in the process of being cleared and planted. The population is some thousands less than that of Whangarei, but nevertheless between £25,000 and £26,000 is spent yearly. The plantings are imaginative and attractive, adding much interest to the City, and earning money in tourists' visits. Although no Flower Show was held in connection with the Conference the tour of parks and gardens compensated for such lack. Thank you, Nelson.

DISPLAY TABLE

The April Display Table did not provide the very wide range of plant material that is available in this month, the reason probably being that many of our more notable gardeners were absent, as the meeting fell on Anzac Day. However, many of the specimens brought were of an unusual kind and provided great interest.

Mrs Reynolds brought a most attractive specimen of *Fuchsia procumbens* in full fruit. As the sexes are separate, Mrs Reynolds had hand-pollinated the female flowers with pollen from a male plant in a distant garden, thus ensuring the setting of fruits—lovely inch-long cerise berries. This fuchsia could be most effective in a hanging basket, and your Editor knows of it being grown in a punga stump with great success. In addition to the fuchsia, Mrs Reynolds brought a fine maidenhair, and the less well known *Nephrolepis exaltata*, a fern from the tropics, but also coming from our own botanical region in the Kermadecs. It is pre-eminently a plant for a hanging basket, and multiplies itself by growing downwards in tiers or stories.

Kahikitea (White Pine) berries in profusion were much admired, this being an especially good year for them. It was remarked that several of our natives

fruited exceptionally well in regular cycles of four years. The green *Chrysanthemum* "Nightingale" also attracted attention.

Mr Blumhardt brought a very new hybrid Camellia, a cross between *C. reticulata* 'Confucius' and the species *C. granthamiana*. This cross was made in Guilo Nuccio's nursery in California, and produced a very large, single pink flower. Other Camellias shown were Sasanquas, one unknown and the other Plantation Pink—a good choice for any grower.

Pentas lanceolata, from tropical Africa, was again shown, proof of its long season of flowering, and grown outdoors. Another flower seldom seen was *Rondoletia strugosa*, a lax branched shrub with red flowers, rather more tender than its sister shrub *R. amoena*. It comes from tropical America and does well in a warm spot, where its 4ft branches get support from other shrubs, or netting.

GARDEN ODDMENTS

A recipe for feeding maidenhair ferns was given by Mrs Reynolds. A teaspoonful of Maxicrop dissolved in a quart of water, and given once weekly, produced the excellent results which we saw on the Display Table. A very striking plant now in bloom, which is distinctive both in leaf and flower is *Alberta magna*, from Natal. It is quite hardy in Whangarei, grows five to six feet and in autumn produces bright, scarlet panicles of flowers. These are followed by equally bright red bracts which give a long season of interest. In addition, the leaves are large, shining and bright green. Planted in a warm, well-drained soil it gives handsome returns.

A Sasanqua Camellia of attractive colour and form, now in bloom, is 'Jean May,' a double with deep pink centre and paler on the outer petals.

QUESTION SESSION

Fuchsias: Why are my plants straggly and with few flowers?

Answer: Fuchsias should be pruned immediately after flowering, which is about the end of March or towards end of April. They respond to fairly hard pruning, and in our climate, come into leaf again very rapidly. Cut the thin growths right out, and shorten back the stronger ones to a good bud. Plant on the South side of house or fence. A very little lime added to our rather acid soil helps them.

Fowl Manure: Can fowl manure be used for vegetables?

Answer: Fowl manure should not be used on root crops or cabbages, but is useful for sprouting Broccoli and Cauliflower. With potash added it is very good for tomatoes. It is, in general, a good manure for volcanic soils.

Moss: How can I get rid of moss which covers the soil around my Nerines, Lily of the Valley, Phlox and Camellias?

Answer: Wood ashes sprinkled around the plants, except the Camellia. Work in some good, well-rotted compost.

Camellia: 'C Paolina Maggi' has yellowed leaves and the buds are brown.

Answer: This Camellia naturally has brown scales around the buds.

Bud drop in Camellia 'Lady Loch':

Answer: Give some small dressings of Potash at intervals of a few weeks. Health in Camellias depends a good deal on the site. The smaller leaved varieties such as sasanquas need more sun than japonicas, and reticulatas won't stand wind.

Carpet Beetle: Is it a fact that Hydrangeas harbour the Carpet Beetle?

Answer: No one present had ever heard or known such a thing.

Pear Tree: I grow violets under a Pear. Is such a practice harmful and would it lessen fruiting?

Answer: Since violets are surface rooting and often used as ground cover under Camellias, it is unlikely to be harmful.

Jacaranda: My tree, though some years old, does not flower.

Answer: Remove bark $\frac{1}{2}$ inch wide strip half-way round main branches and do the same a few inches higher up on the opposite side. This reduces the flow of sap, lessens leaf growth, and promotes flowering. Potash is the manure to encourage flowering. A little lime in our acid soil is also beneficial.

MAY:

MAKING AND PLANTING A GARDEN

At our May meeting Mr D. R. Purser gave us a very timely and useful talk on the layout and planting of a new garden. At the present time many hundreds of new homes and gardens are being established in Whangarei City and suburbs, with young occupants mostly unskilled in gardening. For these, as well as for others who wish to replan an existing garden, Mr Purser's plans and suggestions provide a useful guide, not only for the planting and layout, but for the prevention of the basic mistakes which are so likely to occur.

In newer subdivisions the sections were generally small, 1/5th or 1/6th of an acre. Their cost was such that it was not often possible to buy two. The best use of this small area was of the greatest importance and basic mistakes could be very costly, and make the site of little value. Bulldozing should be carefully planned and supervised, not only to safeguard the good top soil but also to prevent exposing rock masses on volcanic soil. Mr Purser said he had seen the value of sections reduced almost to nil by indiscriminate bulldozing. Architects should consider the section as well as the house. Because a by-law stipulated that a building must be at least twenty-five feet from the road, there was a tendency towards a sameness in siting, which it was desirable to avoid. There was also the likelihood of a sameness in planting which becomes monotonous so there was scope for adventure in planting. Nurserymen did tend to keep to the well-known, saleable lines, but they could buy and supply new things. The individual house-owner should plan his own section and not take his ideas from his neighbour. Mr Purser then drew a plan of a typical small section, and by altering the layout, showed how great an improvement could be made by skilful planting. Some of the straight lines became curves, dot shrubs were eliminated from the lawn, and spaciousness achieved by plantings around the boundary and framing the background to the house. A tree put in the middle of the lawn makes the section look smaller.

Objects like septic tanks should not be obtrusive, nor unsightly existing features be tolerated to the permanent detriment of the plan. Paths and lawns should be well constructed and shelter provided by hedges, or preferably screens of shrubs. Form and colour skilfully combined would give satisfaction all the year round. A group of conifers, using those of different form and colour, was not difficult to achieve. Some of the conifers were useful on clay soils, among them *Thuja*, and Junipers, such as *Thuja beerleyensis aurea* and *T. Rheingold* also *Juniperus squamata Meyeri*, and the Noah's Ark Juniper, *J. communis compressa*, a real miniature.

Some suitable plants for mixing which provide contrasts in form and colour were then given by Mr Purser. These consist of *Taxus sempervirens stricta* (tall columnar form), *Lonicera nitida aurea*, with the silky-leaved clumps of red or striped flax. For a smaller-scale planting one could use Noah's Ark Juniper with *Chlorophytum* or Red Irisene, and some of the variegated leaved *Alternantheras*. Use conifers together with several of a kind that do well in your soil. Maxicrop or seaweed are good manures for them. For cool, draughty places *Camellias* are good, especially 'Alexander Hunter.' In new gardens, basic plantings could consist of hardy yet showy shrubs, such as *Callistemons* (prune spent flower-heads in spring), *Protea barbiger*, *Photinia* 'Red Robin,' Golden Privet, *Camellias* on heavy or light soil, *Hebes* and *Eriostemon* 'Profusion.'

Avoid planting *Rhododendrons* and *Azaleas* till shelter is established. It is disheartening to new gardeners to lose plants. Heavy soils could be improved by using ¼ to ½-inch metal chips. Screens could consist of *Banksias*, *Grevilleas* or *Bamboos* of the non-suckering types. *Banksia integrifolia* was a good salt-resistant shrub for seaside gardens. Ground covers could be provided by such mat-forming subjects are *Thymes*, *Ajuga*, *Polygonum*, *Ivies* *Alyssum*, *Alternanthera*, *Heerie Rosea*, and a little-known native plant *Hydrocotyle*, once famous in England as a carpeter under roses. An appreciative audience gave Mr Purser an interested and attentive hearing, and recorded its thanks in a hearty round of applause.

DISPLAY TABLE

Variety was a noticeable element of the specimens brought to the May meeting. A fruit, still green, of the Kie-kie, *Freycinetia banksii*, was perhaps the most unusual specimen on display. This is a familiar plant throughout New Zealand bush, and when ripe is devoured by children and also much-loved by rats. A fine slipper orchid in full bloom came from Mr Waterhouse, and Mr Blumhardt showed an attractive new *Camellia japonica* as well as the grand old favourite, Grand Sultan. Both Luculias, white and pink were shown by Mrs Martin. This year their flowering seasons overlapped, which is not usual. The white, perhaps the better species, has a very long flowering season. This year of almost six months. A good collection of Chrysanthemums was shown by Mrs McMillan who grew a fine large one in a pot, moving it from place to place to meet varying conditions of weather. The wonderful autumn coloured leaves of the Rhus, *Continus americanus*, came from the same garden. *Russellia juncea*, a plant from Mexico which likes our climate, is one that should be grown more often. Its pendant panicles are seen to advantage when it is looked at from below. It is so grown at Parker's Gardens, New Plymouth, where it adorns punja trunks which face a steep bank.

QUESTION SESSION

CARROTS: How can I grow good carrots and prevent carrot fly.

Answer: Lindane is generally used as a preventive at sowing time. Sowing at two-monthly periods was a successful method, as plants were not left in the ground so long. Thinnings or broken tops should not be left on the ground as the smell attracts the fly.

Camellia reticulata (Capt. Rawes): Leaves had dark, ridgy spots on them. Is it a disease?

Answer: No positive reason could be given unless it was physical damage. It was not thought to be a disease.

Flowering Peach Iceberg: How hard can it be pruned?

Answer: It can be pruned severely in Spring and cut with a saw to as low as 3 feet from the ground.

Hoya: I have a Hoya cutting rooted, with three shoots. Should I remove two?

Answer: Let them grow.

Prunus campanulata: How shall I prune?

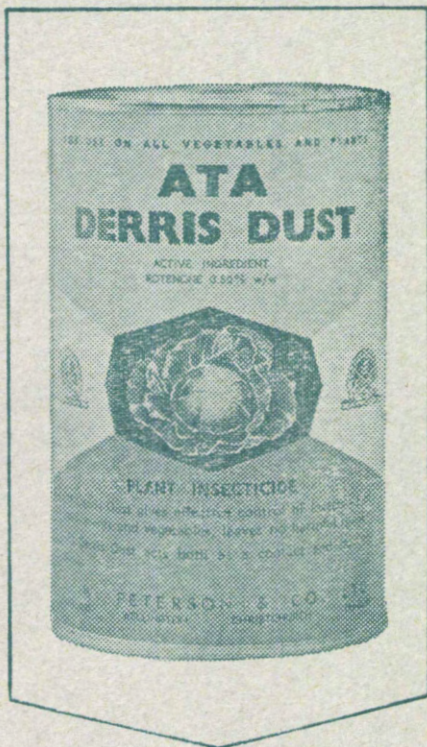
Answer: Cut the most vigorous shoots to a lateral. Japanese cherries should not be pruned as they easily develop Silver Leaf disease.

"IMPROVING GARDEN PRODUCTION."

The proceedings of the above One-Day Conference held by the Canterbury District Council (see report in this issue, page 173) are available at the cost of 60c (6/-). Please apply to Mr G. G. Henderson, Hon. Secretary, Canterbury District Council, R.N.Z.I.H., 332 Linwood Avenue, Christchurch 6.

OUR DECEMBER ISSUE

The normal deadline for articles submitted for publication in the December issue is November 15th, but to permit the Acting Editor to attend the National Rose Convention in Auckland from November 13th to November 19th, it would be appreciated if material could be sent in by the **1st November** where possible. At the same time the Acting Editor would be pleased to meet members of the R.N.Z.I.H. attending the Convention and where possible members in other North Island centres.



GARDENERS!

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GARDENS OF ENGLAND TOUR

Personally escorted by

MRS. BARBARA MATTHEWS
("N.Z. Gardener")

This Tour will prove to be one of the most interesting and outstanding ever offered to those with Horticultural interests.

In conjunction with many notable gardening authorities and Horticultural personalities in the United Kingdom, Mrs Matthews is planning a 45-day itinerary to take in many of the famous gardens and the stately homes of the National Trust. This will include such places as the home of Lord Aberconway (Bodnant, Titinhull, Barrington Court, Montacute, Stourhead, Nymans Gardens and Sheffield Park Gardens, Hidcote Manor Gardens, Howes Castle and many other places of Horticultural interest. The English tour will be high-lighted by a visit to the Chelsea Flower Show.

The Tour will be by air and will visit the gardens of Sum Li Wo and John Eades, the famous Orchid Growers in Singapore, the Tivoli Gardens in Rome, Brooklyn Botanic Gardens, New York and Menlo Park, San Francisco.

The Tour would commence during the last week in April, 1968, and finish during the second week of June at a total cost of approximately £560 (\$1120). Tentative itineraries can be obtained from:—

Johnston's Travel Centre,
P.O. Box 1493,
WELLINGTON

or

Mrs Barbara Matthews,
Editor, "N.Z. Gardener,"
P.O. Box 11,
WAIKANAE