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**NEW ZEALAND  
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**THE JOURNAL OF THE  
ROYAL NEW ZEALAND  
INSTITUTE OF  
HORTICULTURE  
(INCORPORATED)**



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CONTENTS

EDITORIAL — Trial Grounds .....	337
DOMINION CONFERENCE—Address by Hon. B. E. Talboys, Minister of Agriculture .....	339
MEMORIAL TO THE LATE MR M. C. GUDEX DEDICATED A HORTICULTURAL ANALYSIS OF N.Z. PLANTS — An Address by R. H. Mole, F.R.I.H. (N.Z.), to the Dom- inion Conference .....	343
A FEAST OF RHYTHMIC COLOUR — Renée Ottaway .....	344
PLANT NAMES IN WRITING — W. R. Sykes, B.Sc. (Hons.) N.D.H. ....	362
HORTICULTURAL TOWN AND AROUND — CHRIST- CHURCH — L. J. Metcalf, N.D.H. ....	365
OUR NATIVE FORGETMENOTS — A. W. Anderson, A.H.R.I.H. (N.Z.) .....	370
ERRATA MARCH 1968 .....	373
WANGANUI HORTICULTURAL SOCIETY CENTENNIAL — An Address by A. M. Greig, A.H.R.I.H.(N.Z.) .....	374
GINGERS IN NORTHLAND — BLESSING OR BANE, by Katie Reynolds, F.R.I.H. (N.Z.) .....	378
1969 DOMINION CONFERENCE .....	381
WATTAKAHA SINENSIS — W. R. Sykes, B.Sc. (Hons.), N.D.H.	382
DISTRICT COUNCIL REPORTS .....	384



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# NEW ZEALAND PLANTS AND GARDENS

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

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## EDITORIAL

### TRIAL GROUNDS

In the Waikato District Council Notes for June we read "There is in New Zealand no garden undertaking similar work to Wisley and such an establishment here would fill a great gap in our national horticultural organisation". There are numerous facets to the work undertaken at Wisley but one that we all admire and envy is the Trial Grounds. This is a gap that we hope will be closed in New Zealand in the not-too-distant future. Presently we may safely say that there have never been trial grounds here for ornamental plants on a significant scale.

Many will immediately think what about so and so. If there are any authentic cases of properly conducted trial grounds established in this country we will be only too pleased to hear of them. Certainly there have been trials of ornamental plants from time to time but these have generally been specific in purpose, limited in scope and temporary. We do have various schemes that serve the purpose of trial grounds but generally these should supplement the work of trial grounds and not be substitutes for them. The Institute's Award of Garden Excellence is serving a valuable purpose but how much easier and more effective it would be if there were at least one trial ground in both the North and the South Islands. Mr Mervyn Evans' Rose Analysis on behalf of the N.R.S.N.Z. is also of great value but every rosarian would be pleased to follow the leads given by New Zealand trials of new introductions. Members of every other specialist society has similar thoughts.

Though short of trial grounds, New Zealand is not short of display gardens and laudable though these are, logically they should follow trial grounds rather than precede them. They should show to the public the tried and true varieties proven by the trial grounds. Display gardens

are cheaper and easier to manage than trial grounds and of course being open to the public are popular with all.

Then again nurserymen importing new varieties make their own trials to evaluate them. As every specialist knows not every variety valued overseas and weighed down with overseas trial grounds awards succeeds in our New Zealand conditions. Accordingly our importer endeavours to sift the wheat from the chaff and often varieties are imported under number whilst still under trial in famous overseas gardens. Even so his trials may be misleading and many an importer of new plants must wish for an independent trial ground. A few years ago a well-known North Island nurseryman imported from a famous European hybridist a new floribunda rose. He tried it and dismissed it as just another red floribunda. Imagine his concern three or four years later to find that budwood had reached other New Zealand nurserymen by more circuitous routes, that it was selling well and that many rosarians considered it the best red floribunda.

Can we successfully establish trial grounds in New Zealand for ornamental plants? Such gardens must be run by an independent neutral body but at the same time they should be subsidised by the trade and also by the consumer. They must be managed by properly qualified staff and the rigorous routine involved rules out "amateur" efforts. Amateurs may be members of the judging panels but otherwise the management requires full-time professional attention. In other words properly conducted trial grounds would be a most expensive business beyond the capacity of any individual horticultural specialist society in New Zealand.

However this does not rule out the possibility of trial grounds but calls for a united effort supported by the Government through its departments, the University Schools of Horticulture, local bodies, nurserymen individually and through their trade associations, specialist societies and other horticultural bodies of moment. In other words we do not have horticultural societies as strong as the Royal Horticultural Society or the Royal National Rose Society and capable of conducting their own trials but surely we do have in New Zealand enough interested bodies to be able to organise North Island and South Island Trial Grounds for ornamental plants.

JOHN GOVER.



**R.N.Z.I.H. DOMINION CONFERENCE**

Official opening address delivered by

*the Hon. B. E. TALBOYS, (Minister of Agriculture),*

at the Forty-fifth Annual Conference of the Royal New Zealand Institute of Horticulture, Wellington, 7th March, 1968.

Mr Chairman,

The objects of this institute are very wide—to encourage, foster and improve every branch of horticulture, and in particular to assist and promote horticultural education in every possible way—through the conduct of examinations and award of certificates and diplomas. The work being done by the Institute's Examining Board and by its examiners has earned the admiration of many. I am glad, however, to see that the institute recognises how important it is from time to time to take stock—to inquire into the relevance of the work being done—to be satisfied that the examinations are designed to meet the changing requirements of the developing horticultural industries. It is only in this way that the acceptability of Institute qualifications will be maintained, it is the only way to make sure that the holders of the qualifications will be sought after. It is a good thing that you should have taken the initiative in calling together commercial horticultural producers so that the needs of industry can be defined. Then it will be possible to revise the course prescriptions in line with those needs.

The success of your work as an examining authority depends finally on the recognition employers are prepared to give those who have won through. As far as Government is concerned the fact that an increase in the grant to support this work was made last year is an indication of support. During the past few months the need for a new certificate available to those who sell plants and seeds in retail shops has been recognised and it is intended shortly to gazette a Horticultural Salesman's Certificate, the holder of which should be recognised by the public as a person qualified to give advice in the selection and growing of plants in the district where retail depots are established. While I am on the subject of education I want to take the opportunity briefly to discuss our quarantine regulations and to enlist your support not just here in your conference but also at home in your various societies. I ask your support in your own interests and also in the interests of New Zealand horticulture. You can play a major role in educating others.

Ever since the Department of Agriculture was established in 1892 there has been some type of plant quarantine in operation in this country; but during the past twenty years the significance of quarantine generally has been more widely recognised. With the recent outbreak of foot and mouth disease in Britain most New Zealanders have had

impressed upon them how massive could be the impact of that disease in this country. Now it is not my intention to try to persuade you that some plant disease could be equally devastating in its economic effects; but it requires little imagination to think how plant diseases can wreck the hopes, the plans and the hard work of many people—of people whose living or whose pleasure is vested in plants. It can well be that destruction is the only effective remedy against a disease. I ask you to help make such action unnecessary. The fact is that there are those people who still think they will be one up if they can bring in some plant or seed without the knowledge of the Port Agricultural Officers. Let me give you one or two recent examples: A woman flew back to New Zealand last October. She stated she had nothing to declare. In her baggage was a small citrus plant with roots carefully wrapped in a ball of soil. In the soil around that plant there was the citrus eelworm which does not exist in New Zealand and which would cause serious debilitation of our citrus orchards in the north. Another woman returned from overseas and undeclared plants were found sewn inside cushions which she had with her. You know the Port Agricultural Officers have to keep their wits about them to keep up with the artful dodgers. A rolled up newspaper arrived from overseas. Inside were carefully wrapped but undeclared camellia cuttings. On examination the cuttings were found to be infested with live scale insects with a wide host range but not yet established in New Zealand. Where will we be if this type of "smart" action continues? An air traveller associated with New Zealand horticulture arrived back at Mangere. Customs officers found he was carrying dianthus cuttings and the seed of a declared noxious weed. More examples could be quoted but it is unnecessary.

The current Plant Quarantine Regulations are now up for review and I hope that all horticultural organisations will participate in discussing the amendments and ensure that all the requirements are both sensible and practical and that the community as a whole will give them full and wholehearted support and not give just lip service to an ideal. To be successful, in your interests, we need your help.

Earlier I mentioned the initiative the institute had taken in horticultural education in bringing together the representatives of several commercial horticultural organisations concerned with the institute's standards. Through these discussions I am sure that producers have come to realise that they have many problems in common. The diversity within horticulture—the degree of specialisation, determines that there should be so many separate organisations; temperate fruitgrowers as distinct from citrus and sub-tropical; berryfruit growers as distinct from grapegrowers and wine makers; plant nurserymen as distinct from



vegetable growers or cut flower growers. It is not possible for these diverse economic interests to find expression in one organisation, unless that be a federation, but I am sure that there are many topics in which they have common interest or concern. These are topics which will be better understood and perhaps capable of more ready resolution as a result of discussions in a larger group. Far be it from me to instruct but it may well be that this institute has a wider role to play. In the individual specialties though I am equally sure that greatest progress will be made with strong organisation. Some years ago it was the Prime Minister who as Minister of Agriculture sponsored the Vegetable Levy Act which has placed the New Zealand Vegetable and Produce Growers Federation on a sound financial and organisational footing. The federation is doing most valuable work in studying and solving producers' problems and in bringing joint effort to bear on the promotion of exports. Last year Parliament dealt with the Berryfruit Levy Bill which should help give that industry a stronger base to work from. The development of the full potential of New Zealand horticulture will in large measure depend on the soundness and the strength of the industry organisation.

### **Horticultural Marketing**

Last year Government commenced a study of the possibilities of increased production of horticultural crops with export potential including crops either not grown at present or grown only experimentally. It was apparent that a great deal of factual information was essential and most essential of all, an assessment of market prospects. This exercise must necessarily take some little time, and will, of course, involve close consultation with appropriate growers' organisations and with processors. Very creditable efforts have been made by the horticultural industry in recent years to take advantage of export opportunities and to seek out markets overseas for many kinds of horticultural produce. The use that has been made of air freight is *spectacular*. Between 1966/67 and 1967/68 air freighting of berryfruits increased from 200 to 380 tons (60% increase).

The Government has been eager to help and besides assisting in expanding trade through the Trade Promotion Services has sought to remove any impediments to exports. Three years ago the Government revoked long standing export controls for all fresh vegetables, except potatoes, retaining only those restraints which are necessary to safeguard the quality of produce intended for sale overseas. There had previously been some hesitation in the trade about removing export restrictions entirely, particularly for onions. But the industry responded magnificently. Exports of onions, for example, were less than \$100,000 in value

in 1958. In 1959 and 1960 they still had not reached \$200,000. Exports of onions in 1966/67 however, exceeded \$400,000 and the home market has been kept fully supplied. I know well that there are risks in this—risks that overseas markets can fade with the season—but risks are being taken and markets won. Horticultural produce now accounts for over \$14 million of our export earnings, of which \$12 million is from the sale of apples and pears. There is a field in horticulture to be developed—we must explore all avenues. Perhaps the importance of this is brought home more forcibly when we realise that receipts from wool were down by about \$107 million in the year ended December 1967—down about \$107 million from the year ended December 1966. Maybe it's easier to appreciate what this means when we realise that we spend about \$79 million on the vehicles assembled in our plants and some \$35 million on crude oil. So that the fall in wool is about \$7 million less than we spend on these major imports. We need to be export conscious, conscious of what can be exported or of how our actions affect the fellow who does export.

Another export field in which you can help is undoubtedly tourism. This is growing apace. Last year the number of visitors was up by 12½% to 199,013. And there will be thousands of those who are interested in our flowers, gardens, parks.

### **Tourism**

I am sure that everyone visiting New Zealand either for the first time or on subsequent occasions is delighted to see either from the air or from train, bus or car window, the green grass of the New Zealand countryside. Having been overseas and just returned recently, I can assure you that green is not the characteristic colour of most of the land masses of the world. But the other feature about which visitors comment are the colourful home gardens of New Zealand cities and towns. We are apt to forget or not to realise that New Zealand is able to grow a wider range of plants than almost any other region of the world of the same area.

I welcome the suggestion which has been made that qualified horticulturists, and probably on a part time basis, could work in conjunction with the Tourist and Publicity Department as horticultural hosts or hostesses who will show visitors the horticultural highlights of a region which can be included in a group itinerary. This effort should attract tourists and earn for New Zealand the name of "horticultural paradise of the Pacific." If this institute guarantees the horticultural qualifications of these hosts or hostesses I know you will make your mark in the public esteem and do a great service to this country.



## MEMORIAL TO THE LATE MR M. C. GUDEX DEDICATED

Mr Gudex was an outstanding personality of the R.N.Z.I.H., prominent at both district and national levels, his particular interest being the study and preservation of our native flora (see his article, "Variations in the New Zealand Bush"; our Vol. III, No. 1, December, 1958). An Associate of Honour of long standing and a winner of the Loder Cup, he was awarded the M.B.E. for his distinguished services in many fields, including horticulture, in 1962.

We are indebted to the "Waikato Times" and the contributor of the Waikato District Notes for the following information.

The memorial, a rugged stone monolith, was dedicated before an assemblage of five hundred by the Rev I. Purdy, of St. Andrew's Church, Hamilton, and was unveiled by Mrs M. C. Gudex. It stands in a seven-acre memorial park, Sanatorium Hill, Maungakawa Scenic Reserve and 1100ft above the Waikato Valley. From the stone steps is a view of the whole central valley with the beautiful town of Cambridge in the foreground.

Mr Gudex was one of those responsible for the establishment of the Maungakawa Reserve, planting a grove of kauris some years ago near the site of the monolith. Mr Gudex taught for most of his career at Hamilton High School and was a nationally recognised authority on horticulture, especially our native flora. Many have helped develop the park and memorial and with further work the area should become a show place of the Waikato.

The president of the Waikato District Council, R.N.Z.I.H., Mr R. T. Fear, described Mr Gudex as one of New Zealand's outstanding scholars and said "This memorial will be a permanent reminder of a man who gave much of himself for the benefit of humanity".

Mr T. C. Henderson, Chairman of the Waikato County Council, stressed that a vantage point such as provided by the memorial could help those visiting it to regain perspective and that the park could become one of the most beautiful reserves in the Waikato.

## A HORTICULTURAL ANALYSIS OF NEW ZEALAND PLANTS

An address given at the Conference of the Royal New Zealand Institute of Horticulture held in Wellington on 7th March, 1968, by  
*R. H. MOLE, F.R.I.H.(N.Z.), Wellington*

It is somewhat presumptuous of me to have called this address "A Horticultural Analysis of New Zealand Plants." It is true I wish to discuss the merits and demerits of native plants for garden use, but a period of only 5½ years in getting to know and grow some of these plants is hardly long enough to enable anyone to give a full appraisal on this subject. For example, the opening sentence in the preface of Dr. Cockayne's book "The Cultivation of New Zealand Plants" written in 1923, says "this book is the outcome of some 35 years personal experience in the cultivation of the wild plants of this country." Now, in that period of time, a man of the calibre of Dr. Cockayne could hardly have failed to reach definite conclusions with regard *firstly*, to New Zealand plants suitable for cultivation and *secondly*, he would have learned, by trial and error, the methods of culture best suited to many of these plants.

I, then, have been able to glean cultural information from Cockayne's book, further useful information has been obtained following discussion with some of to-day's growers of native plants, having visited their gardens in different parts of New Zealand, whilst my personal experience of handling and growing the wide range of plants now assembled at the Otari Native Plant Museum, Wellington, forms the major contribution to my knowledge, thus far, with regard to any horticultural analysis of New Zealand plants.

Despite the passage of some 45 years since the publication of Cockayne's book, it is, to my knowledge, the only book to-day which deals with the cultural requirements of such a wide range of our native plants. What has changed since then is the wealth of literature available in New Zealand to-day which deals comprehensively with the culture of *exotic* plants, and, in conjunction with this, a terrific build up of these plants has occurred, the exotics, in some cases, growing better in New Zealand than in their own native land. Dr. Cockayne, and others before him, sang the praises of New Zealand plants, and rightly so, but in those days there was not such competition for a place in the home gardens of this country as exists to-day between New Zealand natives and their often more showy counterparts from overseas. I think it would be true to say that, since the early 1920's, the number of different exotic plants grown in New Zealand has more than doubled, and a



rough tally of the exotics present in this country to-day, excluding cultivars, seems to exceed 10,000 species and allied botanical forms.

The outside world first learned about the plants of New Zealand following the exploits of Sir Joseph Banks and Dr. Daniel Solander, both of whom were on Cook's ship, the *Endeavour*, when she dropped anchor on 8th October, 1769, in Poverty Bay. Among the first collections made by these men, this time in the vicinity of Opotiki, were plants of *Clianthus puniceus* (Kaka Beak) which, as Dr. Solander remarked, "was found cultivated by the natives near their dwellings." It would seem, therefore, that the Maoris, even 200 years ago, appreciated this attractive plant—as indeed do many gardeners to-day.

Based on the work of the earlier botanists, recent taxonomic workers tell us that there are about 2000 species of New Zealand plants. About the same number of species is found in Britain. However, compared with the United Kingdom which has an endemic element of less than 1%, over 80% of the species of flowering plants, and each of the 20 species of conifers in this country are endemic. In addition, about one third of the 164 species of ferns and fern allies described in New Zealand are found growing wild in no other country. The unique characters developed in so many New Zealand plants create a ready interest to botanists and plantsmen, but the fact that many plants are endemic does not mean that they will automatically be grown by the average home gardener in New Zealand.

What type of plant then is the average home gardener likely to choose for his or her garden? Well, of course it's difficult to answer that one, since choice will depend on so many factors. Perhaps a point that home gardeners would agree upon more than any other, is that a plant should not need much attention once established, and to go on from this I suppose the *ideal* plant would be one which would grow in any type of soil, any orientation, need no watering once established, be fast growing to the desired dimensions, be long-lived and above and beyond these attributes we would like a plant to have attractive foliage, flowers (scented of course), and attractive fruits—the latter being edible—and so on. Well, what has New Zealand to offer in plants that meet many of these exacting requirements?

### Floral Appeal

On the issue of attractive, really showy flowers I feel New Zealand does not have a great deal to offer. This not only applies to the flowers of trees and shrubs but also to the majority of perennial herbs, and certainly does it apply to annuals, of which the most attractive is perhaps *Hibiscus trionum* (the Puarangi as depicted on the 3c stamp)—but even this plant has been reported as doubtfully indigenous.



What is probably New Zealand's showiest annual is seen in the cream, purple blotched, petals of the diurnal flowering *Hibiscus trionum* (Puarangi).

(Photograph—R. H. Mole)

White to cream or yellow flowers are dominant in the flora, as indeed they are in the plant kingdom as a whole. I concede that when seen together in the wild the scene can be truly spectacular—for example to see thousands of white mountain daisies in bloom in the herb fields. Under garden conditions though, I consider the merits of the *Celmisias* are best judged on their foliage appeal. The perennial, white flowered, endemic *Ourisias* are certainly not without appeal—especially if seen growing in large drifts. Masses of white daisy type flowers seen on garden specimens of *Olearia cheesemanii* can be quite eye catching, and for floral appeal I would classify this shrub as one of the best out of the 32 endemic species of *Olearia*.

The pure white flowers of many species is a point in their favour—for example the flowers of the New Zealand Iris (*Libertia spp.*); the only member of the true flax family *Linum monogynum*; or the fresh white flowers of the Mt. Cook Buttercup, *Ranunculus lyallii*.

### Yellow Group

Yellow to gold coloured flowers massed in nature are perhaps best seen in the perennial Maori Onion, but under garden conditions I find



the flowers of the various species of *Bulbinella* short-lived. In yellow flowered, woody plants pride of place must surely go to the Kowhais—*Sophora microphylla* and its near relative *S. tetraptera*. Although I consider the flower colour of these trees is nothing out of the ordinary—flower size, plus their pendulous, proliferous habit, does create a most pleasing display, for a short time, in the spring. Another factor which enables the Kowhai to show off its flowers, is the tree's semi-deciduous nature, particularly in the case of the larger leaved species. The ever-green nature of New Zealand trees and shrubs is an undoubted asset in other spheres of gardening, but this habit does tend to mask any floral attributes. In Wellington, for example, only about 12 species of woody New Zealand plants are deciduous, and of these only a few flower when the plant is more or less leafless. Referring again to the Kowhai, there is a dwarf form of *S. tetraptera*. In Wellington it reaches a maximum height of 4-5ft., is easily raised from seed, with flowering commencing after only 3 years. Reported to have its origin on Banks Peninsula, it may prove hardier than its taller relative and, if supplies of uniform stocks become more readily available, it may be more widely used in the future.

Just a few more words dealing with yellow flowered species. Another plant of rather small stature is *Pomaderris kumeraho* (Golden Tainui); an attractive plant showing off well its yellow flowers in early spring. Finally, having yellow flowers, I will mention *Senecio huntii*—a most attractive small tree from the Chatham Islands, now being stocked by the trade.

### Blue Group

To deal further with coloured flowers, pride of place for the best herbaceous plant in the flora having blue flowers I feel should go to *Myosotidium hortensia*—the endemic Chatham Island Forget-me-not. The Rev. Colenso is commemorated in another plant having blue flowers. I refer to the sparsely known and grown, softly woody perennial *Colensoa physaloides* (sometimes referred to as *Pratia physaloides*). It is a species from the northern extremities of the North Island, and from the Three Kings and Poor Knights Islands. Although the flowers do tend to hide themselves behind the terminal leaves, this is a worthy garden plant for frost free areas, the sizable blue coloured fruits (about the size of a cherry) add further merit to this sub-shrub.

In the tree and shrub section, perhaps the best examples of worthy garden plants displaying lavender, light blue or purplish flowers are seen in Poroporo (*Solanum laciniatum*)—rather short-lived but useful as a filler; in *Parahebe hookeriana* and *P. linifolia*; and in the hebes, apart



*Hebe townsonii*, a species distinguished from all others by the two rows of domatia present on the undersurface of the leaf.

(Photograph—R. H. Mole)

from cultivars, we have for example the species *H. pimeleoides*, *H. elliptica*, *H. macrocarpa* var. *latisejala*, *H. diosmifolia*, *H. laudiana*, *H. hulkeana*, *H. speciosa*, *H. obtusata*, and the less well known *H. benthamii* from the Auckland and Campbell Islands. I must add, at this point, that these islands which are at the southern extremity of the New Zealand Botanical Region contain a few other species which bear flowers in shades of red to purple. These plants are found in such genera as *Pleurophyllum*, *Anisotome*, *Gentiana* and *Myosotis*. However, as far as I am aware none of these Antipodean species are available through the trade, and their culture at lowland levels in the more northerly latitudes of this country I would describe as difficult.

I will conclude this section of plants which bear bluish coloured flowers with the unusual, and rare, New Zealand Tree Broom—*Chordospartium stevensonii*—a small tree of graceful, pendulous habit which produces pale lavender, pea shaped flowers from leafless branchlets.

### Red Group

Most popular in shades of pink and red would be, I think, Kaka Beak; the Pohutukawa (*Metrosideros excelsa*); the Kermadec one (*M. kermadecensis*); and the Southern Rata—*M. umbellata*. The best

of the climbing ratas I consider is *Metrosideros carminea*. Clinging like ivy, this plant is most useful for covering stone, brick or wood surfaces. Unfortunately it is rather frost tender.

Where shades of red are concerned, Manuka cultivars also have a high rating, especially *Leptospermum scoparium* 'Red Damask' and *L. scoparium* 'Martinii', whilst the hebes come in again with for example *H. speciosa*, *macrocarpa* var. *brevifolia*—plus certain cultivars. *Vitex lucens* (Puriri) is showy in flower and fruit, and what's more, one or the other is usually present the whole year through. Not so well known, but worthy of a place in the home garden is the leafless Christmas flowering New Zealand Broom—*Notospartium carmichaeliae*. with no true leaves present the pink flowers show up conspicuously. By the way, I have found that seeds, sown in mid-April, took only five days to germinate, and the leafy seedlings grow quite fast. For the rock garden, or dry rocky bank, the pink daisy type flowers of *Disphyma australe* show up well. Another plant suitable for the rock garden is *Geranium traversii* var. *elegans* from the Chatham Islands—pink flowers about 1in. diameter are produced freely in spring and summer and show up well against the silvery, bluish-green leaves. Finally, another shrub with warm coloured flowers ranging from yellow to orange with reddish markings; I refer to *Rhabdothamnus solandri* (Taurepo)—flowers are produced practically the whole year through, but it's an endemic species that prefers the warmer areas of New Zealand.

Whilst I remarked earlier that I felt pride of place among herbaceous plants having blue flowers should go to the Chatham Island forget-me-not, I think the most flamboyant-looking perennial in bloom is *Xeronema callistemon*. Preferring austere soil conditions, this liliaceous plant producing its racemes of red flowers in spring will, I think, find a place in many home gardens in the warmer areas of this country in years to come. I note that plants are now available through the trade. This is just as well, since although plants are easily raised from seed, it may take them a long time before they flower. One factual report I have states that a plant grown from seed at Te Aroha took 22 years to flower. However, of some consolation is a more recent report which stated that a plant of *Xeronema callistemon* growing in the Auckland area took only 12 years to flower from seed.

### Orchid Species

Well, at least the New Zealand species of orchids do not take that long to flower, but in this New Zealand group are the flowers worth waiting for anyway? About 80 species of orchids grow wild in the Dominion, but I must confess that I have no great horticultural regard

for the majority of them. Many of the terrestrial forms I find difficult to maintain under garden conditions—due perhaps to a lack of a suitable mycorrhiza—while their aesthetic appeal leaves, with me, much to be desired. Certain species of *Corybas* and *Pterostylis* I find botanically interesting, whilst the blue flowered species of *Thelymitra* do have some charm. Among the epiphytes, the diminutive *Bulbophyllum pygmaeum* is certainly intriguing, but my horticultural vote goes to the two species of *Earina*. The pendant spring flowering *E. mucronata* and autumn flowering *E. autumnalis*. Each offer comparatively easy culture and provide numerous dainty, fragrant flowers.

Time will not permit discussion on the floral attributes of other New Zealand plants, though perhaps the more highly coloured members of the flora have already been mentioned. If this is so, it will be realised that even with a generous helping from the more colourful garden forms, the overall number of richly coloured flowers in New Zealand plants is small and we need to look for other characters which would help promote the use of New Zealand plants in the home garden.

### Scented Flowers

Nature is a great leveller and whilst the New Zealand flora contains few plants with large individual colourful flowers, it often makes up for this by producing a large number of smaller flowers. Sometimes these are quite highly scented; for example in many species of *Pittosporum*, in the fluffy flower heads of Rangiora, in some of the *Olearias*, particularly *O. paniculata*. Certain species of *Dracophyllum* produce fragrant flowers, for example *D. filifolium*. At the top of my list of fragrant New Zealand plants I put the *Alseuosmias*. I have found them not to produce their flowers in masses, but lack of numbers in this case seems to be made up by the intensity of fragrance from each flower—a fragrance reminiscent of Gardenias.

### Hedges and Shelter Belts

In recent years several notable publications in book form have done much to introduce to the general public many of the more attractive and interesting plants of the New Zealand flora—but I feel the eyes of the average home gardener are, nevertheless, blinded by the array of more colourful plants from overseas, a blindness which, in many cases leads to contempt for the less colourful New Zealand plants. However, as mentioned previously, one notable asset of New Zealand trees and shrubs is their evergreen nature—a facet which is appreciated by gardeners in New Zealand as well as overseas. Evergreen plants, as we know, can be well utilised for hedges and shelter belts. If the same plants are not too fussy over soil conditions, will take pruning and withstand strong



winds and salt spray, then indeed they are certainly of garden worth. Plants that fill most of these requirements are fairly numerous among New Zealand natives. I will mention just three species which are eminently suitable, firstly, for medium to tall formal hedges—say 3-9ft. tall. These are *Coprosma repens* (Taupata), *Pittosporum crassifolium* (Karo) and the more hardy *Olearia paniculata*. For the smaller formal hedge, say up to about 3ft., forms of *Corokia cotoneaster* seem to be gaining popularity and should prove hardy in most places. *Hebe diosmifolia*, in nature confined to districts north of Whangarei is quite hardy to occasional frosts of 10° in Wellington, growth is compact and a generous display of white to mauve flowers occurs in the spring. Thirdly, and perhaps less well known is *H. glaucophylla*—a compact growing shrub found in southern Marlborough to Mid-Canterbury which should prove hardy in most areas of New Zealand. In fact, a cool site would be preferable for this species.

Large, informal, hedges can be catered for by growing the well known *Pittosporum eugenioides* (Lemonwood), *P. tenuifolium* (Kohuhu), *P. ralphii* and *Olearia albida*. Despite the fact that, in New Zealand, this olearia is found mainly in coastal bush areas and no further south than from about Taranaki to Gisborne, this plant is reported as hardy outside at Kew in average winters.

For a shelter belt around a large garden one of the following may prove suitable: *Dodonaea viscosa* (Akeake), *Hoheria populnea* (Lacebark), *Pomaderris apetala* (Tainui)—a plant suitable for very poor sandy soil. Both the Kermadec and mainland pohutukawas would be suitable, especially for the warmer areas, whilst *Griselinia littoralis* (Kapuka or Broadleaf) would be ideal for coastal situations. In fact, for maritime situations in Ireland and the west coast of Scotland, there is no finer plant now being used for the purpose of shelter than *Griselinia littoralis*. Having proved hardy at Kew, *Olearia traversii* should tolerate most areas of New Zealand. This is another plant most suitable for poor soil conditions and so useful again for coastal planting. In addition to community planting, practically every species mentioned as suitable for a windbreak, could also be well utilised as a specimen tree or shrub. Finally, with reference to badly drained areas, Common New Zealand Flax (*Phormium tenax*) could be utilised for shelter whilst steps are undertaken to try to overcome the drainage problem elsewhere in the garden.

### Longevity

We read that the evolution of plant life in New Zealand took place for a long time in the absence of browsing animals, but the flora, without assistance from chemical sprays or dusts, has evolved despite eternal

attacks from insects and no doubt many disease organisms too. I understand much of the Waitakeres, north of Auckland, is infected with *Phytophthora*, but the wild plants there seem rather tolerant of these lethal organisms. Whilst realising that a plant growing outside its natural environment is more prone to attack from pest and disease, I feel that, provided a suitable spot is chosen in the garden, New Zealand plants generally will enjoy longevity and are less likely to be *mortally* affected by pest and disease than many of their exotic neighbours.

### Ground Covers

Coastal native plants, together with those habitating the higher regions, have evolved in the presence of high wind. Others have developed in sand dune or scree where they help to stabilise such areas. It is not surprising to find many of these plants are of low stature—some forms being merely habitat modifications, others genetically determined. In the latter category we have some of the true mat plants, creeping and rooting in scree, rock crevices, or in what is often an apology for soil. Worthy of a place in the rock garden *for ground cover* are some of the Bidibids, those species of *Acaena* with spiny, coloured fruits; *Disphyma australe* (mentioned previously); *Helichrysum bellidioides* with its everlasting type of flower and silvery leaves; *Pimelea prostrata*—one of the Daphne family; many of the *Raoulia*s, such as *RR. hookeri*, *grandiflora* and *tenuicaulis*. Further mat plants are found in *Pratia arenaria* and *P. angulata*. These plants, and others like them, are mostly easy to grow and their ground cover affords a cooler root run for the more woody plants of high elevation. Furthermore, several New Zealand mat plants are already being utilised in place of grass for a lawn. For example, *Cotula haastii*, *C. perpusilla*, *C. squalida*, *Hydrocotyle moschata* and *Dichondra repens*, whilst I know for a fact that *Pratia angulata* completely covers the greater part of the lawns at the Royal Botanic Garden, Edinburgh. In summertime these lawns are absolutely white with the small flowers of *Pratia* and if at any time the grass, because of sunshine or excessive wear, does go brown, it never goes brown in any place where the *Pratia* has established itself. Also, I understand bowling greens have been established in this country, using one of the wild species of *Plantago*.

Other *low-growing* species suitable for the rock garden are *Dacrydium laxifolium* (Pigmy Pine)—an endemic plant reported to be one of the lowest growing conifers in the world; the grey leaved hebes from the mountains of Nelson, collectively called *Hebe albicans*, make attractive, easily grown specimens for rockery or border; *Mazus radicans*—a member of the snapdragon family—hugs the ground and produces cream coloured flowers towards the end of October. Forming a low shrub,

I am sure many of you will have seen *Pachystegia insignis* growing out of the limestone cliffs which line the main east coastal road between Blenheim and Kaikoura. Large, thick, evergreen leaves, glossy above, felted beneath, make this species a most worthwhile and easily grown garden plant. The prostrate forms of Manuka are attractive as well as being ideally suited to provide ground cover in difficult growing conditions. For example, the newly named cultivar *Leptospermum scoparium* 'Wairere.'

Low growing creeping and rooting hebes are found in the species *H. chathamica*, which produces its white to purplish flowers towards the end of December. This is a plant that really revels in a salt laden atmosphere. Withstanding a similar environment is *H. obtusata* from the Auckland west coast—it is a useful species because its pale bluish/white flowers are produced continuously from about the end of January right through to June or July. Thirdly, I will mention *Hebe decumbens*—a really hardy customer from the mountains of Marlborough, Nelson and North Canterbury. It has small leaves with red margins and bears tight clusters of pure white flowers towards the end of November.

The deciduous *Fuchsia procumbens* from North Cape makes a useful rock garden plant (or alternatively an attractive basket plant). It is quite hardy in Wellington and shares the distinction along with *F. arborescens* from Mexico in being, as far as I am aware, the only species to have erect flowers. Adding further merit to *F. procumbens* are the large, bright red berries up to about  $\frac{3}{4}$  in. diameter.

### Fruits versus Flowers

Talking of fruits, it would be true to say that, in many cases, this feature of a New Zealand plant is often more attractive than the flower. For example, in each of the 45 species of *Coprosma*—the fruits, called drupes, range in colour from white through orange to dark red and from pale blue to almost black. Most of the 10 species of the perennial herb *Gunnera* have coloured fruits in shades of yellow to bright red. The New Zealand *Gunneras* are certainly dwarfs compared to the popular giant *Gunnera manicata* from Brazil. It would perhaps prove of interest to grow the two types side by side in the garden, the New Zealanders and the South American species share a liking for damp situations. The drupaceous fruits of *Myrsine* are mostly purplish in colour, the better known species being perhaps *M. divaricata* and *M. nummularia*. More small drupes are produced in the genus *Nertera* in a colour range similar to *Gunnera*. Further examples of coloured fruits are found in the violet/blue berries of Whiteywood and the bright red berries of *Alseuosmia*, in the large black drupes of Tawa; the well known orange fruits of Karaka; the graceful pendulous almost black

fruits of the poisonous Tutu; the edible raspberry like fruits of the prostrate relative of the Bush Lawyer, *Rubus parvus* and, if you fancy them, the equally edible New Zealand Passion-fruit *Tetrapathaea tetrandra*—bright orange on the outside. The perennial *Dianella intermedia* (Turutu) is also quite attractive when it produces bright blue berries held on very slender stalks.

The most attractively coloured fruits in New Zealand conifers are found, I consider, in the genus *Podocarpus*, two of the best being *P. ferrugineus* (Miro) and *P. dacrydioides* (Kahikatea).

Low growing plants with coloured fruits can be seen in species of *Cyathodes*—for example *C. colensoi* and *C. fraseri*; in *Gaultheria depressa*; *Pernettya macrostigma*; in *Pentachondra pumila* and in the dioecious low growing *Coprosma*s such as *C. petriei*, *C. pumila* and *C. cheesemanii*.

There I must end the list of New Zealand plants whose fruits are mostly far more attractive than their flowers. Taking this group as a whole, I feel, that unless we are considering the plant connoisseur, or the minority of landowners fortunate enough to possess a large section whereon native plants are already growing, it is unlikely that the average home gardener would give space to many, if any, of the plants I have named. This is not meant to imply that the New Zealand home gardener does not know a good plant when he sees one. Rather does it mean that, whilst I can see merit in these New Zealand plants, at the same time I do not consider them to be exceptional for use in the average home garden. Their ultimate large size would be detrimental in some cases—for example the Karaka, Miro, Kahikatea and Tawa. A further limiting factor is the dioecious character as displayed for example in Whiteywood, New Zealand Passion-fruit and most of the *Coprosma*s.

One of the best groups of plants which I feel are of a manageable size for the home garden, are easy to grow, long-lived and which bear masses of attractive red or yellow fruits are the various forms and hybrids involving *Corokia cotoneaster*. Of course, in this instance, the star-shaped, yellow flowers produced in spring are a further asset.

### Foliage Appeal

I would like to comment briefly now on the issue of foliage appeal, dealing initially with leaf colour. The dominant evergreen nature of New Zealand trees and shrubs does not lend itself to any major changes in leaf colour as the seasons change. Absent, therefore, are plants which provide striking autumn leaf colour such as seen, for example, in the exotic deciduous maples, *Liquidambar styraciflua*, *Parrotia persica*, *Taxodium distichum* and so on. But at this point I must mention that certain New Zealand species do exhibit evergreen foliage which might





*The grey felted leaves of Celmisia incana provide all the year round appeal to this rather easily grown mountain daisy.*

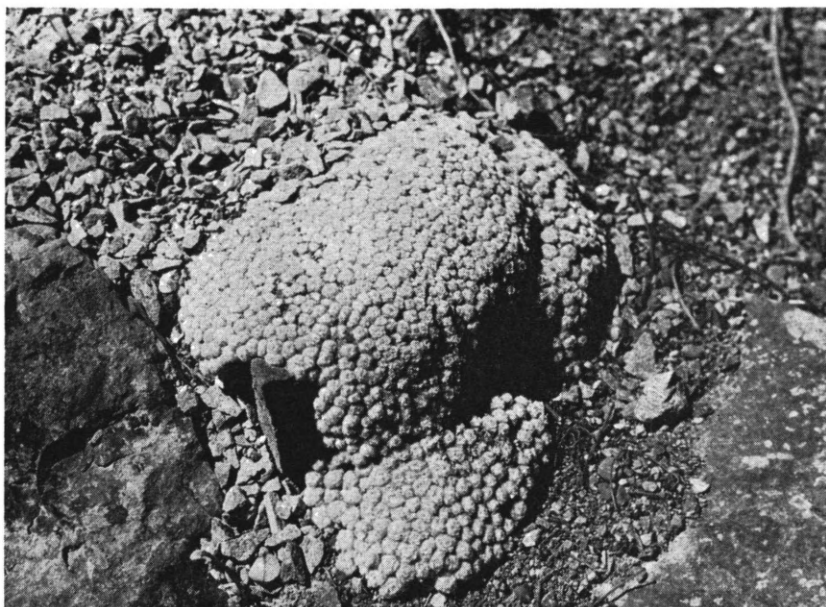
(Photograph—R. H. Mole)

be termed symbolic of autumn. For general garden use I am thinking of some of the whipcord hebes, for example, the yellow tones seen in *HH. tetragona*, *lycopodioides* and *armstrongii*, whilst in this group my favourite species is the copper coloured *H. ochracea* from the mountains of Western Nelson. Also on the credit side, and when considering grey foliage plants, it is my opinion that *Senecio compactus*, *S. greyi* and *S. laxifolius* constitute three of the best, easily grown small shrubs to be found anywhere in the world. Flower production should be sacrificed if the emphasis is to be on foliage appeal and a compact shrub. Next to the hebes *Senecio laxifolius* is probably more widely grown in England than any other New Zealand plant. Perhaps I should qualify this statement and add that, judging from latest reports, the biggest take-over bid by any New Zealand plant in the U.K. seems to be by the tiny willow-herb, *Epilobium nerterioides*. Apart from being grown as a rock plant and from there spreading to other cultivated areas, it has appeared in such out of the way places as on moorland roads in the North Country to tin mines in Wales and in deserted hamlets in the Scottish Highlands. *Epilobium nummularifolium* is the most troublesome willow-herb with

me, though I feel most of New Zealand's 50 species of *Epilobium* are liable to get out of hand. However, I must admit to a liking for the little tufted clumps of such species as *E. melanocaulon*, *E. brevipes* and *E. glabellum* which display small, mainly reddish purple leaves and stems, and also *E. rostratum* with its pinkish-white flowers crowded among leaves and stems of pink to grey. Continuing with the smaller members of the flora, and as mentioned previously, I consider the leaves of many species of *Celmisia* to be quite attractive—for example, *CC. traversii*, *coriacea* and *monroi*. The greyish white leaves of *C. incana* are certainly eye-catching, especially when seen wild in patches more than a yard across. Incidentally, the *Celmisias* are very popular plants with alpine enthusiasts in Britain and in Edinburgh this group of plants seems to do better than any other New Zealand group. I suppose the fact that *Celmisias* are predominantly mountain dwellers, where cloud and rain are not infrequent, may account for the fact of them doing so well in Scotland. Conversely, lack of long periods of hot sunshine may be responsible for many New Zealand trees and shrubs not doing so well in the U.K., such conditions preventing the wood from ripening satisfactorily.

Referring again to trees and shrubs, the red stained leaves of the cool loving *Pseudowintera colorata* make it worthy of inclusion in this section. Also of merit is Red Beech (*Nothofagus fusca*), surely the finest species of the genus in New Zealand. The very large paddle shaped leaves of Puka (*Meryta sinclairii*) make this frost tender, but otherwise easily grown tree, a worthy garden plant. Not difficult of cultivation, at any rate in Wellington, are some of the larger leaved species of *Dracophyllum*—for example, *D. latifolium* and *D. traversii*. Both plants display graceful, arching, long, narrow leaves which are sometimes wholly or partly coloured deep crimson. The smaller growing *D. recurvum* also carries attractively coloured leaves.

The tufted habit present especially in the terminal growths of the taller *Dracophyllums* is exhibited also in some of the New Zealand *Asteliads*, a group of plants deserving, I feel, of much wider use in the parks and gardens of this country. For example, *Astelia nervosa* produces long, sword-shaped leaves, often over 2ft. long, which arch gracefully. In some forms of *A. nervosa* a silvery sheen of fine hairs adds to the plant's pleasing appearance. The giant of the genus seems to be *A. fragrans* with leaves arching and extending up to 10ft. long, but the most ornamental species is probably *A. skottsbergii* from the mountains of Western Nelson. Young leaves of light bluish green are covered with shining, white scales, the blades later extending to about 2ft. long and changing to yellow/green.



*A young plant of Raoulia eximia gradually forms a hummock over a large stone in a lowland rockery.*

(Photograph—R. H. Mole)

My short list of attractive foliated species can be easily supplemented by mentioning the many, easily available coloured leaved cultivars of New Zealand plants. For example, the cultivars of Akeake, Coprosma, Griselinia, Hebe, Karaka, Lacebark, Pittosporum, Pohutukawa, Rangiora and Ramarama. In this section I must also mention the useful house-plant Parapara (*Heimerliodendron brunonianum*). Finally, I wish to refer to the popular coloured leaved forms of flax. For example, *Phormium colensoi* 'Tricolor' and, in the newly named cultivar 'Smiling Morn,' with its bright pink leaves, we have what is probably the most highly coloured perennial of any New Zealand cultivar.

### Alpine Gems

In what little time remains I must mention a few of what are sometimes called the 'alpine gems of New Zealand.' If you can obtain them you will have achieved something—if you are able to grow them satisfactorily at lowland levels in this country you will have achieved a great deal more.

Mention has been made already of the Mt. Cook Buttercup and

certain species of *Celmisia*. Other plants I have in mind are New Zealand's Vegetable Sheep, such as *Haastia pulvinaris*, *Raoulia eximia* and *R. rubra*. New Zealand Edelweiss as seen in those very attractive plants *Leucogenes grandiceps* and *L. leontopodium* are two most worthy garden species. *Helichrysum selago* and, better still, *H. coralloides* are two more desirable and intriguing plants. These are just a few of New Zealand's alpine gems, each of which is certainly held in high repute overseas, as well as in New Zealand.

### Noteworthy Endemics

I said earlier in this talk that because a plant was endemic did not necessarily guarantee it a place in the home garden. On the other hand we are now aware that this country has nurtured many unique plants and some of them, if they were more readily available, could hardly fail to arouse interest. In addition then to the endemics already mentioned I would recommend for garden use some of the 39 endemic species of *Aciphylla*—commonly called Spear Grass or Wild Spaniard. Looking like mammoth Vegetable Hedgehogs (as in *Aciphylla aurea*) several species have narrow stiff leaves which end in a rigid point as sharp as a bayonet. *A. colensoi*, with leaves having a reddish/orange mid-rib, has a bizarre beauty, whilst *A. scott-thomsonii*, the largest of the genus, produces huge spiny tussocks to about 10ft. tall. The main deterrent to successful culture of these plants seems to be their liability to rot off at ground level.

Juvenile foliage is markedly different from the adult form in many New Zealand plants. This is well illustrated in the Lancewoods, *Pseudopanax ferox* and *P. crassifolium*. They are too well known to warrant description, though I have failed to see many used in home gardens, yet feel their unusual juvenile form, plus ease of culture, merit enough to fit them into a shrub border or for planting as specimen trees. At least they might be retained until their adult leaves appear—a process which might take as long as 35 years!

With regard to other endemics I can mention only briefly the unusual, leafless, yellow flowered *Clematis afoliata* and the large white flowered *C. paniculata*; the ornamental and conspicuously flowered Cabbage Trees such as *Cordyline australis*, *C. banksii* and *C. indivisa*. For the larger garden the New Zealand Kauri, the Rimu, or specimens of *Libocedrus plumosa* (the Kawaka) each make attractive specimens, especially in their early years.

A fine asset of this country is the extensive range of ferns but very few gardeners I have met seem enthused over this ancient tribe of plants.



Their often graceful habit and delicate lacy patterns seem to pass unheeded. Not all ferns need shelter to grow satisfactorily, several species actually prefer an open situation such as in a rockery.

Equally graceful are many of the tussock grasses, but these, I think, are treated perhaps with even more contempt, though I did see wise use made of these grasses in certain rock gardens constructed near Lake Tekapo.

There I must end my detailed analysis of what I hope you will consider is a fair cross section of the New Zealand flora. I trust you will bear with me if I have failed to mention your favourite plant or group of plants.

### Conclusion

To sum up briefly, I would say the New Zealand flora has a quiet beauty, all its own in many instances because of the endemic factor. The hebes, which combine ease of culture with appealing foliage, form and flowers seem to be top favourites to-day and are likely to remain so in the future as nurserymen build up a wider range within this group.

If flowers other than white were present in more New Zealand plants, I don't doubt it would increase their demand. It would certainly be eye-catching, for example, to see a red or blue *Celmisia*, whilst the New Zealand *Gentians* are singularly lacking in colour. But then, I suppose this is what makes them, and other genera, different from their counterparts overseas. Also, we must not forget that flowers are transitory and, to me at any rate, colour, shape and arrangement of foliage really count far more.

Another factor which means a great deal to me is the necessity to know where in nature the plants are found. This information adds to my understanding of the plant—it's no longer just a name or a number. In instances where I collect the plants myself (or take seed or cuttings) I become aware of the company the plant keeps, its orientation, the type of soil which provides its food and so on. These things help to give me a background to the plant's existence. This is far different from selecting a single specimen from the assembly lines of a modern nursery.

But not everyone has the time, nor inclination, to go plant hunting and the specimens that furnish their garden must be obtained through the trade. Sometimes the catalogue will provide a little background to the plant's history and distribution. Such brief remarks can be extended considerably, if the urge is there, by reading about New Zealand plants in the many fine books available to-day.

New Zealand plants have much utilitarian value, both in the garden and in floral work. Quite often New Zealand plants are called upon to fill the gap in difficult growing situations. They have then a tough,

rugged, durable character. If one is prepared to learn more about these characteristics this should lead to a greater respect for these qualities. After all, in most humans visual attraction is, or should be, of secondary importance to character which really counts in the long run. New Zealand plants *do have character* and if one takes the trouble to look beyond the facade of flowers in order to study and fully appreciate a plant's architectural and probable utilitarian value, there is the likelihood that any floristic beauty will eventually take second place anyway.



## A FEAST OF RHYTHMIC COLOUR

*RENÉE OTTAWAY, Auckland*

Each year it seems that the ultimate perfection in Floral Art has been attained at the Floral Festival, an extremely popular attraction at Auckland's annual Festival of the Arts. This display is presented by the many Garden Clubs around the City.

Due to the Festival being held in March this year, instead of May as previously, many of the more flamboyant summer flowers have joined the Autumn blooms and foliage, resulting in a breath-taking spectacle in Auckland's Town Hall.

This year's theme—"Rhapsody in Flowers", might at first thought, appear difficult to interpret, but the floral artists have once again demonstrated that their Art can proudly take its place in the Festival. An unusual feature this year was the broadcasting of appropriate music during the display.

The stage presentation "*Waltzing with Strauss*" truly conveyed the gaiety and glittering magnificence of that era in Vienna. White and gilt rotundas contained the sets of arrangements representing the various waltzes. "Blue Danube" immediately caught the eye with its huge gilt harp as background for deepest blue hydrangeas, white carnations and chrysanthemums. The "Emperor Waltz" was represented by massed scarlet nerines and zinnias, mingled with violet and mauve delphiniums.

Exquisite arrangements of white chrysanthemums, palest pastel pink roses and carnations typified "Voices of Spring" while "Roses of the South" was of course depicted by deeper pink and crimson roses. To the right a large pedestal vase contained a spectacular gold and white arrangement featuring gladioli, chrysanthemums and white ostrich plumes, set off by cool green Bells of Ireland. Plum coloured

chrysanthemums shading to pale pink carnations were titled "Wine, Women and Song".

Set around the hall were twelve other bays each having its own musical theme. "*Marche Militaire*" was a brilliant fanfare of scarlet nerines, gladioli and anthuriums in brass cartridge-shaped containers matching the bold line of the band instruments in the background.

Much more muted was "*Songs my Mother Taught Me*" a homely setting of antiques with cushions of rich purple asters and blue hydrangea petals, mingling with austere pink Belladonnas, backed by frosty white candles and silvered ribbons.

"*South Seas Music*" captured the mood of tropical islands with its brilliant crotons, strelitzias, wood roses and palms.

A really eye-catching effort was "*Pops*"—a very modern arrangement of scarlet and gold blooms set in Op Art black and white jazz band instruments.

"*A Quiet Green Corner*" pointed out the value of trees and shrubs in any garden.

"*Songs of the Maori*" also had their place in a simple framework of matting, flax and carvings.

"*Nocturne*" was very effective—a moonlight scene using white and lavender gladioli, and white cyclamen which surrounded two charming statues, "Youth" and "Spirit of Slumber".

"*Plantation Melodies*" was a gay affair, catching the warmth and colour of the Mississippi States with its peppers, melons and riot of yellows, through from palest lemon to tawny bronze.

"*Jazz*" was another spectacular bay with its clash of scarlet, gold, purple and blue.

"*Symphony*" brought together all the brilliance of tropical fruit.

A dream of pink and white chrysanthemums and carnations was "*Bridal Music*".

A truly magnificent display was presented in "Music of the East". The theme was "Ballet Suite, Scheherazade" so the peacock motif was dominant in this Persian Court scene. It was carried out in scarlet, gold, turquoise, flame and bronze.

There were also many other utterly delightful arrangements in the Invitation Display section: one which particularly intrigued me was entitled "Me and My Shadow"; a pair of vases, the first in pink gladioli and roses—the second an exact replica in black and grey.

Altogether a show not to be missed. If you were not able to attend this year, I do hope you'll make it a "Must" next year.

## SUGGESTIONS FOR THE USE OF PLANT NAMES IN WRITING

*W. R. SYKES, Member of the R.N.Z.I.H. Nomenclatural Committee*

As I read various articles in the gardening press both here and overseas, I notice differences in the style in which plant names are written. Such inconsistencies can be puzzling or even annoying at times. Thus members of the Nomenclature Committee of the R.N.Z.I.H. are, at various times, called upon to give advice upon such matters. The following notes are intended to be a guide to writing plant names in whatever way they are used, i.e. in a scientific or vernacular form. I have indicated below that there are no formal rules in the latter case, so the important thing is to ensure that a particular work, whether it be a short article or a large book, is consistent in this respect. The recommendations for writing scientific or botanical names are taken from the International Code of Botanical Nomenclature which governs such names. The rules for the formal use of cultivated plant names are given in the International Code of Nomenclature for Cultivated Plant Names which deals with all such categories of plant as opposed to purely botanical ones. Under the heading of Cultivar Names I have mentioned that these names can be either in latin or vernacular form.

### LATIN OR SCIENTIFIC NAMES

Family names and names of higher groups such as orders, classes, etc., are spelt with an initial capital letter and not italicised, e.g. Ranunculaceae (family), Ranales (order). Unlike the lower groups their names have standardised endings, although there are certain exceptions.

### GENERIC NAMES

Generic names used on their own are written with an initial capital letter and put in italics if used in a botanical sense. When they are used in a general or horticultural sense they are not italicised and not capitalised, i.e. they are treated as common names. In practice the distinction is not always clearcut although in the majority of cases it is easy to see in which sense the name is used, e.g. (1) He finds that it is impossible to grow a rhododendron in his garden. (2) The genus *Rhododendron* is not represented in his garden. An anglicised generic name is always treated as a common name; (3) He cannot grow rhododendrons in his garden.

### SPECIFIC NAMES

The name of a species always consists of two words. The first word is the name of the genus and the second is the specific epithet, this being usually a qualifying adjective which therefore should never



be used on its own; e.g. *Metrosideros excelsa* and *M. kermadecensis* not *Metrosideros excelsa* and *kermadecensis*. Note that one can abbreviate the generic name to the first letter in subsequent references where the context makes it unambiguous. Specific names are normally written in italics but on occasions they are written in bold type in order to make them stand out. The word species is often abbreviated when used in conjunction with a generic name, e.g. She collected an unknown *Hebe* sp. and several *Olearia* spp. These abbreviations are always written in roman.

### SUBSPECIFIC AND OTHER NAMES

The category subspecies, often abbreviated to ssp., is much less commonly used than is that of the varieties or botanical variety below it. The latter is usually abbreviated to var. The minor botanical category of forma or form is abbreviated to f. In each of these three cases, the abbreviation is followed by the appropriate subspecific, varietal or formal epithet, this being italicised unless the exception, as already noted under the species, is applicable. The abbreviations ssp., var. and f. are also always written roman.

### CULTIVAR NAMES

Horticultural varieties, whether they are represented by clones (including bud sports), strains, or single lines maintained true by selection, are all considered to be cultivars. This also applies to clones of plants collected in the wild and subsequently introduced to cultivation. This word cultivar has replaced the old loosely-applied variety of the gardener because the latter has caused so much confusion with the botanical variety already noted.

Cultivar names are **never** italicised whether in Latin form or not. If latinised they are written in Roman type with an initial capital letter as are vernacular cultivar names. There are a few rare exceptions to this rule and they consist of certain vernacular names in some non English languages where linguistic custom demands a small initial letter. The inclusion of the word cultivar, abbreviated to cv. and not italicised, is optional. If this is not used the cultivar name or names should be in single quotation marks (never double quotation marks). Sometimes both the single quotation marks and the abbreviation cv. are used to emphasise the cultivar status as opposed to the botanical one. Examples of this may be seen in the new edition of Dallimore and Jackson's book of conifers, e.g. *Thuja plicata* cv. 'Zebrina'. However, the International Code of Nomenclature for Cultivated Plants states that the use of either one or both is optional. If one alone is to be used, I prefer the single quotation marks to be retained (this is only a personal feeling). Thus I like to see, for example, *Juniperus squamata* 'Meyeri'

and *Camellia reticulata* 'Captain Rawes' rather than *Juniperus squamata* cv. Meyeri and *Camellia reticulata* cv. Captain Rawes.

Hybrid names should have an x inserted between the generic name and the hybrid epithet when the latter is latinised, and this group or hybrid name is italicised like any other botanical Latin name, except for the x; e.g. *Rhododendron x loderi*. In the occasional case where a bigeneric name is involved the x precedes this bigeneric name, e.g. *x Laeliocattleya elegans*. The x is also used in this way with hybrid names involving more than two genera, as with some orchids. Clones of this or any other type of hybrid should be given their own precise clonal or cultivar names if they are considered worthy of cultivation. When this is done, they are simply written after the hybrid name in the same way as if they followed an ordinary specific name, e.g. *Hebe x carnea* 'Tricolor' and *Ceanothus x delilianus* 'Gloire de Versailles'. Cultivar names following a non-latinised hybrid name are similarly written, e.g. *Lilium* Bellingham Hybrids 'Shuksan'. Often the hybrid name is omitted when the result is quite unambiguous, e.g. *Ceanothus* 'Gloire de Versailles', but **not** *Hebe* 'Tricolor'. For very common hybrid groups, as with cultivars of popular species, the generic name is often not latinised, e.g. rose 'Peace' and tulip 'Holland's Glory'.

#### COMMON OR VERNACULAR NAMES

There are no set rules about the use of common or vernacular names, but as stated above, consistency in individual articles is important. Commonly, small letters in Roman type are used except where proper nouns form part of the name and thus require a capital initial letter. Occasionally, common names are written entirely in small capitals to make them stand out for some special reason, e.g. as used in headings sometimes. Although quotation marks are fairly commonly used, it is a bad practice to put them round common names. It should be remembered that this type of name has nothing to do with the cultivar name in the vernacular that I have dealt with already.

When the common name is used in conjunction with the Latin name one can put either of them first. Botanically minded people tend to put the Latin name first whereas the majority of gardeners would probably naturally put the common name first. Again, as long as a particular article is consistent in this respect I do not think that it matters which way is adopted. Normally the second name is separated from the first by a comma, e.g. *Leptospermum scoparium*, manuka; or kawaka, *Libocedrus plumosa*. However, some people like to put the common name in brackets after the Latin name. The argument for the latter method is that it makes the common name stand out more and makes it appear more precise, i.e. as more obviously applying only to the particular Latin name with which it is used.

**HORTICULTURAL TOWN AND AROUND—CHRISTCHURCH**

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

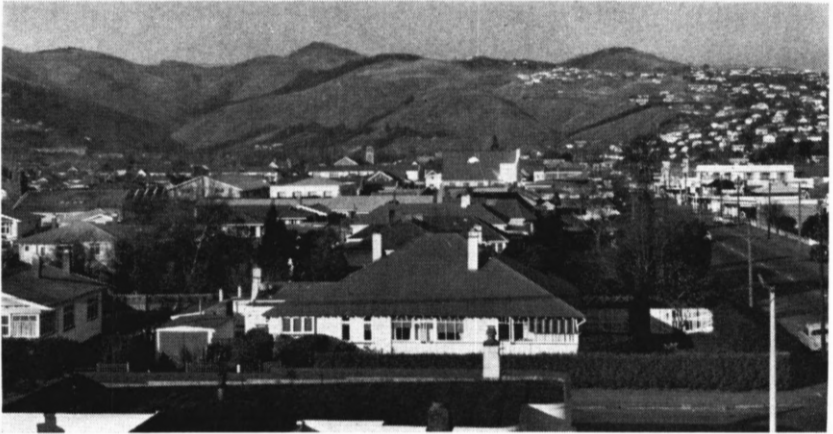
In the March issue of this Journal I commenced the story of Victoria Park which is situated on the Port Hills above Christchurch. The first part was mainly historical and it is now intended to deal with some of the plantings. As mentioned previously the main development of the Park took place from the early 1930s onwards and many of the early plantings are now maturing into good stands of trees and shrubs.

One of the first areas to be developed in those days, was the eastern slope below the tearooms. It is a dry slope and fully exposed to the prevailing easterly wind which blows in from Pegasus Bay during the spring and summer months. Although parts of the Port Hills receive a slightly higher rainfall than the main part of Christchurch, drought periods can be severe and prolonged. With almost no natural shelter available, an outwardly less promising site for planting trees and shrubs could hardly be imagined.

The system of planting used, was to almost saturate the area with hardy, quick-growing subjects; the idea being that these plants would soon grow large enough to shelter the taller and more permanent trees until they were large enough to look after themselves. One of the main problems with such plantings was to get sufficient growth on the shrubs so that they could smother the rank grass instead of being themselves smothered by the grass. This involved having men roughly cultivate around each shrub at least once a year, for about five years. By that time the shrubs were filling out and starting to be visible above the long grass. From then on growth appears to be twice as quick. The grass weakens and starts dying out, and in no time the shrubs meet. Incidentally, this method of planting is still largely used in the various reserves on the Port Hills.

The shrubs used for shelter and ground cover were mainly various species and cultivars of *Hebe*, *Senecio greyii*, *Senecio compactus*, *Cassinia*, and some of the lower-growing species of *Olearia*. In between these would be planted *Pseudopanax*, *Pittosporum*, *Podocarpus totara*, *Olearia*, *Myoporum*, *Hoheria*, *Plagianthus*, *Sophora*, *Cordyline*, and sometimes *Nothofagus*. The plantings were not always of native plants, and blocks or mixed groups of exotics were also planted. Sometimes a mixture of natives and exotics was planted. On the lower portions of the eastern slopes there are stands of *Eucalyptus*, *Cedrus*, *Chamaecyparis lawsoniana*, *Acacia*, *Betula*, and *Arbutus*.

All of these plantings are now fairly mature, and in the case of the native areas they are now starting to open out so that a second growth of seedlings is coming away. As is only natural, as the cover has



The dark trees below the peak of Sugarloaf (left centre) are on the eastern slope of Victoria park referred to in the text; from Colombo Street South.

increased, some of the plants native to the Port Hills but not previously seen in the area, have started to appear. Seen from afar, there is considerable variation in the *Cedrus* which have been planted there, and a close examination may disclose one or two desirable forms.

Two intersecting pathways wind their way down the eastern slope to the bottom of the gully, and it was somewhere down one of these that an unfortunate murder took place some years ago. A few years later I was giving the members of a local garden club a conducted tour of Victoria Park and eventually some of the ladies asked whereabouts the murder occurred. As I had been away from New Zealand at the time, I did not have the faintest idea where. However, I led them down the hill for a suitable distance and pointing to a likely looking spot said, "there". Their morbid curiosity satisfied, they all went home quite happily.

At the top of the eastern slope, just below the tea room, a combination native shrub and alpine garden was originally planted. In the early days the late M. J. Barnett had a reasonably good collection of some of the larger alpines, particularly celmisias, planted there. Nowadays this area is just planted with trees and shrubs. Although frosts do occur, they are rarely severe, and quite a number of the more tender natives can be grown. The whau (*Entelea arborescens*) grows quite well and normally is only occasionally damaged by frost. This winter we suffered the severest air frost for many years and a number of shrubs, including the whau, were quite badly damaged. The kumarahou (*Pomaderris kumeraho*) grows exceedingly well and at times self-sown seed-

lings are quite prolific. The kawa kawa (*Macropiper excelsum*) does well, but it was also among those badly frosted.

One tree of interest is *Pittosporum dallii*. For many years it has been growing at the foot of a rock face in what was apparently a hard situation. However, it grew quite well, but never flowered. Just a few years ago one or two ripe seed capsules were discovered on it and from them a few seedlings were raised. Since then one or two more seed capsules have been observed on it, but so far we have not been lucky enough to actually see the flowers.

Without going to great length the following will give some idea of what is growing there. *Phyllocladus alpinus*, *Neopanax laetum*, *Senecio reinoldii*, *Corokia buddleoides*, *Rubus parvus*, *Beilschmiedia tawa*, *Knightia excelsa*, and *Phebalium nudum*.

The north-western slopes just near the tea room are naturally more sheltered and warmer, and it was there that M. J. Barnett started planting an association of Australian, South African, Mediterranean and Mexican plants. Quite a number of these grow well but the potential for growing them there has not been fully exploited.

Over the years some proteas have been tried and on the whole they thrive. The first, and of course probably the most obvious, is a form of *Protea neriifolia* which is now a very large bush. *Protea macrocephala* is also quite at home and has grown into a bush about ten feet high. Another which does very well is *Protea longiflora* "Alba", which seems to hardly ever cease flowering. Two other proteas growing there are *P. susannae*, and *P. eximea*. In the not too distant future it is intended to try to establish a more extensive collection of these and related shrubs.

A number of favourites from more northern gardens have been planted, among them being *Agonis juniperina*, *Podalyria calyptрата*, *Buddleia colvilei* and *Polygala myrtifolia* var. *grandiflora*. *Olearia phlogopappa* (*O. gunniana*) grows here in two forms. There is the normal white flowered form and the mauve-flowered cultivar which is known as "Blue Gem". Both are worthwhile shrubs.

The evergreen *Viburnum japonicum* is always attractive, but more so when bearing its numerous bright red fruits. Unfortunately the birds also find it attractive and the fruits seldom remain for very long. One uncommon shrub which should be seen and grown more is the Californian manzanita (*Arctostaphylos manzanita*). The branches are reddish-brown and smooth, except where the old bark is peeling off. This feature together with the leathery leaves, and the pink *Pieris*-like flowers make it a most attractive shrub.

Moving around the north-western slopes in a southerly direction, the roadway stops at a view-point and small parking area, before traversing





*On the eastern slope. Kauri, Agathis australis (right centre), Hebe sp. (front left), Coprosma sp. (front right).*



*Looking across the eastern slope showing some of the native plantings.*

the cooler southern parts of the park. In the vicinity of this car park there is another garden area which is also planted with an extensive range of material. There are various species of *Eucalyptus*, including the yellow-flowered *E. preissiana*, and a fine form of *E. leucoxylon* 'Rosea'. *Tristania conferta* is a rare tree in this part of the country and although not growing rapidly is quite happy. Other Australian plants growing in this area are *Hakea laurina*, the curious, so-called one-sided bottle-brush (*Calothamnus quadrifidus*), *Acacia cultriformis*, *Banksia spinulosa*, and *Prostanthera siebiri*.

Growing at the foot of a large rock, where it shows to perfection, is a specimen of golden totara (*Podocarpus totara* "Aurea"). During the winter months in particular, its colour is equal to any golden conifer. Several pohutukawas provide a bold splash of colour from Christmas until late January, according to the season.

Clustered in a rocky pocket and looking very much at home is *Beschorneria dekosteriana*. Its unusual flower spikes never fail to arouse interest. A number of South African heaths have been tried, but here again the full range which can be grown is not yet known. Some which are growing there are, *Erica peziza*, *E. verticillata*, *E. autumnalis* and *E. cruenta*.

The last plant from this area that I am going to mention is possibly one of the most interesting. It is *Sophora toromiro*, the Easter Island relative of our kowhai. It has grown into a small round-headed tree about twelve feet high and just how it came to be there is not now known. Two or three years ago a chance inquiry came to us from an institution in Denmark. They were concerned with a reforestation scheme for Easter Island and were particularly keen to locate *Sophora toromiro* which was at that time extinct on the island. Happily we have been able to supply them with considerable quantities of seed so that this tree can once again grace its homeland.



### CORRIGENDUM

Vol. 7, March, 1967, No. 2, pp. 63-69.

p.63 line 5 up: For 'ground' read 'epiphytic'. (*Dendrobium cunninghamii*)

p.65 line 8: For '*H. cupressoides*' read '*H. tetragona* unnamed var'.

p.67 line 4 up: For '*angustissima*' read '*plumosa*'. (*Coriaria*)

p.69 line 9 down: For '*latifolius*' read '*densifolia*'. (*Forstera bidwillii* var.)

p.69 line 13 down: For '*repens*' read '*pumila*'. (*Coprosma*)

p.69 line 14 down: Delete '*Donatia*'.

## OUR NATIVE FORGETMENOTS

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

'The New Zealanders have long been clamouring for a fair trial', said Farrer in his *English Rock Garden* more than 50 years ago, but despite all the tempting phrases with which he dressed up the dozen species dealt with our native Forgetmenots are still all but unknown to rock garden enthusiasts in this country and overseas. At one time or another I have grown 8 species of *Myosotis* in my alpine garden at Lake Tekapo, enough to show that the genus has a wealth of material waiting for the connoisseur. Some 50 species are known and we have 34 of them, the greatest concentration in the world. All but two are endemic and only three are widespread over both Islands while 7 are reported from one station only. At one time it used to be thought that the area with the greatest concentration of species was likely to be at or near the point of origin of the genus, but this is no longer so.

### Forms and Varieties

To say that we have 34 species is something of an understatement because at least 22 varieties have been named and described over and above the many still undifferentiated forms. Although all those varieties have not been accepted their existence shows the wide range of *Myosotis* in New Zealand. This might be dismissed by the gardener as a matter of academic interest only, but I think there is more to it than that. When the tangle has been cleared up, a task that may take many workers over many years, it is possible that the habitats of species and varieties will be better understood and that some forms will be isolated and recognised as being more amenable to cultivation, disease-resistant and better garden plants than some of the relations at present confused with them.

We get a very good example of this with *M. macrantha* which ranges over the cooler parts of the South Island. At its best it gives us some of the most beautiful flowers in the flora, pure, clear yellow or port wine, orange, or chocolate brown, and Professor Philipson tells in his delightful 'Rock Garden Plants' of finding flowers of ethereal blue and Nile-green. But *Myosotis macrantha* can just as readily produce flowers of the most disappointing colour and size, muddy mustard-yellow and dirty pale shades are not uncommon. Two species of outstanding beauty are often confused with it however, because both resemble *M. macrantha* in habit and foliage so closely that it is difficult to tell them apart. *M. concinna* from limestone cliffs on Mt Owen in Nelson has large bright yellow flowers while *M. explanata*, found only on dripping rocks in Arthurs Pass National Park, is probably the loveliest of all the whites, and blue forms have been reported. The



*Myosotis eximea*, A.M.

(Photographs—A. W. Anderson)



*Myosotis colensoi*, *The Castle Hill Forgetmenot*.

flowers are quite distinct from each other, those of *M. macrantha* have the stamens just above the throat of the flower while *M. concinna* has them standing up above the petals, but in *M. explanata* they are just visible away down in the throat. This brings us to the two sections of *Myosotis*.

### Two Sections

Our Forgetmenots are evenly divided between two sections that can be distinguished at a glance and this is a great help with identification. The original northern *Myosotis* has the stamens growing in the corolla-tube, often well down below the 'scales', those small but very characteristic organs formed by a sort of puckering at the throat of the corolla, with their stalks (filaments) so short that the anthers may be barely visible or at most show no more than their tips above the scales. The more advanced *Exarrhena* section, which is barely known outside New Zealand, has the stamens springing from between the scales and the filaments long enough to bring the anthers up into the air, and in some cases even overtop the petals.

At one time *Exarrhena* was set up as a separate genus based on the Australian *M. suaveolens*, but this was abandoned when it was found that the connection between the various species was too tenuous. It would appear that they are more an example of parallel evolution along one line among otherwise unrelated species, rather than a natural group. Strangely enough we have about half-a-dozen pairs of very similar plants whose flowers fall into the different sections. I have mentioned *M. explanata/macrantha* and there is no point in discussing others rarely seen in cultivation. It would be rash indeed to suggest that because we have most species of *Myosotis* the genus must have originated here or nearby, but it may be that the genus has found conditions so congenial that it has, at some stage in our history, developed many distinct forms and may still be in an active stage of evolution.

### In Cultivation

As we have seen, comparatively few species are in cultivation, although many people have brought back plants from the wild and managed to keep them in the garden for a few years. So far as I know *M. eximea* is the only one to gain an Award of Merit from the R.H.S. and it is a fine white species producing great mounds of snowy blossom. Smaller, more delicate and much better known is *M. colensoi*, the Castle Hill Forgetmenot, but I have found it much harder to keep at Tekapo. The one that is happiest there is a very good form of *M. australis* v. *conspicua* which is seeding itself all over the place and forms a very pleasant companion for *Viola cunninghamii* which does the same. *M.*

*conspicua* is in general appearance rather like one of the bedding sort with brown leaves and lemon yellow flowers, and grows into neat tufts if the central stem is nipped before it begins to flower.

Another great favourite is *M. uniflora* from the wet shingly riverbeds of the back country where it makes foot wide mats of tiny leaves, bright green and almost lacy, and decorates them with a profusion of upright yellow flowers. Very distinct is one of the *pulvinaris* type from the high tops where it grows into span-wide cushions with tiny brown leaves that grow green and twice the size in the garden. In early spring, just as the snow melts the cushions cover themselves with an abundance of single white flowers, very fragrant, and so thick as to all but hide the foliage. *M. macrantha* may be taken as an example of most of the other species that find their way into the garden. It likes to make great masses of leaves and in time these reveal themselves as flowering shoots that give mounds a foot high and a yard across. Welcome as this glorious sight is, it is a sad one because the plants usually die of exhaustion. They need cool, semi-shady conditions and even if long lived in the wild seem to become monocarpic in the garden. Fortunately many species are easily increased from cuttings taken in March. Given shade and moisture these will grow into sturdy plants and may be planted out in winter to acclimatise and flower in spring. With the bigger sorts the flowering stems are best pinched out until the plants are well established.

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### ERRATA — MARCH, 1968

Please note the following corrections:

Page 257—For *Fuchsia exorticata* read *Fuchsia excorticata*.

Page 258—For *Sophora tetraphera* read *Sophora tetraptera*.

Page 259—For *Podocarpus ferrugineus* read *Podocarpus ferrugineus*; for *Pittosporum eugenidides* read *Pittosporum eugenioides*; *Griselina* sp. read *Griselinia* sp; for *Cardodetus serratus* read *Carpodetus serratus*.

Page 260—For *Arisotelia serrata* read *Aristotelia serrata*.

Page 260—For *Parsonia capsularis* read *Parsonsia capsularis*; for Native Jessamine read Maori Jasmine; for *Metrosdieros albiflora* read *Metrosideros perforata*.

Page 260 and 261—*Dodonea viscosa* read *Dodonaea viscosa*; for pungas read pongas; for *Mühlenbeckia* read *Muehlenbeckia*.

Page 262—For *Helichrysum bellioides* read *Helichrysum bellidioides*.

We regret the errors.



**WANGANUI HORTICULTURAL SOCIETY CENTENNIAL****11th MAY, 1968**Address by *A. M. W. GREIG, A.H.R.I.H.(N.Z.), Wellington***Introduction**

On behalf of New Zealand horticulturalists I extend to the Wanganui Horticultural Society congratulations and best wishes on reaching this centennial. Because of our personal associations with Wanganui for over 40 years Mrs Greig and I thank you for the invitation to join you on the site where this society was founded 100 years ago. At a centennial, although we look back, we should also look forward, and tonight I propose to look at the place of horticulture and horticulturalists in New Zealand and what should be or could be our contribution to this country in the next few decades.

**What Is Horticulture?**

First of all most people have a very ill defined idea regarding the meaning of horticulture. It is the growing of fruits, vegetables and ornamentals for business or for pleasure and a horticulturalist should include all who have the welfare of horticulture at heart; whether as members of horticultural societies or gardening clubs, commercial fruit or vegetable growers, floral artists, university lecturers or horticultural administrators. We are all horticulturalists. But because horticulture is so diverse each specialised group has formed its own organisation and most horticulturalists find themselves members of half a dozen organisations.

Here in this city I know you have active specialist societies for the rose, iris, chrysanthemum, and camellia enthusiasts as well as a District Council of the Institute of Horticulture and this Horticultural Society. One great need in New Zealand is, I'm sure, a better co-ordination of activities at district level. The Auckland Horticultural Council is a good example of what can be achieved by the preparation of a comprehensive schedule of all horticultural events to come in the city. Greater flexibility in membership between kindred organisations might be achieved by throwing open the doors for all educational meetings with a silver coin donation from non-members who attend. I leave this thought with you for consideration.

**Scope of Horticulture**

Not only is horticulture very diverse but it is also distinct because it covers such a wide span of human interests. What other activity is accepted as an art, a craft, a business, and a science?

As members of a Horticultural Society you recognise horticulture as

an art and demonstrate this facet at your shows and by floral art displays. Every motorist driving in or out of this city has noticed the attractive groupings of plants where the old road meanders have been cut off. By beautification schemes and floral festivals—horticulture as an art is seen and recognised: “Green fingers” and the layout of the garden also show the art of horticulture.

Horticulture as a craft is probably best demonstrated by skill and speed in the budding of roses, or in their pruning. Fruit packing or tree pruning with dexterity is also a display of craftsmanship. That horticulture is a business is accepted by commercial producers and all those who handle horticultural products from producer to consumer. Whilst chemistry, mycology or entomology are established branches of science—horticulture as a science in New Zealand has only been recognised in the last few years on the establishment of the chairs in horticulture at Massey and Lincoln.

### **Horticulture—Its Challenge and Opportunities**

Rather than spend time on horticultural problems let me now take the opportunity to list some contributions horticulturists can make to New Zealand in the next decade or two.

1. New Zealand horticulturists should assess new export opportunities for horticultural products and have the initiative and confidence to take these opportunities. The production and export of Chinese gooseberries is a very good example in this direction. Export of chrysanthemum blooms, asparagus and strawberries by air and onions by sea are others.
2. Horticulturists can with confidence be proud of New Zealand Horticulture. Whilst looking at developments in other countries such as the Netherlands, U.S.A., or U.K. we should adopt only what is right for New Zealand. Broadly we are up with the leaders in world horticulture. We have played our part at times as pioneers, as with bulk harvesting of apples, but often we take too much notice of what is being done in other countries and adopt it by precedent and not by judgment.
3. In the earlier days of New Zealand horticulture we were, I believe, too much influenced by the botanical explorers of this country and because some plant was unique it had to have a place in New Zealand horticulture. Today I believe New Zealand horticulture must be based on a blending of the indigenous with the exotic by the choice of plants of garden excellence ecologically suited to their surroundings. Pukeiti is an excellent example of the blending I have

in mind. New Zealand horticulture should be established as a distinct entity or as something different where often temperate and sub-tropical plants grow in harmony side by side.

4. As horticulturists we should establish panels of horticulturists willing to guide overseas and New Zealand visitors to horticultural highlights of selected districts. New Zealand's green grass, parks and the colour of its home gardens are too often taken for granted by us but by world standards they are in the forefront of this country's charm and attractiveness and should rate equally with our geysers, snowy mountains, bush and lakes. We could do more to improve motoring guides and pinpoint items of horticultural interest—five miles to Bushey park with its "native bush." All horticulturists welcome.
5. We should stimulate a new tree planting scheme across the countryside not only to replace shelter belts which have outlived their usefulness but to plant trees for their beauty for birds and as nectar sources for bees—with modern weedkillers and the disappearance of many hedges—the New Zealand beekeeper would welcome our help. What I have in mind is to stimulate planting of New Zealand native trees such as the rewa rewa, the tree fuschia or konini, the titoki, rata, pohutukawa, cabbage tree, five finger and variegated flax. Exotics which are also of value are the Australian wattles and selected spp. of eucalypts, the bottlebrush, banksia, the she oak, silky oak and various willows—straight, weeping or pussy—and tree lucerne. These are not only attractive but of use to our friends—the bees. Also wise planting of trees or flowering shrubs in streets and improvements to the banks of the magnificent Wanganui River which isn't what it used to be.
6. We should continue individually and collectively to conserve high quality soils and the bush; prevent or check soil erosion, preserve historic and notable trees—ask the "Bob-a-Job" youngsters to help us gather up, burn or bury all the litter to be seen at picnic spots, in the bush or at the seaside.
7. **Plant Protection**  
New Zealand is still free of certain serious horticultural pests and diseases such as the harmful fruit flies, Colorado beetle, golden eelworm and many others. If we are to retain this freedom we need the co-operation of every horticulturist to impress on others that the plant quarantine restrictions are necessary and that it is not smart to try and evade them. New Zealand's plant quarantine procedures, I believe, are realistic, liberal and practical. They

require your understanding and support. On the overall and continuing problem of pests and diseases it is my opinion that in the decade ahead there will be a greater realisation by commercial producers that chemical sprays must be used with more discretion and that spraying should be integrated with biological control so that we do not lose the help of beneficial insects through our efforts in destroying harmful pests. In the home garden I think the use of chemicals should be kept to the minimum. Also isn't half the fun of gardening pulling out the weeds!

#### 8. **Horticultural Shows**

Some of these objectives should be told clearly and concisely at horticultural shows which in my opinion should swing towards horticultural education combined with floral festivals where many co-operate and competition is reduced. Consideration must also be given to the wisdom of holding shows over the weekend including Sunday afternoons. Surely the public would be equally pleased to visit the local horticultural show as to visit an art gallery or museum. Wouldn't this help to enliven what are "dead weekends" for visitors to New Zealand?

9. It is also most important that horticultural employers ensure that the career opportunities for young men and women in horticulture are equally attractive to those in other spheres not just as a way of life but also as a livelihood. We must give adequate recognition to the New Zealand Diploma in Horticulture and encourage sufficient recruits of the right calibre to enrol at the Horticultural University Faculties at Massey and Lincoln now led by Professors of Horticulture. If all horticultural activities were closely knit then horticulture should be recognised as equal to forestry in its significance to New Zealand.
10. Finally, it is my belief that horticulture can make its greatest contribution to humanity through the fact it is an art, and also a science by bridging the growing gap between science and philosophy—between the practical and the aesthetic—the tangible and intangible—the mundane and the spiritual. To me the bridge of co-operation and understanding must be built across this gap which frustrates mankind. Horticulture and horticulturists I believe can play, should play and in my opinion must play a catalytic role in the century ahead of us.

I wish the society well and hope it will play a worthwhile part in its second century.

**GINGERS IN NORTHLAND — BLESSING OF BANE?**

KATIE REYNOLDS, F.R.I.H.(N.Z.), Whangarei

In Northland in particular, but also in other parts of New Zealand some members of the Ginger family have become garden escapes, and grow and spread so much that they have become a considerable nuisance. None-the-less, the two culprits *Hedychium gardnerianum* and *Hedychium flavum*, both natives of N. India, are splendid plants and wherever they grow adorn the landscape with their beauty. In controlled situations both could be used to great effect. After all, a plant becomes a weed only where it grows unwanted. These Gingers are very lovely and not in any way offensive—they are not thorny, nor are they poisonous—and modern methods of weed control should enable us to keep them just where we want them.

In Northland, in addition to the two Gingers that “grow like weeds” we have two other beauties, White Ginger or Ginger Lily, *Hedychium coronarium* and Shell Ginger, *Alpinia splendens* (syn nutans).

I have been assured that Yellow Ginger, *Hedychium flavum* is the real Ginger of Spice fame, and then again I have been told that it is not the Yellow Ginger but the White, *Hedychium coronarium* (India). It is, however, neither of these but a plant in an entirely different genus, *Zingiber officinale*, originally from E. Indies but now widespread throughout Asia and Polynesia, where the very aromatic rhizome is used in many spices, and to make pure ground ginger. The tender “thumbs” are candied to give us delectable “Chinese ginger”, and Chinese, Malays, and Hawaiians use fresh pieces of root or young shoots to add piquancy to their cooking. I have been told by people who live in these warmer lands that *Zingiber officinale* would not grow here except in a heated glass-house. Hawaii has a native species *Zingiber zerumbet* growing wild in the forests and forming a ground cover a foot or two high. I am told that much of the candied ginger we buy here is in fact only piemelon suitably preserved and impregnated with ginger flavouring—the latter being that of the genuine *Zingiber officinale*. The rhizomes of the three *Hedychiums* that grow here are distinctly aromatic, gingery, and it is possible that they could be used. They are not poisonous but on the other hand it may be that they have little flavour. An experiment to determine their value could prove worth-while.

The Gingers are not far removed botanically from the cannas, and bananas, and so, basically, they are reed-like plants with fibrous stalks and blade-shaped leaves. Of the three *Hedychiums* that grow in New Zealand, White Ginger, *Hedychium coronarium*, the most recent introduction, is perhaps the most beautiful. It was the first plant of this genus of about 40 species to be described. *Hedys* sweet, *chion* snow,



*Hedychium gardnerianum*.

(Photograph—Douglas Elliott)



referring to the enchanting fragrance and beautiful moon-white flowers of this species. The strong fibrous leaf stems rise from the ground sometimes to a height of seven feet, holding large blade-shaped leaves. The flower head at the end of the leaf stem is a smooth waxen green bulb made up of scale-like bracts. Behind each scale is a flower, and under good conditions many flowers and buds push out at the same time. It is a very handsome plant and the flowers have an ethereal delicacy and great beauty. Given freedom I think it would spread like the other two species. However, there are places where this could be welcome. In any case all three of the *Hedychiums* make good large tub and patio plants.

Yellow Ginger, *Hedychium flavum* has smaller flowers of creamy yellow, many flowers and quill shaped buds emerging at once from the scaly bracts. The individual flower has three petals, two paired and wing-like, the third large and looking like a second pair of wings folded together. There are three slender sepals and a long filament of a deeper colour, holding pistil and stamens. Flowers of *Hedychium coronarium* look like large white moths; those of *Hedychium flavum* like more slender creamy yellow ones.

*Hedychium gardnerianum* the most widespread, and the nuisance, of our "wild" gingers has a much smaller flower of similar shape, of a good yellow enhanced by long red filaments. These are carried in spikes about 14 inches long, the flowers all opening together. A patch of this Ginger in full bloom, carrying many spikes above the handsome foliage, is a very lovely sight. The flowers are followed by handsome spikes of very showy seeds, first green then deep orange, much appreciated by floral artists. In Hawaii this is called "Kahili" Ginger—the Kahili being part of the regalia of an Hawaiian chieftain—a pole with long wing and tail feathers of certain large birds affixed near the top to form a cylindrical head; the transfer of name to the Kahili ginger being because of the obvious resemblance to this in the cylindrical flower heads with their gay yellow flowers and long red filaments.

The fourth Ginger grown in Northland is the Shell Ginger, *Alpinia splendens* (syn *nutans*). So far I have seen this handsome Ginger only in more sheltered, warmer areas, strictly as a treasured garden plant. In favoured situations it grows up to 12ft high and carries very luxuriant alternate leaf blades about 5 inches wide and 2ft long. The buds are like a stiff strand of closely strung shells drooping in a cluster from the ends of the leaf stalks. Each bud is white tipped with pink. They open one or two at a time and the flower pushes out with thin white petals and a larger fluted and ruffled lip of gold marked and veined with red.

These Gingers are all handsome. Those of us who have glimpsed the gardens of the tropics would wish to grow some of the others, such as

*Zingiber officinale* to make our own spicy Ginger, *Alpinia purpurata*, the Red Ginger, and most magnificent and dramatic of them all, the Torch Ginger, *Phaeomeria magnifica* from Indonesia. This one has leaf stalks often as high as 20ft and flower stalks that arise directly from the ground a little apart from the leaf stalks, to carry their great torches of red or pink waxen cones which may be as much as 10 inches across, looking a little like great waratah flowers. Even in the North conditions are not tropical enough for these beauties. However, we could stop thinking of the *Hedychium* spp. as a nuisance and accord them space in certain forms of landscaping. Left to their own devices, *Hedychium gardnerianum* and *Hedychium flavum* adorn and beautify spots that otherwise would be bare or covered in unsightly weeds. The evening fragrance is delightful. Too often the beauty of plants is overlooked if they become too easy to grow.



**1969 ANNUAL DOMINION CONFERENCE**  
of the  
**ROYAL NEW ZEALAND INSTITUTE OF  
HORTICULTURE (INC.)**

**FORTY-SIXTH ANNUAL MEETING & CONFERENCE  
OF DELEGATES**

NOTICE is hereby given that the forty-sixth Annual Meeting and Conference of Delegates of the Royal New Zealand Institute of Horticulture (Inc.) will be held in Invercargill on February 27, 1969, commencing at 9.00 a.m.

The Annual Banks Commemorative Lecture will be delivered at 8 p.m. on the same date.

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.

**WATTAKAHA SINENSIS**

W. R. SYKES, B.Sc., N.D.H., Christchurch

Those who live in places which are too cold to grow the attractive hoyas, except under glass, can find an acceptable substitute in *Wattakaha sinensis*, or *Dregea sinensis* as it used to be called. It has more than a superficial resemblance to species of the former genus, because they both belong to the same group of the family Asclepiadaceae. This is more obvious when the plant is flowering as can be seen from the accompanying photograph.

Like many species of Hoya, *Wattakaha sinensis* is from Asia, and as suggested by the specific name, comes from China. Presumably it must come from temperate regions of that country because it can tolerate winter frosts of at least 15°F on the ground and probably much more. However, like many otherwise hardy Chinese plants the leaves are frost sensitive, but unlike any hoyas that I know, the plants are deciduous. I grow *Wattakaha sinensis* on an old apple tree so that the stems can twine and climb to a considerable height and probably the plant benefits from having its roots in a shaded place. Also the risk of damage from late spring frosts to the young leaves is lessened in such a situation. The stems become more or less woody and, like most of its family, the whole plant is full of milky latex. The simple hairy leaves are membranous, a contrast to the thicker and even fleshy ones of hoyas.

The umbels of flowers face downwards as shown in the photograph, this being also a feature of the hoyas. These are produced in great numbers when the plants are thriving and are seen to the best advantage when viewed from below. In full bloom a plant is an attractive sight because each flower is a rather delicate pink, this colour being really composed of red dots upon a white background. January and February are the flowering months in Canterbury. The corolla is rather fleshy as is so often the case in the Asclepiadaceae. In the middle is the distinctive united stamen and pistil mechanism which forms an effective cross pollination device. As part of this device, the pollen grains are grouped into sticky masses or pollinia, a very rare feature in plants, the only other well-known example being in the orchid family. A combined stamen and pistil mechanism is also found in the orchids but a detailed examination shows that there are many differences. A slight modification of this mechanism as seen in *Wattakaha sinensis* is found in the much more rampant, evergreen South American climber, *Araujia sericofera*, the cruel plant. This also belongs to the Asclepiadaceae but has a short tubular corolla unlike *Wattakaha* or *Hoya*. The cruel plant



*Wattakaha sinensis.*

(Photograph—D.S.I.R., Lincoln)

is so-called because insects searching for nectar are trapped by their proboscis when it becomes stuck in the anther slits by a sticky secretion from the pollinia inside. I have never seen *Wattakaha sinensis* trap insects. Also I have not seen the pod-like fruits on my plant so far. These are 2-3ins long, finely downy and inside are numbers of seeds with a tuft of silky hairs which permit dispersal by wind. This is the usual type of fruit and seed to be found in this family.

The subject of this note is unfortunately not very common in New Zealand, at least today; although it must have been here a long time. It is most likely to be seen in older gardens.

**DISTRICT COUNCIL REPORT****WAIKATO**

In the Waikato, as in other districts, much attention has been focussed recently on problems connected with trees. Too often trees are destroyed unnecessarily, but also at times protests have been made at the removal of trees which have reached the end of their useful life. It is often difficult for those responsible to decide whether or not to remove trees in areas being developed, but unfortunately there is often the impression that little real thought is given to retaining and incorporating such trees in new layouts. Public and private works are often carried out within strict limits of expenditure and frequently such considerations preclude additional expenditure on schemes to retain trees. Sometimes trees can be a hazard to traffic and the public, and in these cases public safety must come first. To newcomers to New Zealand often the first impression is of the lack of trees to soften the harshness of the streets; how much more attractive some towns could be with tree-lined streets and well-planted parks. In the Waikato, Cambridge is a good example where the forethought of an earlier generation has given us a delightfully sylvan town—will we leave to following generations similar legacies? Perhaps we will, for there is an encouraging and awakening sense of responsibility in many people and organisations now who appreciate how much trees can contribute to better living. As an Institute probably our best contribution will be to maintain vigilance where the removal of existing trees threatens and to encourage widespread planting of the great range of trees that will grow in our pleasant climate.

At the May meeting Mr R. Barrie from North Taranaki gave a most interesting talk on new garden plants and whetted his listeners' appetite by showing some of those that will be available in the future. Demonstrations of planting are always popular and in June Mr E. J. Martin and Mr G. Mander used a wide range of trees and shrubs for this. Mr Hans Schurmann, who has recently come to New Zealand from Switzerland, showed some excellent slides of garden design in that country, commenting on how conditions there influenced the layout and materials used. Camellias are always popular and Colonel T. Durrant, from Tirau, who is well known as one of our leading authorities on these plants gave a talk on recent research into the Reticulata group at the July meeting.

In the Waikato this winter there has been more wet weather than usual with less frosts. This has made conditions for planting far from favourable, but flowering of winter plants seems unaffected. Looking at the new gardens, both in town and country, gives the impression that the standard of garden design has improved greatly in recent years. Many well-designed and carefully made gardens are to be seen, and when time has lent maturity some are going to be outstanding. Many garden centres are now in operation and these, with the older-established shops and nurseries are offering a very good service to gardeners who are taking full advantage of it.



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