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# NEW ZEALAND PLANTS AND GARDENS

The Official Journal of the Royal New  
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## NAMED VARIETIES

There are very few gardeners who would be interested in roses, dahlias, chrysanthemums, perennial phlox or asters, to mention only a few genera, if they were not able to obtain plants of named varieties of a guaranteed colour, form, habit of growth and season of flowering.

Most plants especially if perennial, can usually be increased by division, cuttings, grafting, budding, layering or some other equally reliable method of vegetative propagation. Propagated in this way the resulting plants will be identical with the parent. Seedlings are never reliable and can show considerable variation.

When I take into consideration the deep interest there is, in New Zealand, in plants of garden origin that can be guaranteed true to name, I find it more than ever extraordinary that we are still content with seed strains of two of the leading herbaceous genera viz. the *Delphinium* and the *Lupinus polyphyllus* hybrids. In Britain, where the evolution of both of these plants took place, the advances are marked in terms of named varieties rather than seed strains. These were all originated from selected seedlings which displayed a superior form of flower, colour and habit of growth. Each was given a name after trial and propagated vegetatively from cuttings so that plants true to type in every way were available. This can be done in the same way here as in Britain.

In some instances certain shrubs have been raised from imported seed and not all can be regarded as desirable types. Even among species variations can occur. This is especially true with that very popular shrub the *Protea*. Two of the finest species viz. *neriifolia* and *barbigera* show a great variation in colour from seed and it is impossible to guarantee the colour of any unflowered seedling. It is desirable that the best forms of these proteas should be given varietal names, and propagated vegetatively so that it is possible for the grower to be able to guarantee his plants to be true to type. A similar position exists with our native pohutukawa, which may vary from pink to deepest crimson, and *Eucalyptus ficifolia*, that can vary from dull red to almost flame. It is to be hoped that, in the not too far distant future, both of these will be propagated vegetatively from selected types and colours, and named accordingly.

G. A. R. PHILLIPS,

Editor.



**BANKS LECTURE 1964**  
**MAN AND THE MOUNTAIN LANDS**

*J. T. HOLLOWAY.*

*(Officer in charge of the New Zealand Forest Service, Rangiora.)*

### **Introduction**

In response to the rush and bustle of modern life, a deplorable custom has grown up. Great masterpieces of literature are presented, for our hurried consumption, in condensed and emasculated form, as if the style and subtleties of the original works could survive this treatment. It is a custom I abhor. Nevertheless, tonight, I myself propose attempting such a precis, not of a single literary work but of a century of scientific effort. In doing so, in attempting to summarise for you our present knowledge of the New Zealand mountain country, I take many conscious risks; but I do feel that the occasion, for two distinct reasons, is an opportune one.

In the first place, the threads of the story I have to tell, however imperfectly I tell it, are drawn from many contributory natural sciences. I believe, therefore, that it is a story that would have been of absorbing interest to the great naturalists of the late 18th Century, foremost amongst whom stood Sir Joseph Banks whose name is commemorated in these lectures given at your Annual Conferences. The attempt may appropriately be made in his memory.

In the second place, I believe that we now stand at the threshold of an era of awakening national interest in our mountain lands. Interest to date has been sporadic, or sectional, with long periods of neglect or disinterest. On the whole, we have followed a comfortable lowland way of life inherited from, and patterned on, that appropriate to the subdued mature landscapes of the old country. On the whole, we have been forgetful of the fact that our small fragments of lowland are, almost everywhere, backed by larger areas of high and difficult mountain country. We have chosen not to consider the essential interdependence of lowland and highland.

These attitudes of mind cannot long continue. Step by step as lowland resources are developed and our population grows, pressures on the mountain lands must also grow. There must inevitably be demands for increased pastoral production, for the further realisation of hydro-electric potentials, for more water for cities and farms, for better flood control, and for additional mountain-land sport and recreation. And, because these various demands, each legitimate in itself, will not everywhere be mutually compatible, there must inevitably be recurrent controversies. I venture the forecast that, from this data on, there will rarely be a time when an acrimonious battle is not being fought, somewhere in New Zealand, on some mountain-land issue. We have had more than one taste of this in recent years.



It seems to me, therefore, that there is a need for the development of a substantial body of well-informed public opinion on mountain-land matters. Otherwise, conflicts, as they occur, are most likely to be resolved piecemeal, in favour of vociferous minorities irrespective of the real strength of their claims. If I can make a small contribution, tonight, toward the development of this desired body of public opinion, I will be satisfied. I would ask you to remember, however, that, in the time I have available, I can only present a condensed and emasculated account. The justification offered for condensed books is that they serve to stimulate an appetite for the originals. I hope that this brief account of the mountain-lands will also prove to be an appetiser.

### **The Geological Background**

To begin with, it is necessary to know something about the origins and structure of the mountains. I will not dwell long on this. A superb summary of this part of the story has recently been published by Dr. Charles Fleming. I draw his account to your attention and apologise to him, in advance, for any errors I may make in the abstraction and interpretation of those details that appear to me to be of present significance.

The oldest rocks of which our mountains are composed were laid down in Ordovician, Cambrian and pre-Cambrian times, 400-1000 million years ago; but these ancient rocks are not of wide distribution. The real story of the mountains begins approximately 300 million years ago when a deep oceanic trough or geosyncline developed over that portion of the earth's crust now occupied by the land we call New Zealand. This trough, over the course of 150 million years, slowly filled with sediments derived from lands lying, at various times, to the east and to the west.

The oldest sediments were deeply buried and were subsequently converted into gneiss and other hard metamorphic rocks by heat and pressure. Locally, they were massively invaded by igneous rocks which solidified to form granites and diorites or, where they poured out upon the surface, basalts and andesites. Sediments of younger age, not subjected to such great heat and pressure, were converted into schists of varying degrees of metamorphism. The youngest geosynclinal sediments, mainly deep-water sandstones and inter-bedded mudstones, underwent little alteration and survive as greywackes and argillites.

Later, during the Cretaceous Period (80-130 million years ago), the floor of the trough rose and its contained sediments were thrust up to form mountains which, however, by the end of the Cretaceous, had already been worn down again to form a land of low relief subject to flooding by the sea. There followed a long period during which shallow waters sediments, mudstones, limestones and the like, accumulated. Throughout this period, the Tertiary Age, New Zealand



was probably an archipelago of islands, sometimes volcanic, that were uplifted or resubmerged as the local buckling of the earth's crust continued. Not all of the land was under the sea at any one time but, over the greater part of it, marine sediments were laid down at one time or another.

The pace of events now accelerated. Beginning slowly, at first in the far south perhaps 10 million years ago, but not reaching a climax until 1 to 2 million years ago, massive mountain building movements took place. The land rose rapidly but unequally, sometimes as great tilted blocks, sometimes in complex, faulted folds; and, as the land rose, the soft Tertiary sediments were stripped from the higher ground, once more exposing the metamorphic and sedimentary rocks, the gneisses, schists, greywackes, etc., of geosynclinal origin. The maximum height of uplift has been calculated to have been as much as 40-50,000 ft., though the mountains, of course, never reached this height. They were worn down almost as fast as they were uplifted. Uplift continues though apparently at a substantially reduced rate.

Simultaneously, over the latter part of this period, in response to world-wide climatic changes, the South Island mountains were subjected to intense ice action. The ice advanced and retreated many times, the last major advance of the ice not terminating until approximately 15,000 years ago. Since then we have passed through a period of warmth and the climate has again cooled. A minor advance of the alpine glaciers culminated as recently as the mid 19th century.

During each advance, the valleys were cut deeper and immense quantities of glacial detritus were spewed out on to the plains, and following each retreat, the valley walls, greatly oversteepened, were left, particularly in greywacke regions, with a covering of frost shattered rock, talus, and other glacial debris. Where the mountains escaped direct ice action, as in parts of eastern South Island and in the south of the North Island, they were subjected to and moulded by the freeze and thaw of periglacial climates. Northern ranges of the North Island, which escaped both glaciation and the effects of periglacial climate, were, very late in the period, repeatedly and lavishly coated with loose pumice sands and volcanic ash derived from centres of volcanic activity extending from Mt. Egmont to the Bay of Plenty.

In brief, this is the story of the mountains themselves, or, more accurately, that part of it essential to an understanding of the vegetation and to an understanding of mountain-land management problems. The key points are the extreme youth of the mountains and their complex recent history. I would pause only to note the very wide extent of the greywacke and schist mountains, particularly the former, in comparison with those built from harder and more erosion resistant materials. These latter, the oldest and most strongly altered geosynclinal metamorphics, their associated intrusives, and the more ancient pre-Cambrian to Ordovician rocks, are largely confined to the

geological provinces of Fiordland and north-west Nelson. It is the greywacke country that is the hard-core problem country.

### The Story of the Vegetation

Dr. Fleming, in the paper already mentioned, has also summarised existing information concerning the origins of the New Zealand flora. Briefly, it is unlikely that any substantial mountain-land element that may have been contained within the flora during early Cretaceous times when the land stood high, survived the later periods of reduction and general submergence of the land surface. In other words, our present mountain-land flora is probably derived from that of Tertiary oceanic islands, by speciation, since mountain building began. Some new species or genera may have arrived, subsequently, from overseas but these would most likely be casual accidental introductions. In the absence of land connections, no strong reinforcement of the mountain-land flora from overseas was at all probable. The story of the vegetation proper, as we know it, may be taken up at this point.

As the mountains rose, a host of new plant habitats were created, to be filled by the most readily adaptable of the species that had survived the long period of mild oceanic island climate, by new species arising through mutation or hybridisation, or by casual immigrant species. And out of this almost random collection of old island species, evolving species, and casual immigrants, a new mountain-land vegetation made up of new combinations of species to form new plant associations had to be forged.

There is room here for endless fascinating speculation. The detailed stages through which the vegetation passed in the course of its rapid evolution will, however, never be known. Following the onset of the first ice age, probably before any new state of vegetation stability had been achieved, almost all traces of the mountain-land vegetation were destroyed, the ice reaching the sea on the west coast of the South Island, south of the Grey River, extending out on to the inland margins of the Canterbury Plains and into the intermontane basins of Otago and Southland. Most mountain-land species and possibly many mountain-land plant associations survived, however, in lowland refugia and on northern mountains that escaped placiacion.

Following the retreat of the ice, therefore, though the mountains had everywhere to be recolonised by plants, there was now a strong mountain-land element in the flora, an element probably strengthened by continued speciation during the glacial period. The recolonisation of the mountain country is therefore likely to have been rapid, the mild climates of the subsequent long interglacial almost certainly permitting the development of a closed cover of vegetation at altitudes much greater than at present.



But again we will never know the full details. The mountain forests, scrublands and grasslands of the first interglacial were, in their turn, destroyed when the ice advanced again. The whole process was repeated. It was to be repeated at least four times at irregular but shortening intervals, the position of the ice front, on each occasion, falling short of that reached on the previous occasion. All advances, probably, were multiple in character, the last certainly being marked, in its diminuendo phase, by many secondary advances and retreats. And with each swing of the ice pendulum there was, of course, a corresponding movement of plant species and associations from the mountains to the plains and back again, leading to a confusion of vegetation patterns, to the probable development of new plant associations, and to continued speciation because of the abundant new habitats provided and the abundant opportunities offered for hybridisation.

All of these processes have continued into very recent times and still, in fact, continue. Thus it has already been noted that the last, irregular, retreat of the ice did not commence until, approximately, 15,000 years ago. The climate then warmed rapidly, reaching a peak of warmth, the so-called climatic optimum, 3-5000 years ago when conditions were much warmer than they are at present. Even the rate of cooling since the climatic optimum has been irregular with many minor reversals in trend. The most recent of these, indeed, falls well within our own experience as shown by the present rapid retreat of alpine glaciers throughout the Southern Alps, glaciers which, themselves, may not be more than a few hundred years old. There are some grounds for the belief that they did not start to form before the cold years of the 16th-17th centuries. At the time of the climatic optimum, and for some time thereafter, there may have been little ice left in the New Zealand high country.

The period of the climatic optimum was, in fact, a period when podocarp forests spread widely across the present grassland regions of eastern South Island and far into the now semi-arid intermounts of Otago and South Canterbury, replacing the grasslands of the late glacial period and the grasslands and beech forests of the immediate past-glacial. Much information concerning these forests is accumulating though the interpretation of this information is difficult for reasons that will become apparent later. Little is yet known, however, concerning the distribution and composition of other types of vegetation as they were during the period of the climatic optimum, though it is becoming increasingly obvious that many broad present-day vegetation patterns were set at this time or even earlier. They thus reflect more the events of the past than the conditions of the present.

I have time for only one example. As is well known, there are no beech forests in Westland between the Taramakau and Paringa rivers though the forests to the north and south of these rivers are predominantly beech forests. The explanation appears to be that, between these rivers, all forests were completely destroyed during the last advance of the ice. On the retreat of the glaciers, the area was colonised by the podocarps and their associated broad-leaved species, not by the beech species as would normally have been expected, simply because of the pronounced differences that exist in dispersal rates between these two groups of species. The podocarps and their associated species could enter rapidly by wind and bird dispersal of seed, the beech species migrating slowly by gravity fall or water carriage of seed. The replacement of podocarp forest by beech forest, since then, has been slow because of intense competition in the lowland zone through which the beech species had to pass, and because, during the period of the climatic optimum, regional climates more strongly favoured the podocarp forests. At this time, the advancing beech forests may even have been forced into a temporary retreat. The result of all these things is that, today, in the upland valleys of central Westland, the forests are kamahi-rata forests (with a diminishing podocarp element) even though present day conditions would appear to be most suitable for beech forests.

Many other examples could be given, particularly from the forests that lie along the eastern flanks of the Southern Alps. The main point to note is that vegetation patterns, as we know them, or rather as they were before the arrival of man, were not always attuned to present environmental conditions, because these conditions had themselves undergone such frequent and rapid alteration. Vegetation adjustments and re-adjustments had inevitably lagged behind, the type of vegetation occurring in any one place depending as much upon such factors as the accidental survival of seed sources, the time available for the migration of species and plant associations, and methods of migration, as upon the intrinsic nature of the site.

In other words, the very common assumption that the native vegetation, as it was before man interfered with it, was a stable vegetation existing in a state of harmonious balance with the physical factors and forces of the environment, is palpably erroneous. Even in some of its broadest features, as indicated, the vegetation was climatically out of phase to a greater or lesser extent. In detail, many changes were in progress in response not only to the major climatic events of the past but also in response to the minor climatic fluctuations of more recent times. Present trends in forest composition consequent on the minor climatic variations of the past thousand years have been described elsewhere and I will make no attempt to recapitulate details. I would add, only, that in addition to climatic changes, major and minor, abnormal catastrophes have also played a significant part in the evolution of present-day vegetation patterns, the most notable, of course, be-



ing the volcanic catastrophies experienced over much of the North Island, though abnormal storms and earth movements have locally been significant factors elsewhere.

### **The Influence of Man on the Vegetation**

It is against this background of natural environmental and vegetational instability that the impact of man on the vegetation must be assessed. There can no longer be any doubt but that Polynesian man, from the time of his first arrival in the country, was responsible for the destruction of very large areas of forests by fire. In eastern South Island, however, we can rarely be sure to what extent the replacement of forest by grassland, in Maori times, was entirely due to fire. Over much of the area affected, particularly on the case of the old inland and upland matai and totara forests of Canterbury and Otago, the clearance of the forest was so complete, there is so little evidence of any trend towards forest regeneration, and there are such strong indications that present climates lie beyond the tolerable range of the destroyed forests, that we must suspect the operation of predisposing climatic factors. In other words, a trend toward replacement of these forests by grassland, or perhaps by forest of a more xerophytic type (beech forest) already existed. It is only in a few places of above average rainfall, where local temperature regimes are also favourable, that there is any indication that forest of the old type could re-develop.

Where beech forests were destroyed in pre-European times, regeneration was usually rapid and complete wherever seed sources survived the fires. This is clearly shown in the case of the extensive pole beech forests, with subsoil charcoals, of many North Canterbury mountain valleys. Seed sources, however, did not always survive and, over wide areas, the beech forests were also replaced by grassland. With respect to the grasslands, we do not know how widely or frequently these were burnt. We can only assume that, wherever forest was destroyed by fire, very great areas of the more readily inflammable tussock grassland were also burnt.

The exact extent of South Island mountain country affected by fire in pre-European times is likewise not known but the limits of the area affected were more or less those of the occupied high country of today. This means only that all fires, accidental or intentional, usually stopped short at about the same point no matter by whom they were set, by Polynesian man or by Europeans. The single major exception to this general rule, covering the case of the pole beech forests already mentioned, is only an apparent exception because most of these forests lie within the limits of the occupied high country or border it. In parenthesis, it may be said here that, contrary to popular opinion, the extent of mountain-land forest destroyed in European times, in comparison with that destroyed at an earlier date, was not very great. Much of it was, moreover, pole beech forest or scrub forest, itself of fire origin.

Beyond the limits of the South Island occupied high country, traces of ancient fires can rarely be picked up, and in almost every known instance it is clear that the area affected was very small. There may have been larger conflagrations but, if so, these were so long ago that all consequent fire patterns in the vegetation have been eliminated. In the North Island mountain forests, on the other hand, sign of fire is much more frequent and extensive though it is generally difficult, if not impossible, to distinguish between fires of early human origin and those of natural (volcanic) origin. Fire patterns definitely ascribable to human agency are, however, locally traceable in many places, e.g. in the Urewera county, about the Inland Patea, and in the forests of the northern Tararua range. The very extensive manuka and kamuka scrublands of the mountain country to the east of the Inland Patea, as elsewhere in central North Island, are probably of mixed origin, both Maori fires and volcanic catastrophies being involved.

There were probably other ways by which man modified or disturbed the mountain-land vegetation in pre-European times. Thus both the introduction of the native rat and the extermination of many species of birds undoubtedly had some effect, but these must remain matters for pure speculation. We will never know the facts. All that we can do is to keep such possibilities in mind. Fire must, however, always have been the principal factor on the modification of vegetation patterns and, concerning fire, the most important points have already been noted, namely, that the old patterns destroyed or modified by fire were themselves unlikely to have been stable patterns, and that the effects of fire were felt most drastically over that extent of country now known as the occupied high country.

The story of European times is too well known to need recapitulation. Summarising, we may note the rapidity of occupation of the eastern South Island mountain country from about the year 1855 onwards. This was necessarily accompanied by a prodigal use of fire in the clearance of rank growth, a great part of the country, judging from early descriptions of the height and density of the plant cover, not having been touched by fire for centuries, parts of it possibly having escaped pre-European fires altogether. The use of fire then became traditional and this traditional frequent use of fire in pastoral land management continued for more than fifty years, this also being the period over which sheep numbers climbed to a maximum because of a lack of suitable outlets for surplus stock. Depletion of the grasslands was consequently severe and this led, in turn, to the invasion of most of the high country by rabbits and therefore to continuing depletion despite a steady reduction in both stock numbers and in the use of fire. And, finally, this was also the period of the introduction and spread of many species of game animals, deer, chamois, thar and the like, other introduced animals such as goats, opossums, hares and pigs also contributing, widely or locally, towards the general rapid modification of the vegetation.



It was, in fact, a period of such profound and rapid change, consequent upon the operation of so many new factors at such varied levels of intensity and in so many permutations and combinations, that all details, both of the vegetation as it was and of the stages of modification through which it has passed, must forever remain obscure. And now, today, consequent upon the strict control of fire, control of rabbits, the partial replacement of sheep by cattle, and over-sowing and topdressing, a fresh series of changes leading to the development of still new patterns of mountain-land vegetation, has begun, the further modification of the vegetation beyond the limits of the occupied high country, by introduced wild animals, continuing apace.

### Conclusion

In effect, the situation can be summed up in one word. It is a word that has, perhaps, been used too frequently already but it is the only appropriate word. The situation is complex. It is complex in broad outline and it is just as complex in detail, for when we come to the study of individual land management units, be they river catchments or high-country sheep stations, we soon discover an infinite number of variations on the themes I have already outlined.

There are, in fact, no two mountain-land management units that present precisely the same set of management problems. As soon, therefore, as we begin to discuss management, or future management possibilities, which we are compelled to do because of increasing pressure on the mountain lands, we must avoid all generalisations. If we are to make any progress at all, each case must be considered entirely on its own merits, with a full appreciation of all factors involved — the geological character of the country to the extent that this dictates actual and potential rates of erosion; climatic and soil factors to the extent that these effect both rates and hazards of erosion and the capacity of the vegetation to respond to various management practices: the vegetation and the history of the vegetation with particular reference to points of weakness and to trends in condition and composition: the animals present, their requirements and probable future trends in population levels: and, finally, man and his requirements, long-term and short-term, compatible and incompatible.

The complexity of mountain-land issues, the steady growth of conflicting pressures on the mountain lands, and the need to avoid all generalisations, these are the thoughts I would leave to you. If these points are not widely appreciated, decisions can go, as already remarked to the most vociferous irrespective of the rights or wrongs of their case. The immediate requirement in mountain-land management, in New Zealand, is extreme caution. We can no longer afford to proceed by trial and error. Mistakes in mountain-land management can rarely be rectified.

## HAKEAS

DOUGLAS ELLIOTT (*New Plymouth*).

Several fine flowering branches of *Hakea laurina* were displayed at the May meeting in New Plymouth of the North Taranaki Council of the Institute. Good blooms of this plant are rare in this district where the climate is a bit too wet for its liking. It prefers a dry climate and extremely well drained soil. The exhibitor, Mr J. Edwards, said the plant was growing in very poor soil on a sunny slope in the grounds of the New Plymouth Hospital where he is head gardener.

What a fascinating flower this is. The young flower-head bursts out of a nutlike covering of brown scales that fall away to reveal a round cream coloured tassel about an inch across. It is a mass of loops made by the styles which are hooked inwards; each one is wrapped in a tubular petal which later splits at the top and rolls back towards the base. The style immediately straightens and the full-open flower-head is a spiked globe two inches or more in diameter. The styles remain cream, the petals turn first pink and then crimson. The buds will open on branches indoors. The common names of Sea Urchin and Pincushion Flower are quite apt.

The brownish-green leaves are long and leathery like gum leaves.

*Hakea laurina* is quick growing, frost tender when young, flowers in its third or fourth year if you are lucky, and eventually reaches a height of about 12 ft. Light annual pruning will keep it from growing straggly. Like many other Western Australian shrubs it is weak in the roots and needs staking during its first years if grown in a windy position.

Another beautiful species is *H. multilincata*. I have seen it in bloom only once and that was several years ago; but I still remember how striking it was. The flower-head is cylindrical, 3 to 6 in. long, and more or less like the Bottlebrush (*Callistemon*) and is a glowing rich rosy pink. In young bushes the flowers, which open around September, are inclined to be hidden by the dense gum-like foliage; they show up more in older plants which may be up to 10 ft. high.

Now we come to something quite different. Claimed to be the most spectacular foliage shrub of Australia, *H. cucullata* has hard metallic leaves 4 in. across, round or kidney-shaped, and enclosing the stems. The new ones are green but they change through yellow and orange to red as they age. A mature plant, which may eventually be 12 to 14 ft. high, displays all these colours at once. The flowers are cream or reddish and are followed by seeds which are so hard that a New Plymouth nurseryman tells me he has had to break their shells by crushing them in a vice.

Two hardy species, the willow-leaved *H. saligna* and the viciously thorny *H. acicularis*, have been used for quick shelter in north Auckland. They have both become naturalised and the thorny one has become a serious weed.

The hakeas are members of the *Protea* family.



**A HORTICULTURAL TRIP TO WESTERN AUSTRALIA***By W. R. STEVENS (Wanganui.)*

(Part II.)

On this long and really rush trip to the north of Perth there was little time to linger over flora which we would see again in other areas, and our driver, Kretch, was anxious to be on our way.

However, about 30 miles further on we made another brief stop. This was to inspect a small colony of *Dryandra polycephala* which was growing in gravelly clay soil just off the road. The plants were growing close together, rather drawn up, and completely covered with masses of pale yellow, circular, flowers. This species has proved to be quite amenable to our New Zealand condition, and flowers over a fairly long period. There are over 50 species of *Dryandra* — all of them confined to Western Australia. I confess that only a few of them appeal to me as garden subjects, for while the individual flowers are often striking, most of them have rather harsh if not prickly foliage, and an untidy habit of growth.

Again on our way Kretch sent the speedometer to over 80 miles an hour, but we were so absorbed in the country that we did not realise how fast we were travelling. Towards midday we reached the sand-plain country, and numerous colourful shrubs began to appear. A few miles further on we pulled up. Here we became really excited. The road on either side was just alive with colour — we could hardly wait to get out of the car. When I refer to roadside flora I mean just that — a flora confined to the side of the road, and not occurring in the country beyond on each side. This present day phenomenon requires some explanation. When the land was originally cleared for farming only the vegetation on the roadsides was spared complete extinction. In the process of forming roads with bulldozers, graders, etc. thousands of seedlings germinated, and not being eradicated by further disturbance, created in time a veritable garden. No attempt was made to preserve it — no need — it just grew and flourished. One peculiar aspect is the avoidance by the plants themselves of overcrowding, each plant seeming to have enough room to develop. The whole effect is that of an inspired landscape planting. Where overhead cover is absent thousands of smaller growing plants occur, such as *Stygidium*, *Goodenia*, *Conostylis*, *Hibbertia*, etc. The riot of colour in parts of the sand plain is almost overpowering. Wherever we gazed there seemed to be something new in blue, red, pink, yellow, or white. The excitement amongst our party was terrific, and the way we scattered reminded me of a dog trying to chase six rabbits at the same time, for no sooner had we admired one plant than someone would exclaim over another, until we became almost breathless. To New Zealanders used to an evergreen flora, never conspicuous for colour, this was an unforgettable, an explosive experience.

Predominant were the *Verticordia*, in particular, *V. picta* (rose pink) and *V. priessii* (yellow). These small shrubs, usually about 2 feet high and as much across, had so much flower that the foliage was hardly discernible. There were also *Grevillea*, *Hakea*, *Melaleuca*, *Dampiera* and a whole host of myrtaceous plants of which we could not even name the genus. In this respect we could perhaps be forgiven as it often takes a trained botanist to determine which is a *Thryptomene* or a *Scholtzia*, or a *Micromyrtus*. The same problem applies to various leguminous plants such as *Pultenaea*, *Daviesia*, *Gastrolobium*, *Sphaerolobium* etc. where the determining taxonomic distinction may lie only in the shape of the seed capsule. We knew that *Daviesia* always has a triangular seed capsule and *Hovea* generally has inflated seed capsules, but after that we fought a losing battle. A few species were quite distinctive such as *Isotropis cuneifolia*, a small leguminous plant about a foot high. This has yellow pea-shaped flowers, the backs of the standards being veined crimson, and is one of the so-called 'Poison Plants' in this case 'The Common Lamb Poison'. Although it is usually lambs which are lost from eating it, even grown sheep and cattle have been known to succumb to its virulence.

The country through which we were travelling gave the impression of being flat, but is, in fact, really undulating. As we topped each small rise we could see the road stretching for miles into the distance ahead. Most of the roads had a good surface, and fortunately there had not been any rain. When this occurs it is like driving over thin porridge, and high speeds are not advisable. Kretch did not stop as frequently as we should have liked but always when he did, some outstanding plant or plants would be the reason. I recall one such occasion when a patch of orange caught our eye and Kretch pulled up. Off the road in a deep depression were some magnificent specimens of *Grevillea excelsior*. This is one of the most outstanding tall shrubs of Western Australia. As we saw it that day, with its gorgeous upright spikes of orange flowers against a background of clear blue sky, it made a picture which will remain with us as an unforgettable memory. Unfortunately this species seems to be a difficult one to establish in gardens.

From there on the land on either side of the road had occasionally gone back to 'bush'. Probably it was extra poor land and uneconomic for farming. In these areas the scrub was rather higher, sometimes up to 15ft. with a mixed flora of *Acacia*, *Hakea*, etc. In one area we found some magnificent specimens of *Pityrodia axillaris*, about 3 feet high in full flower. This is a soft wooded shrub belonging to the *Verbena* family, and has flowers resembling a miniature foxglove.



The colour of the flowers is normally in shades of pink, but we found some specimens with glorious rich rose flowers that just made our mouths water. A small growing shrub on the side of the road aroused, our curiosity. This proved on examination to be *Duboisia hopwoodii* (*Solanaceae*). The aborigines call it Pituri, and it was much valued by them as a narcotic. Generally found growing in the interior, it was surprising to find it here, not much more than 100 miles from the coast. In habit it resembles a slender *Pittosporum*, and has small white flowers streaked with violet. The plant contains nicotine and is extremely poisonous to stock. The amazing part about it is that birds eat the berries without any ill effect. Towards the end of the day the type of country altered, no longer sand plain but granite, and much drier conditions prevailed. On one rocky outcrop we stopped to inspect a small colony of *Dodonaea* which were extremely colourful. They were only about 3 feet high with seed capsules of browns, golds, and crimsons. Here we saw our first kangaroos, quite an experience for us. It was well after dark when we reached Mt. Magnet, an old mining town, and the first hotel had no vacancies. Fortunately there were two other hotels and by splitting up our party we managed to get accommodation for the night. Kretch had done a wonderful job at the wheel, and despite our many stops we were now over 300 miles from Perth. It had been an exhausting day for all of us, but the stimulating experience of seeing all these new plants was, we agreed, worth being even more tired.

Next morning we were off again, still going north. The road deteriorated badly and was a constant succession of potholes. Some miles on the way we came to Lake Austin, our first experience of a salt lake. It covered a considerable area and was for the most part completely dry, though as we drove around its shores mirages appearing and disappearing, showed it full of water. In this saline area the only plants we saw were *Mesembryanthemum* and *Kochia* species. A picture of desolation and emptiness, it was with a feeling of relief that we ran out of it. Soon after this a rock on the road, thrown up by the car, struck the benzine tank, which on examination proved to have begun to leak. Kretch had apparently had this happen before as he immediately dug out some milk powder and asked if any of us carried any soap. On our producing the soap he shaved off a quantity of thin flakes and ground them into a paste with the milk powder and a little water. When this was worked to a nice consistency it was applied to the leak. It was not a first class repair job, but it did enable us to reach Cue, the next sign of habitation and another ghost town from the mining days, where a mechanic of sorts made some kind of very temporary repairs.

The vegetation in this area was very sparse, mostly Mulga (*Acacia aneura*), various *Eremophila*, and *Hakea* species. An area with an average rainfall of 10 inches, that year the rain had been well below average and we wondered how any shrubs could survive in such terribly dry 'soil'. We were passed a piece of  $\frac{1}{2}$  inch steel pipe one end of which had had the edges sharpened, and were invited to drive it into the ground to a depth of 1ft. On pulling out the pipe we found that the soil brought up from below was not dry at all, but on the other hand was dark with moisture! This seemed so incredible that we repeated the experiment in several areas, always with the same result. Apparently the sandy granite soil becomes so compacted that little evaporation takes place.

It turned out that Kretch had brought us this far north in the hope that he could show us the Sturt Pea (*Cliaxthus formosus*) in flower, but due to lack of any rain in the area in the previous months no seed had germinated and we did not see a single plant. Reports from some of the residents at Cue were that we should have to travel much further north to see them that year. So as time was getting on we decided to turn back towards Perth for the home run. We took a different road, turning west towards the coast, but despite fast driving we were still a long way from any settlement — and hotel — when it grew dark. Darkness meant driving at a much lower speed to avoid collisions on the road with kangaroos. These animals have a nasty habit of crossing the road at any moment and cars have been badly damaged through hitting them. At Mt. Magnet we had been intrigued to see cars equipped with a large and heavy grill in the front of the radiators, and now we really understood their significance. If a kangaroo hit the grill it prevented damage to the car if not to the kangaroo. Kretch asked us all to watch the sides of the road and warn him when any animal was attempting to cross. The speed was dropped to no more than 50 miles an hour, but despite our vigilance one kangaroo was too quick for us and Kretch was forced to brake very suddenly. This saved us from hitting the 'roo squarely but even so we caught its tail, somersaulting it to the side of the road, after which it made off in a real hurry. Fortunately no damage was sustained by the car, but I doubt if the animal would be hopping so far or so fast for the next few days.

Around about 10 p.m. we arrived at Yalgoo, to find the only hotel full — and more than full. However the proprietress did a wonderful job of juggling and most of us had beds set up on the verandah, the two women of the party being accommodated in the office.



In the morning we had a brief look around this small town before breakfast. We were intrigued with a climbing plant against an old shed. It had clusters of orange flowers about an inch long, in great profusion, and was particularly showy. It proved to be *Marianthus ringens*, (*Pittosporaceae*), and we found out later that it was native in the Chapman River district north of Perth. It is now getting very rare. Incidentally this lovely climber is proving to be a very accommodating plant with me, as it grows easily and flowers in the second year from seed. A vigorous small climber, it continues to flower over a long period. Depending on how hardy it proves to be this plant may prove a worthy addition to our somewhat limited range of decorative light climbers.

After breakfast we set off again on our homeward run, and as the country did not appear to offer much of new interest Kretch pushed the car along. However as we were passing some rather heavy shrub area there was a shout from my wife to STOP! Kretch did not seem too pleased and as he brought the car to a standstill he remarked that he hoped it was worthwhile. My wife also hoped it would prove worthwhile but was secretly a bit worried as all she had seen was a flash of colour on the road edge which she had not been able to identify. Kretch backed the car 300 yards until we saw the plant which had caused the request to stop. I was really dumfounded when I saw what it was, as I had told my wife it was really rare, and we would be most unlikely to be so fortunate as to see it on this trip. It was *Prostanthera magnifica*, and never was a plant more truly named! The flowers are pale lilac-blue, set off by a large calyx of rich brown-toned maroon, and a bush in flower presents a very striking effect. Only three specimens were found although we searched over a large area. I had not, and have not, heard of this plant being established in any garden, and every effort should be made to do so before it becomes extinct. Unfortunately it is very difficult to raise from seed but it should be possible to propagate it from cuttings. This is a classic example of the need to establish an arboretum in Western Australia. There are hundreds of meritorious plants in just such danger of extinction. Kretch was not only reconciled to the stop but excited enough to take colour photographs, and of course my wife was not only relieved but also delighted to have seen a plant I had raved about, from having seen it on a previous visit to Western Australia. For the next few miles we could talk of nothing else until we came to a very interesting area. Here we found quite a number of plants of *Leschenaultia macrantha*. This is an extraordinary species as it forms a flat mound the broad outer margin of which is smothered with the brilliant blossom, whilst the centre shows only the thick green foliage, giving the effect of a lovely wreath. The whole flat shape lies close to the ground, and is only 4ins in height. The flowers are

primrose and pale red in a bicolor effect, the individual blossoms being double the size of those of *Leschenaultia biloba*, but of the same shape. The soil in which this plant grows resembles the base of an old used gravel pit such as we see in many parts of New Zealand. It would have taken a sharp pick and a lot of labour to dig out even one small plant.

In a sandy thicket nearby we found isolated specimens of *Balau-stion microphyllum* with its masses of brilliant orange red flowers reminiscent of small fruits of a pomegranate. This grew about a foot high, mostly snuggled up against the base of a taller growing plant. This will be a difficult plant to acquire for gardens as germination from seed is almost unheard of.

We were well satisfied with our finds for the morning and drove on with a nice sense of contentment.

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## SUMMING UP

By MAUDE HAINES (Wellington.)

I have been asked to write this article on Gardening, after a long life of horticulture. If it may savour a little of 'Self-glory', I can assure readers that it is written with the utmost humility, and is simply a review of the force that always impelled me onwards.

I have known only two gardens — that of my youth, and the one after my marriage.

Gardening was born into the very fibre of my being. My mother, who loved flowers and all things beautiful, deeply instilled into her children this love of Nature.

We lived in a romantic garden, tucked away, and yet with a distant view, which had originally been carved out of Native bush, and adjoining about 40 acres of primeval forest. There were streams, giant trees festooned in spring with white clematis, gullies to swing across, and the untouched forest floor, where grew white violets, green orchids, heaths, celmisias, wild strawberries, and many other native treasures. What precious memories! This was my first garden.

Now, on to my second garden — this one at Kelburn, Wellington,  $\frac{3}{4}$  acres in extent, where I have resided for the past 40 years. It was entirely different in character — a rather steep hillside, with hungry soil, but with a wide-spreading view, overlooking the trees of the Botanical Gardens and on to the Tararua Ranges beyond. The original and only owners had carved out zig-zag paths, with numerous wooden terraces, and planted with many fruit trees.



Provisionally, there was recommended to me a young gardener, not long out from Northern Ireland, who was well-versed in horticulture, grafting, and bee-keeping. 'Call me John,' he said simply, and 'John' he was for all the 20 happy years we spent together in this garden, until he had to retire after an illness.

The first thing he did was to re-shape the many apple trees, which had grown lankily tall, and made them into inverted umbrellas. He attended, at the correct times, to the pruning and spraying, and altogether the trees were a credit to him.

Then he induced me to plant a grape vine, which flourished on one of the warm terraces. Also he brought along a hive of bees, as he thought they would help in pollination, in addition to the honey, which, with startling success, was more than we could possibly consume.

All the time, I was gradually improving the soil with humus, and doing some long-term planting. I put in many, many, camellias, spring blossom trees, rhododendrons, a Judas tree, and 5 magnolias. These are now all giant specimens, and are the greatest joy, as one's activities naturally get curtailed with age. I would also like to mention that dainty shrub, *Prunus incisa*, given to me by a kind friend, which puts on an exquisite (if brief) display of lacy white in spring, like a bride adorned for her husband.

I consider, with a background of established trees, if one had some fuchsias, roses, *Iris* and, say, carnations, one would never be without flowers. These all mean a lot to me, as I am just as interested in lovely indoor decoration. I still manage to keep some pockets of small treasures, such as *Narcissus minor*, English snowdrops, fritillarias, rock cyclamen, white and sky blue *Muscari*; also 3 terraces of 'Old Roses', which have a special place in my heart.

After a time, the wooden terraces began to decay, and John volunteered to replace them in stone, at which he was an expert, having learned the art in Ireland. As the work proceeded, I had all the material delivered to each terrace; and, after 5 years' gradual part-time work, all were replaced with stone. What an achievement for any one man!

As the years pass, I still find the *Camellia* season the most exciting and thrilling of all. The many exquisite and new varieties are most tempting, but eventually there comes a time when one must say 'Finis', for sheer lack of space. Of all my many varieties, these are still my favourites:

'Magnoliaeflora Alba' (beautiful for indoor decoration).

'Il Cigno' ('Shiragiku') (that flower of matchless symmetry and perfection).

'Phyl. Doak' (like a lovely tree peony or Chinese flower print).

'Frau Mimma Seidel' ('Pink Perfection').

'Gauntlettii' ('Sode-Gakushi') (double white and lovely).

'Ellen Sampson' (for magnificence and robust constitution, and also because it was distributed throughout the world from this garden).

'Hana Fuki' (unusual and cup-shaped).

These are only just a few special favourites, but of course there are many others.

Size in camellias does not mean everything to me, as I rather lean towards those with charm, and I like substance. Mind you, one has to wait for camellias. They become better with age, and you cannot judge any camellia on its first two or three years' performance.

I am fortunate in having raised some good seedlings of my own — one especially outstanding, of unusually good substance, which is being registered under my name. Another one, just flowered for the first time, has intrigued me — somewhat like a 'Gauntlettii', only the most delicate pink and very crinkly.

This record would not be complete without telling you of the wonderful umbrella tree which John grafted. That great gardener, the late Mr Kingsbeer, of Palmerston North, grew on for me a tall cherry standard, 6½ft., on to which John grafted small scions of *Prunus subhirtella* 'Pendula Rosea' (the Rosebud Cherry of Japan). It is now a magnificent specimen, like a giant pink cloud, with a spread of 18ft. When planting, it should be set very straight (with a spirit-level, if wise), for it will never look right if leaning in any direction. At first, the scions 'weep' in the most graceful manner, like a weeping willow, but eventually these gradually elevate themselves, until they are almost horizontal, like a great umbrella.

I always regret I did not put in my garden that Queen of magnolias (*campbellii*), but I do have the satisfaction of knowing that I planted, about 30 years ago, the magnificent specimen seen today in our beautiful Botanical Gardens on the main path, and which is always a glory in early August. In 1937, I also planted one in the Kelburn Rhododendron Dell, and another donated by a friend, and these are now spectacular in season.

These notes touch merely the very fringe of my adventures in gardening. Hard work? Yes — but there comes a peace which passeth understanding when working in a garden. I often carry a small magnifying glass to study the wonders of the tiny flowers — a forget-me-not, mignonette, the veining of a skeleton leaf! The more powerful the glass, the more perfect the specimen.

'Some of us call it Nature  
And others call it God'.



**A CASSIA OF QUALITY.***DOUGLAS ELLIOTT (New Plymouth).*

It is tantalising to come across plants we cannot buy, but, if some rarity is growing well in this country, there is always a strong possibility that, first, there will be a demand for it, and, second, it will be propagated.

Such a plant is *Cassia multijuga*, which I saw in flower, for the first time, last summer. I took the photograph of it at the end of March. It had already been in bloom for two or three weeks and continued to flower for about another month—good value in a flowering tree.

The individual flowers are like most of the other cassias with which we are familiar in this country: yellow, with an irregular petal formation. But the flower-head itself is something quite unusual; it is so large—about 1 foot long and 6 to 8 inches through at the base.

The leaves are pinnate and have very numerous pairs of leaflets, from 18 to 40; this feature, which is recorded in the name *multijuga*, which means many pairs of leaves, makes the tree a handsome one even without flowers. The branching habit is open and gives the plant an appealing lightness. The height of the specimen growing in New Plymouth is at present about 12 feet and according to *Hortus Secund* it may reach 20 feet. Since the tip of every branch bears a flower-head, the tree in full bloom is really spectacular.

*Cassia multijuga* is a native of South America and the West Indies. I only hope it will soon be made available to gardeners.

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**LODER CUP AWARD, 1963.**

The sedate atmosphere of the Dominion Museum in Wellington lent a quiet dignity to the very happy occasion held there on the evening of 3rd December last when the Minister of Agriculture (Hon. B. E. Talboys) presented the Loder Cup to Miss Nancy M. Adams of Wellington, winner of the Award for 1963.

'It is thirteen years since the Cup was last awarded to a Wellington citizen', said His Worship the Mayor of Wellington (Mr F. J. Kitts), who presided over a very representative gathering. He felt Miss Adams had brought a high honour to the City.

In the course of his address, before presenting the Cup to Miss Adams, the Minister said that she had combined the rare qualities of artistry and accuracy in her illustrations of native flora, and that her drawings were also of very practical value.

'Her illustrations in school bulletins have helped to foster a love of the native flora early in life. If winning this Cup brings honour to Miss Adams, I'm equally certain that her name on it will bring honour to the Cup', said the Minister.

Professor G. T. S. Baylis of Otago University compared Miss Adams' work, as an illustrator of New Zealand plants, with that of her two principal predecessors — Sydney Parkinson and Matilda Smith. He eulogised her draughtsmanship and artistry, which were so necessary to exploit her advantage in knowing the plants intimately in their natural habitats — whereas Parkinson worked on specimens brought aboard Captain Cook's *Endeavour* and Miss Smith worked with pickled and pressed plants sent to Kew by T. F. Cheeseman.

'In choosing to make the Award to Miss Adams in the year of publication of *Trees and Shrubs of New Zealand* the Loder Cup Committee had also complimented her co-author Mr A. L. Poole (Director-General of the New Zealand Forest Service)', said Professor Baylis.

The chairman of the Loder Cup Committee, Mr A. M. W. Greig, Director of Horticulture, gave a resume of the history and objects of the Award, and outlined the policy of the Committee in its consideration of nominations received each year. He hoped that organisations would maintain their interest and continue to forward nominations each year.

Dr. R. A. Falla, Director of the Dominion Museum, paid tribute to the early botanical training received by Miss Adams while she was employed with the Botany Division of the Department of Scientific and Industrial Research. Mr J. D. Coulter, President of the Wellington Botanical Society, spoke very appreciatively of the work of Miss Adams in that Society.



Miss Adams received the Cup, the inscribed Certificate, and a photograph of the Cup, at the hands of the Minister amidst the warm applause of those gathered.

In suitable words of reply, Miss Adams expressed her gratitude for the high honour accorded to her so early in her working career.

The very happy function closed with the serving of supper provided by members of the Wellington Botanical Society, staff of the Museum, and friends.

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## NOTES FROM THE CHRISTCHURCH BOTANIC GARDENS.

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

The year 1963 was a memorable one in quite a number of ways but Christchurch gardeners will probably remember it best for the vicissitudes of the weather which were experienced here. The weather went from one extreme to another and most gardeners will probably agree that the latter half of the year was about the worst in living memory as far as gardening was concerned. Although January last year registered the highest temperature (97.3°F) recorded in Christchurch during nearly 100 years, 1963 was the coldest for 10 years. The winter was cold and wet and the worst for 18 years, while July produced the worst weather for that month for 25 years.

On November 7th a frost of 5.7°F caused widespread damage, especially to young growth. Damage in the Botanic Gardens was patchy and many plants escaped without damage. The young growths on many camellias were badly frosted and while the soft stems were not damaged complete defoliation of these growths followed. Cultivars of *Camellia japonica* were the worst affected with *C. x williamsii* cultivars being not quite so badly affected; *C. sasanqua* cultivars suffered only minor damage to the young growths and *C. reticulata* 'Captain Rawes' suffered no damage whatsoever and thereby proved itself the hardiest.

Although the roses appeared to have escaped without damage it became quite evident when the first blooming commenced that the flower buds had been affected and most flowers were malformed. Some of the colours had also been slightly affected and in order to avoid a poor display it was necessary to almost completely disbud all bushes.

The cherry-laurel, *Prunus laurocerasus*, had all of its young growths frosted and many rhododendrons suffered in varying degrees according to the type. In some parts of the Gardens quite a number of comparatively tender plants are growing and with one or two exceptions none suffered any damage.

Although conditions throughout the year were comparatively cold, the worst feature of the weather, as far as horticulture was concerned, was the general lack of sunshine. In fact 1963 had the third lowest number of sunshine hours on record. This, as much as anything, upset plant growth and caused difficulty with certain crops. One very noticeable feature has been the lateness of many plants and crops, and quite a number have been a week to several weeks late in flowering.

In December the first 18 days were practically rainless with temperature above average, and everybody began to think that the weather was at last making amends. However, to cap everything a vicious southerly storm ripped through the province on December 20th, and caused widespread damage to plants. With 4.26 inches of rain in 24 hours the storm gave Christchurch its second highest daily rainfall. While such falls of rain may not be unusual in other parts of the country, for Christchurch it is really phenomenal, as may be gauged by the fact that, in the last 60 years, the daily rainfall at any one time has exceeded 3 inches on only seven occasions. The worst effect of this storm was the sharp drop of up to 10 degrees in earth temperatures which followed. It was about 10 days before they returned to normal, and this has had a most marked effect on plant growth. Many of the bedding displays are still showing the effects of this by being very slow to get away into growth.

Throughout the Botanic Gardens and Hagley Park quite a number of large branches were torn from trees and the amount of small debris, such as leaves, branchlets and cones, which had to be cleaned up was unbelievable. Fortunately none of the valuable trees were damaged. However, it will be some time before all the damage can be repaired. Then to round off the year properly and while the staff was still labouring to clean up after the pre-Christmas storm, a nor-west gale on New Year's Eve produced a gust of 63 m.p.h. and brought down a few more branches.

Leaving last year's weather and its rather sorry tale let us now turn to one of the most pleasant parts of the Gardens and consider a few of the plants which grow therein. During the summer months when conditions are warm and inclined to be oppressive, one of the most restful parts of the Gardens is the Bog Garden. With cool walks, quiet sunny corners and the tranquil waters of the lake it invites visitors to be more leisurely with their wanderings, and to take time to admire the plants growing around the water's edge.

One outstanding plant is *Filipendula camtschatica* which grows 6-10 feet in height. As the name suggests it is a native of Kamchatka and also Manchuria, and with its dark green foliage and foamy panicles of creamy-coloured flowers makes a fine subject for the waterside. Equally bold in its appearance although lacking the stature of the *Filipendula*



is *Ligularia dentata*. This plant has been variously known as *L. clivorum* and *Senecio clivorum*. However, recent work gives us *Ligularia dentata* as its correct name. Whatever its name it is nonetheless a very decorative species. It grows 3-4 feet in height with large reniform leaves up to 20 inches across on long petioles. The flowering stems are stout and the bright orange flowers are carried in rather crowded heads. The purplish-leaved variety, *L. dentata* 'Othello' is also very handsome. *Ligularia* requires a very moist soil and even when growing around the edge of water the foliage sometimes wilts on very hot days.

Another plant which favours a wet soil by the edge of water is the elecampane or *Inula helzenium*. This is another large growing perennial up to 6 feet or so in height. The foliage is bold and the oblong leaves measure 2 feet or more long. It is a native of Europe and the thick root stocks are used medicinally.

The plantain lilies or *Hosta* are excellent plants for such situations and in January *Hosta ventricosa* is most attractive with its tall stems of purple-blue flowers and broad, dark-green foliage. It grows up to 3 feet or so in height and may be regarded as one of the best species of *Hosta*. Probably the most spectacular from a floral point of view is *H. plantaginea* from China and Japan. This species has medium sized, bright green foliage and the white flowers are 4 inches or more long, trumpet shaped, and fragrant. Green sheathing bracts at the base of each flower add to the beauty. *Hosta sieboldiana* 'Elegans' is the most magnificent of the genus and is excellent for planting in shady places, or by water. It makes large clumps and the leaf blades frequently measure 12 x 10 inches. The veins give the leaf a heavily ribbed almost rugulose appearance and both surfaces are quite glaucous. The flower stems rise just clear of the leaves and the lilac-grey flowers harmonise perfectly with the foliage.

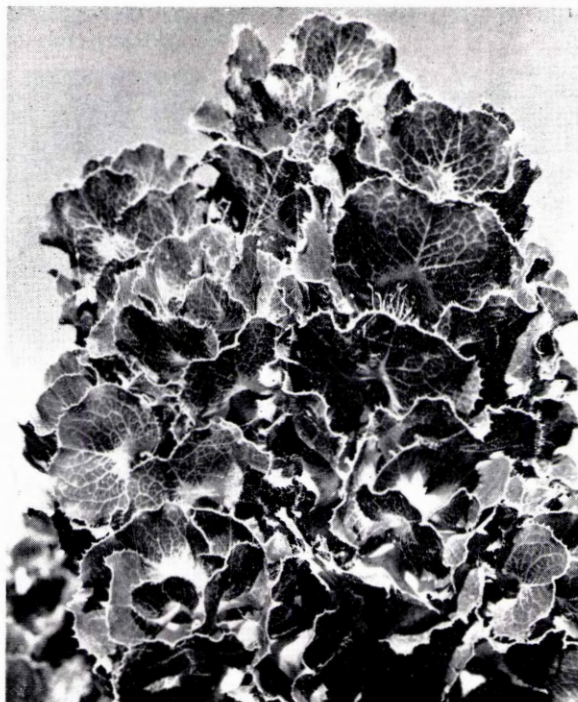
Finally another little known plant is *Lysimachia punctata* from Asia Minor. This is a long flowering perennial belonging to the *Primulaceae* and it revels in a moist situation. It grows 2-3 feet in height with the leaves and flowers carried in whorls. The flowers are about 1 inch across and bright yellow with a brownish centre. Not only is this quite a showy plant throughout the summer months but it is quite good for cutting too.

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## NOTES FROM DUNEDIN

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

In public parks and gardens, as well as in the home garden, many plants are grown that have a period of great attraction when in flower, fruit or in the autumn. Because of beauty of form, habit or foliage they are also pleasant companions to have at all times of the year. There are others that are often included in a garden design for their worth at certain times of the year which can be rather a problem



*Hakea cucullata*

(See Page 249)

(Photo: Douglas Elliott)



*Marianthus ringens*

(See Page 254)

(Photo: E. G. Gibbs)



MAN AND THE MOUNTAIN LANDS (See Page 240)

Four of the many classes of mountain-land are shown in the illustrations accompanying this paper. It would have been as easy to have chosen 400, each illustrating a distinct complex of watershed management problems.



Block-faulted, tilted, schist uplands in central Otago. Rainfall less than 20ins. in valleys rising to 50ins. plus at higher altitudes. Once forested at least in part but these forests were destroyed long before the arrival of Europeans. The grasslands severely depleted by fire, and past-overgrazing by sheep and rabbits but now responding favourably to rabbit and fire control and improved stock management. Primary object of management — pastoral production.

Solid rock highlands in western Nelson. Rainfall 150-200ins. Moderate to slight erosion risk. Red, silver and mountain beech forests and extensive alpine grasslands largely of unpalatable species. Moderate past grazing by sheep and, in the valley, by cattle but no current pastoral occupation. Primary object of management — control of water yield for hydro-electric generation.



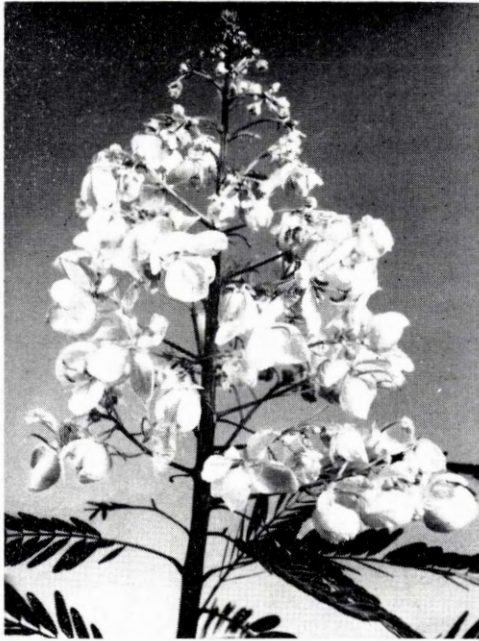
Recently uplifted alpine schist highlands in central Westland, the schists merging into greywackes towards the main divide. Rainfall 100ins. plus along the foothills, rising to above 300ins. per annum in the river headwaters. Kamahirata forest, with some podocarps at low altitudes, in early stages of modification by red deer and opossum. Recently killed rata are conspicuous on the mid-slopes. Depletion of the subalpine scrubland and alpine grassland by deer, chamois, and increasingly, thar. Primary object of management — river control.

(All photos: J. Johns: N.Z. Forest Service).

Greywacke country in Canterbury. Rainfall 50-80ins. with heavy winter snow, severe frost action and severe wind exposure. The greywacke is intensely faulted and shattered and is overlain with deep unconsolidated deposits of erosional detritus. Soils wind deposited and unstable without a protective mantle of vegetation. Forests (mountain beech) burnt in Maori times and again in European times. Grazed by sheep and rabbits for 60 years and today by deer, chamois and hares. Primary object of management — watershed repair.







*Cassia multijuga*  
(See Page 258)

(Photo: Douglas Elliott)



*Prunus subhirtella 'Pendula Rosea'* (See Page 257)



when out of season. A typical example of the latter type is the modern bearded *Iris*.

Irises of this kind can be very useful plants. From early spring, the gradual development of the sword-like leaves, followed by the swelling flower buds, make them very effective in a mixed flower border or as isolated clumps. The large and colourful blooms open in November when the main mass of spring flowers such as tulips, polyanthus, wall-flowers, azaleas and rhododendrons are past their best.

Bearded irises are indispensable in any garden or landscape scheme where continuity of display throughout the year is the aim, as they help to fill that gap between spring and summer. From December onwards, however, they can be a liability, particularly when used for mass effect. The area they occupy, usually for several years, is difficult to inter-crop effectively with another floral display, owing to the vigorous rooting system of the irises and the untidiness of their ripening foliage. Even when the time does come for lifting, dividing and replanting in a different site, it is almost too late in the season to produce another satisfactory display from the ground left vacant.

As usually happens when on holiday, a visit was paid recently to a park in another district. A gardener engaged in weeding and dead-heading a large formal display of these irises, which must have made a spectacular show six weeks before, asked rather plaintively how we grew them in our locality. Was there not some way whereby the anticlimax of a complete lack of interest, following on such a colourful feature, could be avoided? It was pleasing to be able to say that a similar problem with us had to a large extent been solved.

At one time in the Dunedin Botanic Gardens the extensive bearded *Iris* collection was grown in a series of large rectangular beds set out formally in a large area of lawn. *Montbretia* were inter-planted amongst the *Iris* clumps to lengthen the period of display, the general effect leaving something to be desired. At the Otago Centennial Flower Show held in the Dunedin Town Hall in February 1948, the central theme depicted a 'Wheel of Time'. Some of the profits of this show were allotted to the Botanic Gardens, to be used to perpetuate this theme in a new *Iris* Garden. This feature was designed shortly afterwards and formed in an open sunny position in the Lower Gardens, near the site of the former *Iris* beds. It is now a well known focal point there. At the same time, a completely new collection of modern varieties was assembled and propagated in the Botanic Gardens nursery in readiness for planting out when required. The new design, though formal, was planned to be of interest at all times by the very nature of its construction, rather than by relying on flowers alone. Circular in design, it comprises a series of terraces and stone walls, gradually descending to a sunken pool and fountain in the centre. The

whole planted area is surrounded by a broad grass walk contained within a circular hedge of *Lonicera nitida*. The 'Wheel of Time' theme is depicted in the hedge, which commences at a height of 1 foot at one side of the entrance steps, rising to a height of 4 feet at the other side after forming a full circle, and in the interior circular design with broad spokes formed by the different *Iris* varieties and the careful blending of their colours. It is hoped to continue the theme in the fountain jets when some vandal and child proof construction can be devised. The dry terrace walls are built of Halswell walling stone, and the steps and paths of Halswell paving stone. Several ornamental urns adorn the entrance steps.

An open sunny site, protected on most sides by distant specimen trees and shrubberies, as well as by the hedge and sunken terraces, has provided ideal conditions for healthy growth undamaged by wind and for free flowering. One drawback, however, is that the planting site is constant. Bearded irises are gross feeders, and as the rhizomes increase rapidly impoverishment of the soil, and overcrowding, do not take long. The best results are obtained by lifting, dividing and replanting in fresh ground every few years. Although the recommended manurial treatment has been carried out from year to year, and a certain amount of fresh soil added when division and replanting took place, the display of bloom has gradually tended to deteriorate. As a consequence, drastic measures were taken at the end of the 1961 flowering season. The whole collection was lifted, split up and lined out in the nursery. Some soil was excavated from the terraced beds and replaced with fresh, while an extremely heavy dressing of rich compost was dug in. East Lothian stocks, selected because, in common with bearded irises, they like alkaline conditions, were planted in early autumn for a massed spring display. In December 1962 the *Iris* collection was replanted, many varieties having been replaced with newer and better ones. Blocks of each variety vary in number from 9 to 18, according to their position, 40 carefully selected varieties in all being used. As young, strong-growing nursery clumps were used, opportunity was taken to lift carefully and transplant complete units of five or six rhizomes instead of the usual fan of two or three rhizomes. The anticipated free flowering the first season was fully realised, for the crop of flowers last November — both in number and quality — provided one of the best displays that has been grown there. Vigorous growth, as well, will entail subdivision again after another season.

A number of associated plants have been used in the Iris Garden that flower at the same time as the irises, and others to prolong the season of interest. These have been mostly rock garden subjects such as *Aubrieta*, *Dianthus*, dwarf *Iris*, *Crocus* — for the terrace borders and walls. A number of semi-dwarf conifers help to blend the steps with paths and terraces.



**NOTES FROM PUKEKURA PARK***A. D. JELLYMAN, N.D.H. (N.Z.)*

New Plymouth has experienced its driest season since 1914, when 39.80 inches fell. The 1963 rainfall was a little over 44 inches, compared with the average fall of 61.22 inches. Despite this lack of rain, the sunshine hours have diminished by some 70 hours at mid-December to bring the year's tally to 2025 sunshine hours. October was the driest since meteorological records have been kept in New Plymouth — for 93 years — when less than a half inch fell, compared with the October average of 5.8 inches.

The effects of the dry season have been reflected by the shortness of flowering seen in the rhododendrons, which flower much better and over a longer period, during light showery weather. However more distinctive in New Plymouth were the numerous plants of *Furcraea bedinghausii* that have flowered. *Furcraea bedinghausii* has a trunk up to 10 feet high which is clothed by the reflexed dead and living leaves. When not in flower, the leaves, which measure up to 3 feet and more in length, unfurl from a central shoot and as they mature, gradually reflex to eventually lie down the stem in much the same manner as do the fronds of *Dicksonia fibrosa*. When the flower stem appears the surrounding leaves assume a more cabbage-tree-green compared with the darker glaucous green of the normal leaves. The flower stem emerges in September and grows rapidly to reach a height of 15 feet, and then gradually the side branches unfold from their spathes and one by one the hanging green and white flowers burst open. When in full bloom the overall effect of the plant is quite beautiful, with the flowers hanging from graceful, pendulous branches of the solitary erect stalk. *Furcraea bedinghausii* has a finely toothed margin to its leaves, and is sometimes confused with *F. longava*.

Another thrill that has been given to us by the dry season is the first flowering of our *Puya alpestris* at Brooklands Park. These plants are native to the South American continent and are found mostly at high altitudes in the Cordilleras. There are 80 species, most of which die after they have seeded, although some species branch out from the lower leaves. *Puya alpestris* seems to be the most widely grown species in New Zealand, and is distinguished by the tips of the side branches being covered in bracts while the flowers come only part way along the stems. Considerable interest has been caused by the variation found in our flowering plants and also one at Duncan and Davies' nurseries. Our first plant to flower had a stout inflorescence and the three petalled flowers were a bluish green with bright orange anthers. At the same time Duncan and Davies' specimen flowered and in contrast the blooms

were a deeper blue-black colour again with orange anthers. After this another plant bloomed, this time with blue flowers, lighter than Duncan and Davies' plant, but with creamy-white anthers, and a third plant flowered with blooms similar to the last mentioned, but with orange anthers. As far as can be ascertained all these plants came from the same seed sources, but whether or not the seed had a mixed parentage I would be most interested to know; certainly, the variation I have seen locally seems to point in this direction.

Every Park and Reserves Department does a certain amount of street tree planting, and in selecting subjects for this planting the cardinal rules must be kept in mind. Plants must be attractive for the greater part of the year, and summer shade trees must give the maximum shade in summer and maximum sunlight during the winter months. Where overhead reticulation is present, plants must be chosen that will not grow too tall to cause line interference. Besides this, trees to be planted in streets must be well grown to stand the rigours of exposure and the elements. Most towns concentrate on deciduous trees and shrubs for this purpose, and while these are the conventional lines to use there are definite possibilities in the use of evergreen shrubs.

In New Plymouth there are a number of streets now planted with a variety of evergreens which are all doing remarkably well.

One of the first streets to be planted was in a state housing area. It was planted with *Chamaecyparis obtusa* 'Crippsii'. Today plants are over 10 years old and despite the pruning by passers-by all have formed low bushes of golden foliage 3 feet high. The overall appearance of this street is remarkably effective. More recently plantings of *Euonymus japonica* 'Variegata' have been made and now the best of these have grown to 7 feet high, columnar plants, ideal for narrow berms. A successful planting was made in a very exposed street of *Photinia glabra* 'Robusta' and the spring time display of these is most attractive.

Another plant with a future is the *Camellia*. *C. japonica* have been used but I feel are a little bit harsh in outline to look at home, but *C. saluenensis* and *C. sasanqua* are really ideal. These plants will stand considerable exposure and flower very freely.

Being a coastal town, we also have to contend with salt spray from the prevailing westerly and the northerly, and suitable plants must be chosen. *Banksia integrifolia* is flourishing in one street and gives a good indication as a useful tree in future. While both the Kermadec and New Zealand pohutukawas are planted here, they really grow too large ultimately for streets, but the excellence of *Metrosideros excelsa* 'Variegata' cannot be underestimated. It is attractive in foliage and flower and does not seem to attain the proportions of its mentioned relatives. One of the streets in Frankleigh Park has a short avenue of scarlet gums, *Eucalyptus ficifolia*, now quite some years old and all



of these bloom profusely each summer; they stand salt wind and re-furnish readily so may be pruned when necessary. *E. ficifolia* has been featured in a berm along the main southern entrance to New Plymouth, the planting being made this last winter. While dealing with myrtles I must mention the success we have had with *Callistemon citrinus* 'Splendens'. To be easily established, plants need to be sturdy, well grown specimens up to 3 feet high. Now that nurseries are handling these plants more frequently cut in the open ground high quality plants should be available for this purpose. The streets now planted with *Callistemon citrinus* 'Splendens' are really spectacular during November and December. In their early years plants will need yearly pruning, but, once established, pruning need only be done once in several years. Plantings have also been made of *C. violacea*, and *C. speciosa*, but the same response has not been forthcoming.

Another plant used is the Norfolk Island 'Hibiscus', *Lagunaria pattersonii*. When young it forms a dense bush but later on it may be limited to a single trunk to form a small tree, and, providing at its more mature years it is tastefully pruned, I see no reason why it should not continue as a successful street tree. Also of use in coastal areas are the various *Pseudopanax* hybrids and varieties, which once established make attractive small trees, their only drawback being an occasional attack of scale insects. Another plant used here, but slow to establish itself, is *Planchonella novae-zealandiae* (nee *Sideroxylon* nee *Sapota*).

These subjects mentioned above do not comprise the complete extent of our plantings but they do give a cross-section of the types of plants used. These results also indicate that there must surely be more plants available that could be used to diversify the variety of trees that we decorate our streets with. I see no reason why *Dodonaea viscosa* 'Purpurea' could not be successfully used or, for that matter, *Ficus rubiginosa*, the 'Port Jackson Fig', which makes a most attractive small tree; well here's hoping anyway.

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## ANNUAL REPORT OF THE DOMINION COUNCIL FOR THE YEAR ENDED 30th SEPTEMBER, 1963.

Ladies and Gentlemen,

The Dominion Council has much pleasure in presenting the Annual Report for the year ended 30th September 1963, which is the 41st Annual Report of the Royal New Zealand Institute of Horticulture Inc.

The many matters dealt with during the year by the Dominion Council are herein reviewed for the benefit of members and delegates.

## 1. MEETINGS:

(a) **Annual Conference 1963:** The 40th Annual General Meeting and Conference of Delegates was held in Christchurch on 20th February 1963. The local district council extended very cordial hospitality to those attending. The Conference was officially opened by The Minister of Agriculture (Hon. B. E. Talboys). It proved to be a very successful Conference with wide representation and much discussion on important matters.

(b) **Dominion Council:** The Dominion Council met on four occasions during the year and the average attendance at those meetings was 19. Greater attendances at these meetings would be very welcome and District Councils are urged to endeavour to be better represented. Better representation by affiliated bodies has been encouraging.

(c) **Sub-Committees and Examining Board:** The Dominion Council again acknowledges with gratitude the co-operation and help received from the various sub-committees and the Examining Board.

They have met regularly throughout the year, attending to the specialised business delegated to them.

**2. IN MEMORIAM:** It is with most sincere regret that the Dominion Council records the passing of several esteemed members during the year. Their passing is keenly felt and our sympathies are extended to their relatives. Particular reference is made to the death of Mr L. F. Sired, A.H.R.I.H.(N.Z.), who was a member of the Dominion Council and Examining Board at the time of his decease and had rendered outstanding service to the Institute for several years. He, and others whose names are not mentioned, will long be remembered for their service to horticulture and to the Institute.

**3. MEMBERSHIP:** The total membership stands at 1983 including 36 Associates of Honour. A strong membership is vital to the well-being of the Institute and District Councils are urged to do all they can to enrol new members. We welcome all new members who joined during the year and particularly those in the new District Council at Poverty Bay.

## 4. FINANCE:

(a) **Annual Accounts:** The financial position of the Institute needs considerable strengthening. A strong membership is the key to this. Capitation of 5/- per financial member has been paid to District Councils. The Accounts for the year are appended to this Report, showing a loss for the year. To meet the Auditors' requirements, subscriptions received in advance have been shown in the Balance Sheet as a liability and this has increased the deficit for this year by £133/2/9, compared with past years.

(b) **Trust Accounts:** These are clearly set out in the Annual Accounts. Trust funds are properly invested.

(c) **Publications Account and Loder Cup Account:** These, too, are clearly set forth. The financial assistance received from the Internal Affairs Department for the Journal is gratefully acknowledged.

(d) **Examinations Grant:** The Dominion Council acknowledges with thanks the increase (10/- per head) in capitation received from the Department of Agriculture for examinations.

**5. PUBLICATIONS:** The Institute's Official Journal 'New Zealand Plants and Gardens' (Editor, G. A. R. Phillips, F.R.I.H.(N.Z.)), has been published quarterly throughout the year and has again maintained a high standard and wide range of authoritative articles by qualified authors on New Zealand and overseas horticulture.

District Council activities have been well reported.

The sale of advertising space continues to be a problem and the need of revenue from this source is keenly felt.



The Dominion Council expresses its appreciation of the continued good work of the Editor, Mr G. A. R. Phillips, and of the quality maintained.

Appreciation is also expressed to the contributors of articles, particularly those who have submitted articles and illustrations free of charge.

The Publications Committee, under the chairmanship of Mr A. M. W. Greig, has given careful attention to the business entrusted to it, and a separate report from the Committee is appended.

**6. HISTORIC AND NOTABLE TREES:** The task of checking the lists and verifying the existence of the trees has proved a major one, and the continued help of all district councils in this is needed. A start has been made with publication of the list and already the list of Notable Exotic Trees has been published in our Journal (Vol. V, No. IV).

**7. ARBOR DAY:** This annual observance was again fully supported throughout the Dominion by the Institute taking an active and leading part. A request has been lodged with the Internal Affairs Department to have the date gazetted each year.

**8. LODER CUP AWARD:** This Annual Award is offered to 'Lovers of Nature in New Zealand to encourage the protection and cultivation of the incomparable flora of the Dominion' Mr R. Syme, A.H.R.I.H.(N.Z.) of Hawera serves on the Loder Cup Committee as the nominee of the Institute. The 1963 Award has been made to Miss Nancy M. Adams of Wellington, and our congratulations are extended to her.

**9. EXAMINING BOARD:** The Examining Board is appointed by the Dominion Council annually and bears the full responsibility for the conduct and administration of the Institute's examinations. The Institute has full statutory authority to issue diplomas and certificates as follows:

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

Under the chairmanship of Professor H. D. Gordon of Victoria University of Wellington the Examining Board has given meticulous attention to the business entrusted to it and has concluded another successful year of examinations. The Board comprises eminent persons engaged in both the practical and educational fields of horticulture and has thus been able to bring balanced judgment to bear on all its deliberations.

The separate Examining Board Report is appended, to be read in conjunction with this Annual Report. The Dominion Council places on record its sincere appreciation of the fine co-operation and assistance rendered by the Canterbury District Council, the Christchurch City Council, the Director of Reserves and his staff at Christchurch, and also officers of the Department of Agriculture in Christchurch in the conduct of the Oral and Practical examinations there again this year.

**10. PLANT RAISERS' AWARD:** This Annual Award is now open for entry (closing date 30th June), and three nominations were received during the year. Two Awards were made: Dr J. S. Yeates (Palmerston North) for the *Lilium* Hybrid 'Excelsior', and the late Dr. R. Francis (Hastings) for the floribunda rose 'Cresset'. The Awards in the form of inscribed Bronze medals were suitably presented by the Dominion President.

**11. AWARD OF GARDEN EXCELLENCE:** The proposed conditions for this Award were again carefully studied and will come before the 1964 Dominion Conference for final decision.

**12. NOMENCLATURE:** The Nomenclature Committee considers the past year to be one of modest achievement, with the publication of the first checklist of *Leptospermum* cultivars in the December 1963 issue of *New Zealand Plants and Gardens*. This contains over 70 different names of *Leptospermum scoparium* cultivars and a considerable amount of research and checking both here and overseas has been associated with its preparation. It is hoped that this list will stimulate further investigation and possibly plant breeding in this genus; the latter has to some extent been neglected in this country. The Committee anticipates that the publication of this list will also encourage those who have a long experience of these and other plants, to record their information. One of the greatest difficulties experienced by Committee members is the shortage of suitable older reference literature on ornamental plants in New Zealand.

At the present time, Committee members are actively preparing similar lists on *Hebe* and *Pittosporum* and at all times giving advice on problems related to the naming of any horticultural plant.

The Dominion Council expresses its appreciation of the work of this Committee, and of the interest shown and the assistance received particularly from those serving on this Committee who are not members of the Dominion Council.

**13. FELLOWSHIP:** The Dominion Council has been pleased to confer the distinction of 'Fellow' (F.R.L.H. (N.Z.)) on 30 members duly nominated by District Councils, during the year.

**14. ASSOCIATES OF HONOUR:** The Dominion Council's special sub-committee this year received and considered four nominations from District Councils. These nominations have been endorsed by Dominion Council for submission to the Dominion Conference, recommending their election as Associates of Honour of the Royal New Zealand Institute of Horticulture (A.H.R.L.H.(N.Z.)).

They are:

Mr and Mrs J. W. Mathews of Waikanae.

Mr J. Bennett of Palmerston North (formerly of Wellington and Taupo).

Colonel T. Durrant of Tirau.

The distinction of Associate of Honour is conferred only on persons who have rendered distinguished service to horticulture. The maximum number of Associates of Honour at any one time sanctioned by the Constitution of the Institute, is 40, but an increase to 50 is to be considered.

**15. DISTRICT COUNCILS:** The activities of individual District Councils are set forth more fully in the separate reports appended hereto. The Dominion Council acknowledges with gratitude the work carried out by the Executives of District Councils. It is through District Councils that much of the work of the Institute is performed and particularly the direct contact and association enjoyed with members. The establishment of new district councils in areas not already being served would be warmly welcomed and encouraged by the Dominion Council.

District Council Executives are urged to seize every opportunity to increase membership. This need cannot be over emphasised.

It is pleasing to report that a new District Council was formed in Gisborne (Poverty Bay) during the year.

**16. UNIVERSITY CHAIR OF HORTICULTURE:** The Institute has learnt with much pleasure of the establishment of Chairs of Horticulture at both Massey University College of Manawatu (Palmerston North) and Lincoln College (Lincoln). The establishment of such Chairs and the granting of full degrees in Horticulture is an important step forward in the study and



practice of horticulture in New Zealand. Massey University College Council has proposed to change the degrees formerly offered as follows:

- B.Agr.(Hort.) to B.Hort.
- B.Agr.Sc. to B.Hort.Sc.
- M.Agr.Sc.(Hort.) to M.Hort.Sc.

The Institute's active interest in this matter over the past few years has, to some extent no doubt, been responsible for these important decisions by the two Colleges.

#### 17. REMITS PLACED BEFORE THE 1963 DOMINION CONFERENCE:

Details of remits and discussions arising therefrom have already appeared in the report of the 1963 Conference (see pp. 78/81).

**As for Remit (5)(a) from Auckland District Council,** (Opossum menace) the Dominion Council has requested all District Councils to arouse local interest, even with local members of Parliament, to increase public concern at this menace with a view eventually to getting stronger action by the authorities.

**As for (6) redrafted from Remits submitted by Wellington, Auckland and North Taranaki District Councils** (a) and (b) The Dominion Council has conveyed the opinion expressed herein to the Minister of Works and also to the Chairman of the National Roads Board. Landscape Officers are employed by the Ministry of Works and plans for beautification of the Benmore and Aviemore Hydro Electric schemes have been announced. In the approach to the latter, a strong recommendation was made that a horticulturist be added to the Board to advise on all matters of Highway plantings and landscaping. It is still a 'live' topic and is somewhat associated with the matter of Town and Country Planning, which also is receiving the attention of the Dominion Council. Lists of trees and shrubs considered suitable for their localities for such planting would be welcome from District Councils.

**18. NATURE CONSERVATION COUNCIL:** The Dominion Council has been promised by the Nature Conservation Council that it will keep the Institute informed of matters coming before it from time to time so that the Institute may have an opportunity of expressing an opinion thereon.

**19. INTERNATIONAL HORTICULTURAL CONGRESS:** Consideration is being given to the 1966 Congress with a view to requesting the Government to send a New Zealand delegate — a New Zealand resident who will be able to return and bring back to New Zealand the full benefit of his attendance. A request will be made to the Government to sponsor the holding of the 1974 Congress in New Zealand.

**20. NATIONAL PARKS BOARDS:** During the year the Dominion Council supported the nomination of Mr H. G. Gilpin for the Arthurs Pass National Park Board. In the ensuing year several other Boards are due for reelection and it is intended to nominate suitable persons for these also.

**21. RESEARCH IN NEW ZEALAND:** Members will be aware that the National Research Council Act was passed in 1963 to come into force on 1st January 1964. The Institute was represented at a meeting with the Minister of Scientific and Industrial Research when the re-drafted Bill was considered prior to being presented to Parliament. Besides providing for the appointment of the National Research Council, the Act also provides for the appointment of Advisory Committees to assist the Council. The Dominion Council has submitted the names of Dr J. S. Yeates M.Sc., Ph.D.(N.Z.), Ph.D.(Cant.), of Palmerston North and Mr R. J. Ballinger, B.Agr.Sc., of Blenheim, for consideration for appointment to the Council. The Council has not yet been named officially. Consideration will be given by the Dominion Council to the matter of a horticultural advisory committee after the Council has been announced.

**22. JUDGING RULES:** The Dominion Council set up a sub-committee comprising Mrs H. L. Bennett, Miss R. A. Campion, Mr J. G. Short and Mr J. P. Salinger (Convenor) which has carefully examined the papers prepared by the earlier committee and the original Official Judging Rules of the Institute.

It became apparent that both these would need to be considerably expanded particularly in the sections relating to flowers and floral art. Members' experience with horticultural groups throughout the Dominion indicated that these organisations required and looked forward to receiving guidance on many aspects of horticultural show organisation and judging.

With these facts in mind the committee is actively preparing a completely new illustrated Show Handbook for Horticulture and Floral Art, containing much additional information.

The Committee wishes to acknowledge with grateful thanks the assistance and opinions given by individuals and specialist horticultural societies, particularly on flowers and floral art.

**23. CAREERS IN HORTICULTURE:** Mr C. S. Challenger of Christchurch has done excellent work in fostering interest in the publication of a booklet on this subject. Much work has been done and the publication appears to be assured during 1964.

**24. ANTI-LITTER CAMPAIGN:** The Dominion Council has taken active steps in building up a national consciousness of the need for overcoming the problem of litter in public places.

Government Departments of Health and Internal Affairs, the Local Bodies' Municipals Association, have been approached. District Councils have been urged to take local steps to increase public awareness of the problem. There are signs here and there of great attention being given by local authorities to the provision of litter bins. The Dominion Council will pursue a persistent policy of pressing for a cleaner and tidier country and the enforcement of bylaws if necessary.

**25. HORTICULTURE AS A SCHOOL CERTIFICATE SUBJECT:** During the year it was learnt that the School Certificate Revision Committee was considering the future of the subject of Horticulture for the School Certificate examination. It appears that interest in this subject is not high in Secondary Schools and that few scholars were taking it. One problem associated with this appears to be the lack of qualified teachers of the subject.

The Dominion Council approached the Revision Committee and asked to be consulted first before any decision was made to drop it from the syllabus. This was promised by the Committee who gave assurance that there was no immediate intention of deleting the subject.

**26. COMMONWEALTH WAR GRAVES:** Correspondence was entered into with the Commonwealth War Graves Commission in England over the matter of planting New Zealand trees and shrubs in overseas cemeteries where New Zealand servicemen are interred. Endeavours are being made by the Commission to plant New Zealand specimens in these cemeteries.

**27. HONORARY DIPLOMAS IN APICULTURE:** The Examining Board approved of the awarding of Honorary Diplomas in Apiculture to seventy qualified persons out of 75 who applied. Provision is made in the Royal New Zealand Institute of Horticulture Act for the awarding of diplomas without examination (honorary), in that subject, up to two years after the date of the gazetting of regulations authorising the conduct of examinations and the issuing of diploma or certificates in any subject. This statutory period expired on 8th September 1963 for the issuing of Honorary Diplomas in Apiculture. Applicants must have had not less than 20 years experience in beekeeping and be over 40 years of age.



**28. SILVER LEAF DISEASE:** The question of control measures over this disease has been raised and enquiries already made from the Plant Diseases Division of the Department of Scientific and Industrial Research.

**29. HOLIDAY CAMP:** Mr Bernard Teague of Wairoa, experienced in organising Summer Camps for the Royal Forest and Bird Protection Society, has offered to organise a similar Camp in 1965 for Institute members. Mr Teague's enthusiasm is always admired, and the question will be discussed at the 1964 Dominion Conference.

**30. TOWN AND COUNTRY PLANNING ACT:** The need for revision of the New Zealand Town and Country Planning Act to make full provision for the registering and preservation of historic and notable trees has been before the Dominion Council and already much research has been done by Mr J. G. Short on comparative provisions in the United Kingdom. It is anticipated that suitable recommendations will be put forward by the Dominion Council for consideration by the Government, during the ensuing year.

**31. THANKS:** The Dominion Council extends its sincere thanks to all who have contributed to the successful running of the Institute throughout the past year. Particular thanks are expressed to:

(a) The Government, Ministers of the Crown, and Departmental Officers for their courteous attention to the needs of the Institute whenever they have been brought to their notice.

(b) Local Bodies for their continued interest and support, and the Directors and Superintendents of Reserves.

(c) Examiners, supervisors and all others who have co-operated to facilitate the conduct of the examinations during the year. Special reference is made again to the fine assistance received from the Director of Reserves and his staff, and officers of the Horticulture Division of the Department of Agriculture, at Christchurch, in the holding of the Oral and Practical examinations there.

(d) District Council Presidents and Executives who have continued to maintain an active front in their respective localities.

(e) The New Zealand Forest Service, for valuable assistance in registering and recording the list of Historic and Notable Trees of New Zealand.

**32. CONCLUSION:** As Dominion President, I wish to place on record my personal thanks to all members of the Dominion Council and of District Councils who have worked solidly throughout the year in the interests of the Institute and of horticulture.

It was my personal pleasure during the year to visit Palmerston North and Wanganui District Councils where I had the joy of meeting local members and of presenting certificates and diplomas. It was a double pleasure to visit Gisborne and address the few local members and other interested folk. This culminated in the formation of a new district council there. In each place visited I was impressed by the enthusiastic interest in horticulture as a natural means of home and city beautification and also as a most stimulating study and activity. New Zealand is richly endowed with natural resources for unlimited beautification using horticultural material. With an increasing population and a consequent greater demand for housing let us ever be aware of the values of a natural living environment, as against an unnatural one, for the physical, mental and spiritual health of our nation. The Institute appeals to all who are engaged in the control and development of our cities and towns not to think in terms of bricks and mortar only. But rather, in their necessary planning, let them make adequate allowance for the healthful living and recreation of present and future generations with outdoor spaces where the harmony and beauty of nature

can be blended to help maintain the proper balance of human life which, after-all, and from earliest times has always been so very close to nature. Let us, as citizens, respond then by greater appreciation of our rich natural inheritance; let us strive together for the greater preservation of what we already have; let us go in for the natural beautification of our cities and countryside; let us work together for a civic pride that will impel us to keep our country clean and tidy; knowing this that if we have the will, a way will be found for the accomplishment of all our deals.

On behalf of the Dominion Council.

J. F. LIVING, F.R.I.H.(N.Z.),  
Dominion President.

**REPORT ON PROCEEDINGS OF THE FORTY-FIRST ANNUAL  
MEETING AND CONFERENCE OF DELEGATES HELD IN  
DUNEDIN ON THURSDAY 13TH DAY OF FEBRUARY 1964,  
COMMENCING AT 9.00 A.M.**

*Present*

Mr J. F. Living, F.R.I.H. (N.Z.), Dominion President, presided over the Conference which was attended by approximately 45 delegates, members, and representatives of affiliated organisations and the Institute of Park Administration.

*Apologies*

For non-attendance and messages of good wishes were read to the meeting.

*Welcome*

To delegates and visitors was extended by the Dominion President.

*In Memoriam*

The Dominion President made particular reference to the passing of Mr. Michael Gudex, M.B.E., M.A., M.Sc., N.D.H. (N.Z.), A.H.R.I.H. (N.Z.), of Hamilton, a very prominent and active member of the Waikato District Council, and regular attender at previous Dominion Conferences of the Institute. His death had removed a very dear friend. During the year other members too had passed away. As a mark of respect to the memory of these, all present stood for a moment of silence.

*Appreciations*

The Dominion President expressed sincere thanks to the Dunedin District Council for their hospitality and organisation of the Conference. Their offers to entertain delegates were greatly appreciated. The floral arrangements in the meeting room were most pleasing.

*Personal*

Resolved to send greetings to Mrs. Olive Houston, of Hawera, widow of the former Dominion President, who was reported to be in hospital.

*Procedure Rules*

These rules, as defined on Page 4 of the Conference Papers, were formally adopted as the rules of procedure for the Conference.



*Dominion President's Address*

In a brief address to the Conference the Dominion President, Mr J. F. Living, F.R.I.H. (N.Z.), said he had been honoured at the last Conference when he was elected Dominion President for a second year. He regretted, however, that he had not been able to do what he had then hoped — to pay a visit to all District Councils — but had managed to visit Wanganui, Palmerston North, and Gisborne where a new District Council was inaugurated.

He hoped that the Institute would maintain a very watchful eye over Horticulture to see that its rightful place was preserved in the Dominion.

The Institute has accomplished a lot over the past years for the lasting benefit of the Dominion. The Examining Board has done excellent work and many of the Institute members were also making major contributions through their individual associations with horticulture. In every instance their efforts were characterised by 'giving' and 'sharing' without thought of 'receiving' for themselves.

District Councils were active, and were busy in the educational side of the Institute's functions — with field days, lectures, demonstrations, and weekend excursions.

Nomenclature was a long-term work but the end result would be of considerable and lasting benefit. The new *Show Handbook* which was now getting nearer to publication would be welcomed by all. The preservation of historic and noteworthy trees, the beautification of highways, public works and housing schemes were items close to the heart of the Institute. 'Anti-litter' was gaining momentum and pressure must be kept on, because the outstanding beauty of our Country was being spoilt by careless habits with litter — a greater sense of tidyness must be developed in our citizens. As an industry, Horticulture was expanding rapidly and the value of horticultural products had been stated to exceed £30,000,000 annually. The output of Nurseries in New Zealand was recently reported to be almost £2,000,000.

Mr. Living called attention to the need for stronger membership and hoped that District Councils would use all means available to bring this about.

*Official Opening*

In welcoming His Worship the Mayor of Dunedin, Mr. T. K. Sidey, the Dominion President stated that delegates were very much enjoying their visit to Dunedin, 'the Edinburgh of the South', and were impressed by the beauty of the city — he had not seen any untidy spots during his three days' stay. In response, His Worship said how proud he was of the efforts of the local horticulturists and the Dunedin Horticultural Society which had done a lot to help young citizens especially those setting up new homes. The growing of flowers was a real contribution to the cultural side of life and had been followed since earliest times. He was sure that much benefit would come out of the Conference where there was a pooling of knowledge and resources and a pulling together. He wished the Institute every success and officially declared the Conference open.

*Annual Report and Statement of Accounts*

The Annual Report and Statement of Accounts having been previously circulated to all delegates, District Councils, and affiliated organisations, it was agreed that they be taken as read. In moving the adoption of the Annual Report the Dominion President touched on many of the matters contained therein, and encouraged discussion on the Report. The motion for the adoption was seconded by Mrs. N. V. Anderson (Hawera).

Mr. E. R. Belcher (Dunedin) stated that there had been suggestions of a new National Park being created, lying between Mt. Cook and Fiordland.

Mr R. Syme (Hawera) confirmed that the establishment of a West Otago National Park had been discussed from time to time in recent years — it had been raised again recently — but no immediate action was contemplated by the National Parks Authority.

Mr. F. B. Belcher (Dunedin) felt that there was too much ignorance, through lack of publicity, on the matter of Historic and Notable Trees and instanced several specimens that should obviously have been included in the list of Exotic trees published recently. He also regretted the lack of reference in the Report to the Banks Lecture of 1963. He was pleased to note the attention given to 'Horticulture' as a School Certificate subject. He felt more provision should be made for training teachers in this subject. In reply to Mr. Belcher, it was pointed out that, on several occasions in the past three years or so, District Councils had been appealed to for information on historic and notable trees and any omissions from the published list were really because the information had not been supplied to the Committee. A further appeal was made at the Conference for full particulars of all specimens considered eligible for inclusion. The list could always be added to.

Mr. D. Combridge (Christchurch) expressed concern that changes were being made in government departments, affecting Research in New Zealand, after the passing of the National Research Council Act but before the appointment of the National Research Council, and from this it appeared that these changes were becoming effective before the Council could have an opportunity of discussing or considering them.

Mr. G. Thiele (Lincoln College) was surprised recently to learn that certain such changes had been made affecting the Horticulture Division of the Department of Agriculture.

Mr A. M. W. Greig (Wellington) stated that, just prior to Christmas 1963, the Minister of Agriculture announced the formation of a new Agricultural Research Division within the Department of Agriculture under which all existing research sections of that Department were being transferred as from 1st February 1964. This embraced all horticultural, agricultural, animal, quarantine, chemical pest and disease control, and of course, included the Levin Horticultural Research Station. The Headquarters of the Research Division would be at Ruakura (Hamilton) with Dr. Wallace as Director. Under him there would be three sections each with its own director responsible to Dr. Wallace. These were:

- (1) Director of Animal Research.
- (2) Director of Soil Research.
- (3) Director of Field Experimentation.

The Levin Station would henceforth be known as Levin Horticultural Research Centre. Horticultural Field Experimentalists will be appointed to undertake horticultural experimental research.

The change affects only the Department of Agriculture and does not affect the Department of Scientific and Industrial Research.

*Resolved* 'That, in view of the steps already taken by the Institute in submitting two names for consideration for appointment to the National Research Council — which Council has not yet in fact been announced — the Dominion President wait on the Minister of Science (Hon. B. E. Talboys) and request that careful consideration now be given to the appointment to that Council of a person who is fully capable of appreciating all the needs of horticulture in matters of Research in New Zealand'.

Mr. G. Thiele (Lincoln) reported that progress was being made with the Careers Booklet and already about £350 had been promised towards publishing costs. Mr M. J. Barnett (Christchurch) requested that the Institute of Park Administration be consulted in the matter.



Mr. M. R. Boothby (Wanganui) asked whether District Councils would have an opportunity of perusing the draft of the Judging Handbook. In reply Mr. J. P. Salinger (Wellington) stated that it would seriously delay the publication if the draft had to be circulated amongst all District Councils, but it might be desirable for two or three to examine it. Already a lot of people and organisations have been consulted and important details checked.

Mr. R. Syme (Hawera) hoped that District Councils would take greater interest in the annual Loder Cup Award and send forward more nominations for consideration.

Mr. A. M. W. Greig (Chairman of the Loder Cup Committee) spoke on the difficulty the Committee had each year when deciding between very worthy nominations. It just could not write to unsuccessful nominators and urge them to renominate the following year because the Committee did not know from year to year what nominations were coming forward. But the Committee did sincerely hope that nominating bodies would in fact re-submit unsuccessful nominations, and not be disheartened by failure in the first year. Mr Greig emphasised that the Committee favoured individuals, rather than organisations, being nominated; making the Award towards the end of his or her life span; and that, to be consistent with the objects of the Award in the encouragement of the protection of our native flora, they liked to see the Cup being moved well around the Dominion. To assist in this, all District Councils were encouraged to send forward nominations each year.

Mr. R. Syme (Hawera) referred to the high cost imposed on local bodies of cleaning up litter on recreation and public grounds.

Mr. G. Thiele (Lincoln College) reported that the Lincoln College had now established a Faculty of Agriculture and Horticulture with separate degrees in each. The University of Canterbury and the Curriculum Committee had approved the introduction of Degrees of Bachelor of Horticulture, Bachelor of Horticultural Science and Master of Horticultural Science as from 1st January 1964.

Mr. J. A. Hunter (Auckland) submitted the following summary prepared by the Plant Diseases Division (D.S.I.R.) on the subject of Silver-Leaf Disease in New Zealand.

There is no known chemical control, and no completely resistant varieties of stone-fruit. Apples and ornamental trees are also attacked. Good orchard or garden management based on the following facts can materially reduce the incidence of the disease.

1. *Stereum purpureum*, the cause of silver-leaf, is a wound parasite. Without wounds in the stems or trunks of trees, the spores of the fungus cannot enter wood vessels to cause the disease. *All large wounds, particularly pruning cuts, should be covered therefore with a wound dressing*, either (a) Petrolatum or (b) Shell Flintkote Type 5, is suggested. The fungus does not enter through leaf scars following natural leaf fall in autumn.
2. After spores alight on a wound they germinate and send hyphae into the wood vessels where toxins are produced which cause the silvery appearance of leaves. The fungus present in the wood does not usually come to the surface again to produce fructifications and spores until all or part of the tree has been killed. During the period that the hyphae are present in the wood, the disease is not transmitted to other trees. Transmission by secateurs has not been observed. *Destruction of infected trees or parts of trees when the tree or branch is obviously dying and before the fungus comes to the surface of the bark to produce fructifications will prevent spread to other trees.*

Derelict fruit trees in private home gardens are probably the major source of infection throughout New Zealand. The continued spread of housing into market garden and orchard areas is increasing the incidence of numerous pests and diseases, including Silver-leaf. *Some measure of control over diseased trees in private home gardens is needed. If Local Bodies or the Department of Agriculture could be induced to inspect and order the destruction of derelict trees in private gardens, a considerable reduction in plant disease including silver-leaf could be expected.*

This brought discussion to a close and the motion for adoption of the Forty-first Annual Report was duly carried.

#### *Statement of Annual Accounts*

Presented by the Dominion President who formally moved that the Statement be adopted. He regretted that the Accounts revealed an overall deficit for the year of £88 10s, and spoke of the need for increased income.

Particulars were asked concerning the D. Tannock Memorial Fund, which is a Trust Fund subscribed by interested persons and organisations as a memorial to the late David Tannock of Dunedin, from which the income is used to provide an examination prize.

The Annual Accounts were duly adopted.

Mr V. C. Davies of New Plymouth, gave a brief statement on the A. M. L. Rumble Estate Funds which are held in trust for the benefit of the Institute in Stratford. *Resolved* that appreciation of the honorary services rendered by the legal firm of Percy Thomson and Hugh D. Thomson of Stratford in administering this estate since its inception be placed on record and conveyed to them by letter.

#### *District Council Reports*

These written reports had been incorporated into the Conference Papers and were duly received.

Arising out of the District Council Reports the following observations were made.

- (1) Membership of the Institute was affected by the strong competition received from local horticultural societies.
- (2) Manawatu District Council was extending its activities to Levin and Feilding, with good results.
- (3) Northern Wairoa and Whangarei experienced difficulty in getting speakers on account of the distance from main centres.
- (4) Horticulture had benefitted greatly in South Taranaki recently by a large bequest.
- (5) The Institute must co-operate with local horticultural societies — never compete with them.
- (6) The Institute was the only body that could co-ordinate the interests and activities of horticultural societies and specialist societies.
- (7) Where there was no horticultural society a local district council could well function as one.
- (8) The assistance received from the Horticulture Division, Lincoln College, and the Botany Division of the D.S.I.R. in Christchurch was warmly applauded by Mr. M. J. Barnett.
- (9) Displays of the Flower of the Week in Libraries was very commendable.



*Examining Board Report*

In the absence of the Chairman of the Board, Mr. J. A. McPherson presented the Report and assured the Conference that the highest possible standard was being maintained in the examinations. He spoke appreciatively of the hospitality accorded North Island candidates attending the Oral and Practical examinations in Christchurch by the Canterbury District Council.

The sincere personal interest of the Minister of Agriculture in the examinations work of the Institute was much appreciated, and it was *resolved* that a letter of thanks be sent to the Minister.

*Publications Committee Report*

Mr. A. M. W. Greig (Wellington), Chairman of the Publications Committee, presented the Report which was duly adopted. In their report the Committee expressed its awareness of the responsibility to produce a Journal which contained articles of wide variety in good readable style. It must also contain essential official reports and proceedings of the Institute for historical record. Throughout the past year four issues had been published. A list of notable exotic trees and *Leptospermum* cultivars had been published. The Committee welcomed helpful suggestions at all times for the improvement of the Journal.

Tribute was paid to the work of the Editor, Mr. G. A. R. Phillips, who was doing a sterling job for the Institute. The Editor in his separate report sought an expression of opinion from District Councils on the following matters:

- (1) Should District Council reports be continued in the journal? They were not being received regularly in a way that presented to readers a balanced view of the activities of the Institute.
- (2) Should all illustrations be given a full page each? The additional cost would be about £10 5s per issue.
- (3) Should the type-face be changed to a larger size?

*Resolved* that these points be submitted to District Councils for their opinions. There was a strong expression of opinion at the Conference that the District Council Reports should be eliminated from the Journal, but that District Councils should submit all items of special national interest in the form of articles for publication.

*Associate of Honour Awards*

On the unanimous recommendation of the Dominion Council the nominations of the following four persons for election to the distinguished office of Associate of Honour of the Royal New Zealand Institute of Horticulture (A.H.R.I.H. (N.Z.)) came before the Conference.

Mr. J. W. Matthews, F.R.I.H. (N.Z.) (Waikanae).

Mrs. Barbara W. Matthews, (Waikanae).

Mr. J. Bennett, F.R.I.H. (N.Z.), N.D.H. (N.Z.), (Palmerston North).

Colonel T. Durrant, (Tirau).

*Resolved* unanimously that the distinction of Associate of Honour be conferred upon these four persons, in virtue of their outstanding services to horticulture.

Colonel T. Durrant, being present, received his Certificate with warmest congratulations from the Dominion President.

Apologies for absence were received from Mr. and Mrs. Matthews and Mr. Bennett. With regard to the Award to Mr. and Mrs. Matthews, this was the first occasion in the history of the Award that husband and wife had received the award simultaneously in their own right.

*Associates of Honour — Maximum Numbers*

*Resolved* 'That as an expression of appreciation of the keen personal interest of Her Majesty Queen Elizabeth, the Queen Mother, in horticulture, and in view of the expanding interest in horticulture generally throughout the Dominion and our increasing population, the maximum number of Associates of Honour of the Institute at any time be increased from forty (40) to fifty (50) and that Rule 3 (d) (iii) be amended accordingly'.

Mr. F. B. Belcher considered the number of awards in any one year should also be increased, from four to six, and moved a motion accordingly. The motion lapsed without a seconder. It was agreed, however, to re-consider this proposal in twelve months' time.

*High Overseas Honour For Mr. V. C. Davies of New Plymouths*

The Dominion President announced that he had just received advice that Mr. V. C. Davies, O.B.E., a very prominent member of the Institute and a former Vice-President, had received the distinction of being elected an Honorary Member of the Saratoga (U.S.A.) Horticultural Foundation's Board of Councillors.

This high honour has been bestowed upon Mr. Davies, (in the words of the Director of the Foundation, 'in recognition of the many contributions you have made to the field of ornamental horticulture, which have had such far-reaching results in many parts of the world . . . You are the second person to be so recognised, the first being Dr. Thomas Harper Goodspeed, Professor of Botany, Emeritus, of the University of California'. The Dominion President warmly congratulated Mr. Davies, who was present at the Conference, on receiving this high honour and said now delighted the Institute and the assembled delegates were to receive such news. The distinction was indeed well merited and it was pleasing to see such an important organisation granting such recognition to the life-work of Mr. Davies in the field of horticulture.

*Presentation of Certificate — Honorary Diploma in Apiculture*

In suitable terms of congratulations the Dominion President presented the honorary diploma in Apiculture to Mr. L. I. Box of Heriot. Mr Box suitably replied.

*Family Subscription Rate*

*Resolved*, on the recommendation of the Dominion Council,

'That a family subscription be instituted for husbands and wives whereby the second member be admitted to membership at a rate of subscription which is 10/- (ten shillings) below the normal rate applicable, and that only one copy of the Journal *New Zealand Plants & Gardens* be sent to such two members.  
*Remits*

*(1) From North Taranaki District Council*

'That the Institute make application to the Commissioner of Apprenticeships for representation on the N.Z. Horticulture and Gardening Apprenticeship Committee, to emphasise the importance of the Institute's examinations as Horticultural Qualifications; and to clarify misunderstanding of the relative values between N.D.H. (N.Z.) and Trade Certificate Examinations as worded in the N.Z. Horticultural & Gardening Apprenticeship Order 12/5/61'.

In support of the remit the North Taranaki District Council tabled a written statement which was circulated at the Conference.



*Resolved* that the remit be adopted, and that the Dominion Council be asked to put forward a nomination.

(2) *From Wellington District Council*

'That Dominion Council gives consideration to the publication of a membership brochure. There is great need for increasing membership, and information of what the Institute stands for and does would be of assistance to District Councils when trying to interest and solicit new members.'

*Resolved* that the remit be adopted, and that such brochure stress the national as well as local character of the Institute's work.

(3) *From Wellington District Council*

'That the Railways Department be approached commending the design and layout of new stations; the Institute, however, recommends as a matter of general policy of the Railways Department that weeds and tall grass should be correctly controlled in built-up areas and in the environs of all stations; also that suitable trees and shrubs, using N.Z. native plants where appropriate, should be planted and maintained in such areas to improve the appearance, and to encourage and educate the travelling public.'

*Resolved* that the remit be adopted and that such approach to the Railways Department be on a constructive basis offering helpful and expert advice. The problem of fires, both intentional and accidental, along railway embankments was a real one when considering permanent plantings. It might be better if the Railways Department were encouraged to employ their own horticultural landscape architects.

(4) *From Taupo District Council*

'That in view of recent damage to both Public and Private property through indiscriminate use of modern powerful sprays (the serious injury done to Kowhai trees at Waitahanui will serve as an example), the Royal N.Z. Institute of Horticulture urges the Government to tighten control over the use of such materials.'

The remit was adopted in its amended form, as follows:

'That in view of recent damage to both Public and Private property through indiscriminate use of modern powerful sprays (the serious injury done to Kowhai trees at Waitahanui will serve as an example), the Royal New Zealand Institute of Horticulture urge the Government to increase its educational programme in relation to the use of these herbicides.'

During discussion it was emphasised that there were already many regulations in force and the Institute should be careful about asking for more; that the remit was directed against weedkillers; that what was needed really was greater education on the sprays by those actually using them; extracts were read from the Annual Report of the Agricultural Chemicals Board dated 31/3/63.

(5) *From Canterbury District Council*

'That this Conference requests the Dominion Council of the Royal New Zealand Institute of Horticulture to make representations to the Government to have its 1960 Town and Country Planning Regulations amended so as to include more adequate provision for the preservation of trees and woodlands of historic and notable value.'

- Notes: 1. In the present Regulations no specific reference is made to trees or woodlands other than under the title of 'Objects and Places of Historical or Scientific Interest or Natural Beauty'.
2. In the British Town and Country Planning Act, 1962, Part III, Section 29 and Part IV, Section 62, greater provision is made for the preservation of trees and woodlands.
3. It is considered by the Canterbury District Council that similar provisions as these should be included in the New Zealand Town and Country Planning Regulations.

In presenting the remit, which was supported by extracts from the N.Z. and U.K. Town and Country Planning Acts, Mr M. J. Barnett (Christchurch) emphasised the need for our N.Z. Act being made more effective and wider in its scope, so as to include the preservation of trees. He instanced many old estates being cut up for housing and the trees, upwards of 70-80 years old growing on those estates being thoughtlessly removed entirely. Such trees had really become part of our national life.

Mr. J. O. Taylor (Christchurch) said the N.Z. Regulations required more 'teeth' to exercise stronger control and enforcement as far as trees were concerned.

Mr. J. G. Short (Wellington), who had spent much time on research into the N.Z. legislation in this matter, said the Institute must have good grounds for moving for amendments to present legislation. District Councils have been asked to have trees of known amenity value registered with local Planning Officers. Steps for the preservation of such trees must begin here. They already have power to include trees as 'Amenities'. It was obvious that grounds must first be established before any existing laws can be amended.

Mr. J. A. McPherson (Auckland) said it seemed inevitable that in our social and industrial progress someone or something suffered from time to time, and often it was trees when old establishments were subdivided. In America, and some other places, however, the landscape architect was first consulted in all subdivisions, with a view to preserving as much as possible of existing growth.

Mr. J. G. Short (Wellington) said legal provision already existed whereby trees could be 'deeded', when transferring property, to protect them against being cut down later. Groups of trees could be classified as 'Open Spaces' and thus command some protection.

#### *Award of Garden Excellence*

A precis of the proposed scheme, the opinions expressed and data collated since this subject was first introduced in 1959 was carefully prepared and submitted Mr. J. A. Hunter (Auckland). It had been well circulated prior to the conference.

#### *Resolved*

- (1) That the Institute adopt and initiate a scheme for awards to be made to plants of proved and outstanding excellence for garden use in New Zealand.
- (2) That the definition (name), procedure and rules for the award as set out in the precis before the Conference be accepted by the Conference so that this scheme may be proceeded with.
- (3) That the Conference accept in principle the suggestion of horticultural zones in association with the award and that a committee be appointed to bring down a suitable zoned map for the consideration of the next Conference or of the Dominion Council.

Mr. M. J. Barnett referred to the problem of micro-climates, throughout the Dominion, for which it was impossible to provide a zoned map.

Mr. Hunter was sincerely thanked for all the time and thought which he and others had put into this proposal and for the precis presented.

#### *Proposed Holiday Camp 1965.*

From opinions expressed it seemed very doubtful whether sufficient support could be promised the Camp to ensure its success and justify the efforts of the organiser. The time of year did not suit farming members and it was rather close to the holding of the Annual Dominion Conference. Appreciation of Mr. Teague's offer to organise the Camp was expressed.

*Resolved* 'That the Camp be not proceeded with, and that Mr Teague be sincerely thanked for his kind offer to organise it'.



*Venue of 1965 Dominion Conference*

It was announced that the 1965 Annual Conference of the N.Z. Institute of Park Administration would be held in Hamilton.

An invitation had been received from the Waikato District Council for the Institute's own Conference to be held there too. The invitation was accepted with warm appreciation.

*National Highways*

Mrs. C. B. Macalister (North Taranaki) suggested that a Committee was needed to advise the Government on new roading schemes and the subsequent beautification by plantings. The Dominion President stated that the Dominion Council already was in correspondence with the Chairman of the National Roads Board over this.

*Appreciation: Resolved*

That the Conference place on record its appreciation of the services of the Dominion Secretary.

*Address*

At the close of the formal business, Mr. J. Passmore (Dunedin) entertained the assembled delegates with the showing of a collection of colour-slides on his visit to England and the Continent in 1963. Vote of thanks to Mr. Passmore was moved by Mr. D. Combridge (Christchurch) and carried with acclamation.

*Banks Lecture*

An outstanding lecture on the subject of 'Man and the Vegetation of the Mountain Lands' was delivered (in the evening at 8 p.m.) to a very attentive and appreciative audience, by Mr. John T. Holloway, Officer-in-Charge, Forest and Range Experiment Station, N.Z. Forest Service, Rangiora.

Motion of thanks to Mr. Holloway was proposed by Professor L. W. McCaskill of Christchurch who spoke fittingly of the work of Mr. Holloway and of his father, the late Dr. Holloway, who was so well known in Dunedin for his botanical genius. The motion was carried with prolonged applause indicative of the audience's appreciation of the address.

*Closing*

The Dominion President brought the 1964 Conference to a close with an expression of warm appreciation to the Otago District Council, to the Parks and Reserves Department who had presented flowers to lady delegates and the wives of delegates, and to all who had worked together to make the Conference such a happy and memorable one.

*Due to lack of space publication of the Report of the Examining Board has been deferred until the June issue.*

## ASSOCIATES OF HONOUR

Citation in support of the Nomination of

**MR. JONATHAN BENNETT**

Nominated by the Taupo District Council.

Born at Takapau, Hawke's Bay and educated at Waipawa High School, Mr. J. Bennett served in the private gardens of Sydney Johnston Esq., at Orua Wharo, Takapau. In World War I he served in Gallipoli, where he was wounded, but later returned to service in France until the end of the war.

After being awarded the N.D.H. in 1935, Mr Bennett was placed in charge of reserves for the Eastbourne Borough Council, during which period he exhibited successfully at suburban flower shows. In 1937 he was elected to the executive of the East Harbour Horticultural Society, of which he was a founder member. During World War II he served in

the Middle East and in New Zealand, attaining the rank of Captain. On his discharge from the armed services he was appointed Landscape Overseer for the Wellington District by the Ministry of Works. In 1946 he revived the Johnsonville Horticultural Society and joined the Wellington District Council of the R.N.Z.I.H. and was elected a Fellow in that year. He also served on the Executive of the Wellington Beautifying Society 1947/1960, being elected President, in 1956. He was appointed Landscape Officer for New Zealand with the Ministry of Works 1954/1960.

From 1946 to 1960 Mr. Bennett adjudicated at many flower shows and addressed various horticultural societies. He formed a very successful Departmental Garden Circle within the Ministry of Works and also designed many planting projects, also the grounds and playing fields of Secondary Schools. He represented the Housing Construction Division of Ministry of Works in the Dominion Council of the R.N.Z.I.H. 1954/1960. On his retirement he was elected to the Dominion Council in his own right.

Following his retirement Mr. Bennett was appointed Senior Technical Officer in the Lands and Survey Department, and posted to Taupo to establish a nursery to produce native plants for 'Restoration and Control' project. This covered the planting in the Taupo basin, starting with the areas from Huka Falls to Aratiatia. It is aimed to plant 70,000 plants per year from 1965 onwards. At Taupo Mr. Bennett has planned and supervised the planting of three reserves at an Arbor Day function in 1961, for the Borough Council. It was this that gave the initial impetus to the formation of the Taupo District Council of the R.N.Z.I.H. in September 1961 with a membership of 78 by September 1962.

**Citation in support of the Nomination of  
COLONEL T. DURRANT**

**Nominated by the Waikato District Council.**

Colonel T. Durrant enjoys international fame as a *Camellia* specialist. Over the past 10 years Col. Durrant has imported, at his own expense, camellias from the U.S.A., Australia and Ceylon and he is largely responsible for the very wide range of camellia varieties now available in New Zealand. It is very largely due to his generosity that nurseriesmen have been able to propagate stocks of the newer varieties. The collections of camellias now being established at Rotorua and other centres are largely due to Col. Durrant's influence.

Col. Durrant's enthusiasm and energy was responsible for the formation of the New Zealand Camellia Society, of which he was first President, remaining in office until 1962. He had edited the *Camellia Bulletin* since its inception. His interest has led to cross-breeding and the result of his work is becoming evident in his garden at Tirau. He is a member of the International Camellia Society and contributes regularly to overseas publications.

In the course of their travels, Colonel and Mrs. Durrant have rediscovered a number of the earlier varieties of camellias that were believed lost to cultivation, including the variety 'White Spiral' that, apparently, is not known elsewhere, and requests from Windsor Castle gardens for this variety, have been received. Col. Durrant has also communicated with growers in Kuning, a province of interior China, where generous promises have been made of assistance in obtaining some of the famous plants from that locality.

**Citation in support of the Nomination of  
MR. JAMES WILLIAM MATTHEWS, F.L.S.,**

**Nominated by the Wellington District Council.**

Mr. J. W. Matthews is the Founder and Editor of 'The New Zealand Gardener', was Founder and first Editor of 'The New Zealand Science Review' and, at one time, was Editor of the New Zealand Association of



Scientific Workers. In 1947 Mr. Matthews delivered a lecture 'The Home Gardener — Hope and Fear of Horticulture' at the 6th Science Congress, held under the auspices of the Royal Society of New Zealand. He has been horticultural correspondent to a group of six daily newspapers, and contributes to various overseas publications.

With his wife, Barbara Matthews, he is joint author of 'The New Zealand Garden Dictionary'. He is author of several other publications including 'Garden Treasures', 'Soil Fertility', 'Garden with Matthews' (4 vols. of collective articles), and he has been Lecturer in Horticultural Literature to the National Library School since 1953. For one year he lectured on Horticulture to the Adult Education classes at Victoria University. For five years he was President of the Kapiti Beautifying Society. His spare time has been engaged in plant breeding, with particular interest in gerberas and zantedeschias, and experimental horticulture. Gerbera 'Guinea Gold', of Mr. Matthews' raising' is registered with the New Zealand Carnation and Gerbera Society, by Mr. J. A. Robinson. 'Powder Puff' is a promising but as yet unregistered *Gerbera*. Mr Matthews' sincere endeavour to help the average gardener is emphasised in all his writings. Horticultural information has been presented to the general public in a clear simple form.

**Citation in support of the Nomination of  
MRS. BARBARA WINIFRED MATTHEWS  
Nominated by the Wellington District Council.**

Mrs. Matthews is Associate Editor of the 'New Zealand Gardener', is a journalist in her own right, contributing articles on horticulture for publication under either her own name or pseudonym. For many years she was Garden Editor for the 'New Zealand Free Lance'. She is a keen photographer of floral subjects and many of her colour photographs have appeared on covers of 'The New Zealand Gardener'. She has lectured on various aspects of horticulture to numerous horticultural societies and groups. In the past she has given gardening talks over the radio. For many years Mrs. Matthews was a vice-president of the Kapiti Beautifying Society. In association with her husband, Mrs. Matthews has earnestly endeavoured to disseminate horticultural information in a form acceptable and useful to the general public. By so doing they have given valuable service to horticulture in New Zealand.

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## CONFERENCE HIGHLIGHTS.

*J. O. TAYLOR (Christchurch.)*

As is customary, the Institute's Conference coincided with the Annual Conference of the Institute of Park Administration. Unfortunately, however, the Institute's one day conference was held at the end of the Parks' Conference, and many Parks' representatives had left Dunedin, thus depleting the usually high numerical strength of our conference.

On Wednesday evening in the Mayoral rooms of the Dunedin City Council a very warm reception was extended to delegates and their wives by His Worship the Mayor. This reception was also in the nature of a farewell to Parks' Delegates and their wives, and the occasion was the social highlight of a very full horticultural programme.

The Auditorium of the Otago Museum, which was the venue of the conference, was both dignified and comfortable. The Mayor officially opened the conference and welcomed the delegates to Dunedin.

Under the able chairmanship of the Dominion President, Mr J. F. Living, the business was transacted in an efficient and thorough manner.

It was with great satisfaction that those present were again able to meet and to hear Mr M. J. Barnett, M.B.E., A.H.R.H.S., speak with his usual force and authority on many matters of importance. He has, however, for health reasons, relinquished his seat on the Dominion Executive.

The Banks Lecture, which was given this year by Mr J. T. Holloway, attracted a very large audience. It could be described as an outstanding lecture on many ecological problems of the high country of New Zealand, and it was presented in an interesting and informative manner for the layman and professional alike.

To mark the occasion of horticulture week, the Dunedin Horticultural Society held a three day flower show in the spacious town hall. Emphasis was on floral work and the themes which prompted the expression of floral art were legion.

In the competitive classes *Gladioli* were outstanding and one of New Zealand's premier *Gladioli* exhibitors, Mr W. R. 'Bill' Toon was again to the fore.

Perhaps the most outstanding exhibit in the show was that of the Dunedin Rose Society. Across almost the entire width of the hall a walling and terrace effect was erected. Pillars stood at the flanks and at intervals along the wall, and on these pillars were placed massive bowls of roses. Along the front of the terrace a riot of colour was created by the use of thousands of rose blooms, and groups of bedding plants, such as begonias and antirrhinums.

At the opposite end of the hall a very choice exhibit was staged by the Canterbury Horticultural Society. In a setting of superb specimens of tropical foliage plants three massive bowls on elegant columns were artistically arranged. A further two colourful bowls were set low in the foreground.

Dunedin and its environs are perennially green, and visitors could not help but be impressed by the freshness of the city. The Parks and Gardens were well groomed, lawns well trimmed and trees heavy in leaf.

In the Botanic Gardens the Begonia House was a joy to see and the new fernery displayed the full magnificence of our native tree ferns.

In the heart of the city one's eye was caught by the beautifully tended and colourful verandah boxes which adorn the building of Arthur Barnett Limited.

We extend our thanks to Dunedin once again for being our hosts at a conference which was both profitable and enjoyable.



