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# NEW ZEALAND PLANTS AND GARDENS

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

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## PERMANENCY

Permanency or, to use a familiar gardening phrase, 'planting for permanent effect' has a definite appeal to gardeners. Annuals and biennials have their uses, but they are never with us long enough to gain a firm hold on our affections.

It is quite a different matter when we turn our attention to perennials, bulbs and hardwoods. Many gardeners, especially in districts where there are cold winters, will know the thrill they enjoy at the appearance of the first spring crocuses regularly in the same spot where a colony of them was planted a good many years ago. The same feeling accompanies the appearance every spring of a drift of golden daffodils, with their Wordsworthian charm. So it is with perennials, even though some of them may have to be lifted, divided or otherwise increased and replanted periodically. They are all scions of plants we introduced to our garden many years ago, true to type in every way, not just nondescript seedlings.

There is the wonder, too, of the hellebores that defy soil solid after a black frost, and give us their white flowers in mid-winter. Equally persistent and permanent are the *Cyclamen* species and, going from pygmies to giants, the herbaceous paeonies can only be seen at their best after they have been established for many years — true permanent, old inhabitants of a garden .

Memorial plantings in the form of trees planted originally as saplings by some notable personality, or to commemorate a person or an event, or to celebrate Arbor Day — all these are permanent plantings in the best sense. Throughout the world there are trees of historical importance and a number are extremely old, like the line of green English yews, planted in Henry VIII's time in the gardens of Hampton Court Palace.

There are ancient trees in New Zealand whose origins seem lost in the mists of time. Some of these have historical association. These are in process of being listed, checked to be sure they still exist, and they will eventually be published as a supplement to this Journal.

Many may argue that, in a world of constant change, there is no such thing as permanency. True, there is always the threat of the



elements. Civil authority has the power to make a noble tree of venerable years yield to the axe's edge. But it is equally true that trees still exist that have reached an age far in excess of the human span. Because of this we must temper our plantings with caution and see that there is a reasonable expectation that our trees will remain unharmed through the centuries that lie ahead.

G. A. R. PHILLIPS,  
Editor.

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## THE BOTANIC GARDENS, WELLINGTON

A BRIEF HISTORY TO 1947

By PAT LAWLOR (Wellington)

Before coming to my own recollections of the Wellington Botanic Gardens, dating back to the beginnings of the century, I found it necessary to probe the scanty records available so as to give some kind of connected story as to their origins and growth. In this I have been assisted by some fugitive notes made nearly fifty years ago by our most eminent botanist, the late Dr. Leonard Cockayne.

From these notes it seems that when the earliest settlers came to Port Nicholson the area now occupied by the Gardens was covered by a dense semi-costal rain forest which filled the gullies and clothed the slopes above. It was not long before the settlers were carving out homes and farms and the tallest of the trees in this area were destroyed. At the period that Dr. Cockayne was making his notes he recorded that, even then, the Gardens contained 'a fairly well preserved example of the original forest . . . there is still a dense, rich vegetation of about 110 kinds of small trees, tree-ferns, shrubs, lianes, and ferns in general'. He then itemised some characteristic plants of the New Zealand flora represented 'by fine examples in this invaluable open-air museum: e.g., the cauliflorous tree *Dysoxylum spectabile*, the dimphoric *Pennantia corymbosa*, *Pseudopanax crassifolium* var. *unifoliolatum* (with its juvenile and adult forms so different that at one time they were held to be distinct species), *Rubus australis* (a huge bramble), and *Myrtus bullata* with its curious blistered leaves.'

Leaving the learned Doctor, we retrace our steps and note the gradual ascent of the settlers from the waterfront to the hills, so that it was not long before small farms commenced to spring up on the partially cleared land. By a strange coincidence I met, while I was making my notes for this article, a well-known Wellington resident named Mr. Hardy Randal, who told me that his father, Richard Randall, 'was born in the Botanic Gardens in 1866'. To be more to the point, he was born in a cottage on a farm there. Richard Randall was a partner in the firm of Judd and Randall, old time plumbers of this city.

### The First Step

At what period in our history the farm or farms were purchased



so as to be apportioned as a reserve for the city I am unable to ascertain. It may have been some time in the sixties. In her entrancing book *The Streets of My City*, the author, the late Miss F. L. Irvine-Smith, states that a principal mover in this acquisition was William Thomas Locke Travers, F.L.S. (1819-1903) a former city solicitor, botanist and ornithologist, 'and withal an ardent and selfless worker for the progress and enlightenment of the city of his adoption'.



W. T. L. TRAVERS, F.L.S. 1827-1878 (See page 155/156)  
(Photograph by courtesy of Alexander Turnbull Library)



Travers was a passionate lover of trees and, along with Sir James Hector and Messrs. Mantell and Ludlam, was instrumental in getting the reserve set aside for the Botanic Gardens. Travers Street was named after him. Concluding her reference, Miss Irvine-Smith states: 'Mr Travers was to a large extent the tree arbiter of his day, and on the opening of the Wellington Boys' College, 1874, of which he was a member of the Board of Governors, he supervised the planting of the College Reserve, 600 trees being distributed throughout the lower area. On April 26th, 1903, William Travers was killed at the Hutt Railway Station by falling between the train and the platform'.\*

I do not remember the tragic occasion but I do remember that about that time I made my first visit to the Gardens. I used to go there with my mates to play 'Boer Wars'. The Gardens were then a lovely and wild place, and what a grand terrain for the re-enactment of the Siege of Mafeking, with trees to climb and with ferns and gorse fighting for survival on the higher slopes. We climbed the gullies, forded the small streams and descended to sail our toy boats on the water-lily pond. Here we had to be more circumspect for reasons I shall explain shortly.

I remember one mighty oak near the junction of Orangi Kaupapa Road and Glenmore Street which grew into a graceful arch. We were told that years earlier the same tree formed a bridge over an intervening stream. This particular tree was scheduled to be cut down some 20 years later but nearby residents protested. In the twenties the gully stream referred to was culverted and the precipitous gully filled in to make an expanse of lawn.

Although no actual date appears to have been recorded, at some time in the early days of the Botanic Gardens, a collection of New Zealand plants from the plant museum was sent to the Royal Botanic Gardens, Kew.

### A Miniature Zoo

One of the greatest attractions at the Gardens in the early days of the century was the miniature zoo located in the vicinity of the lake. At first they had only an emu, then along came some monkeys, birds and other animals. Speaking from memory, and subject therefore to correction, I think it was this collection which included Percy, the famous long-lived Australian pelican that died at the Zoo the other day; also that the same collection prompted Messrs Bostock and Wombwell, the circus people, to offer to donate a lion as the foundation of a zoo. The Wellington City Year Book records that this lion, the famous King Dick, was donated by Wirth Bros. Circus, but it is firmly in my mind that Bostock and Wombwell's were the donors. At all events, the

\*History tells us that the Gardens were first known as 'Colonial Botanic Gardens'. By the Wellington Botanic Gardens Act 1891 the area held by the then Board of Governors was vested in the Wellington City Council as a place of public recreation and enjoyment with a proviso that the original 13 acres must be kept as a Botanic Garden for all time.



*Garden of Remembrance, Botanic Gardens, Wellington* (see page 161)

(Photograph by Courtesy of the Wellington Public Library)

miniature zoo was transported to Newtown Park to grow into the notable collection we see there today. When King Dick passed on such portions of his remains as would interest a taxidermist were transformed into a reasonable likeness and for years was a centrepiece at the old Newtown Library when it was located near the Public Hospital.

### The Days of 'Old Ben'

Going back to my boyhood days it must be admitted that the joy of our early adventurings in its hills, valleys and steep and winding paths, was due to the fact that much of what we did was forbidden. The custodian at that time, by name 'Old Ben', was obsessed with the idea that his gardens must be protected at all costs. With barbed wire, many notices, intervening gates, and the massive, forbidding gates at the main entrance, he made the gardens more like Mount Eden than the Garden of Eden. At the main gates even was the bold salutary proclamation that 'These gates will be closed to all at sundown'. 'Old Ben' lived a life of perpetual warfare with small boys and frowned even at adults if they as much as strayed one foot from his crazy paths.

So, for years, the Gardens remained a kind of dark forest until the year 1918 heralded the arrival of 'Mac', the likeable J. G. MacKenzie who was Director of Parks and Reserves from that time until January, 1947.

### 'Mac's' Reformation

'Mac' was a kind of horticultural Pope John; he, as it were, threw open the windows, first by taking the forbidding entrance gates off the hinges, rolling up the barbed wire, eliminating many of the warning notices. Soon he got busy on some of the ugly ancient trees. The last mentioned activity set many people writing protesting letters to the papers. However, 'Mac' was a determined man so it was not long before the Gardens commenced to attract many visitors once more. During his term, however, the depression and later the Second World War curtailed development and severely limited expenditure.

The ever-encroaching gorse and ugly growth of scrub was steadily cleared away to make place for attractive landscaping. Mr. MacKenzie's extensive knowledge of plants, trees, shrubs and many exotics enabled him to transform the hillsides and the valleys. He knew what to plant and where. All this was a very valuable foundation for later development.

He had imagination, had 'Mac', as when he planned his vast colony of tulips, setting in motion that most popular feature of his time, 'Tulip Sunday'. The attendance on the first of these occasions, when there were nearly 20,000 blooms on display, was an eye-opener. The tulips gallantly stood up to a gale a few days before the event. I remember celebrating the occasion in the following alliterative rhyme in the *Evening Post*:



Twisting, turning, twining,  
Tossing tornado through,  
Twenty thousand tulips  
To their tryst turn true.

Toilers tenacious tending,  
(Tillage talent too),  
Took tender trustful tulips  
Tempestuous trouble through.

Trumpets then triumphant,  
Tender the tulips tall;  
Their tintillating tribute  
To tulips thrilling thrall.

The tulips increased in time to 30,000, a miniature, maybe, of the proud boast of Rameses who supplied the temples with nineteen million nosegays from his walled gardens.

Mac's restoring hand was evident all over the city. He cut down many ugly trees, replacing them with comely ones. In time, he became known as 'Pohutukawa MacKenzie' because of his fondness for these beautiful trees.

When the time came for his retirement we just wondered how such energy and knowledge could be replaced.

### A Magic Wand

Triptolemus was good to us; he gave us a notable successor in Mr. E. Hutt. For eighteen years this dedicated Director of Parks and Reserves has carried on his remarkable work not only in the Botanical Gardens but over the whole city. Only those who have lived in Wellington and have observed the gradual transformation can appreciate the miracle wrought by Mr. Hutt and his band of workers. The magic of his wand is to be observed in the most unexpected places.

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### YEARS OF PROGRESS — 1947 - 1965

G. A. R. PHILLIPS

The very hilly nature of the site of the Botanic Gardens offered considerable scope for effective landscaping. But it needed skilled and imaginative direction to proceed in such a way that each individual feature, formal or informal, should be complete in itself, and yet form part of the whole scheme. The choice of Mr. E. Hutt as the new Director was a most happy one.

Mr. Hutt's early experience in horticulture was gained with the internationally famous firm of Dobbie and Co. of Edinburgh, during

the time when the direction was in the able hands of Mr. William Cuthbertson, V.M.H. In 1928 Mr. Hutt came to New Zealand. He was in charge of the Parks and Reserves, Lower Hutt, until he became the Director of Parks and Reserves, Wellington. Mr. Hutt has served on the Dominion Council of the Royal New Zealand Institute of Horticulture (Inc.) for many years and was made an Associate of Honour in 1953. For over 30 years Mr. Hutt has been an active member of the Examining Board. With this experience and background progress was to be expected.

At the time of Mr. Hutt's appointment various post-war clearances were in progress. The American Camp Anderson was dismantled and the park restored. This was completed by 1949 and in 1950 a circus was parked on the portion of the area that is now the Lady Norwood Rose Garden. This famous rose garden was named in honour of Lady Norwood, a former Mayoress of Wellington, who presented the central fountain to the Garden. As the years passed rose trial beds were formed in the surrounding lawn. In 1961 the colonnade was erected with climbing roses planted at the bases of the columns to provide an ornamental enclosure. This area is quite level, ideal for the formal lay-out used, where the brilliant colours of the roses find their perfect foil in the turf paths and the foliage of the shrubs and trees that are growing on the rising ground above. The begonia house, presented by Sir Charles Norwood, forms a most impressive feature along one side of the Rose Garden. The Botanic Gardens contain, in all, between 3000 and 4000 roses.

Another of the older features of the garden was demolished in 1953. This was the old rose garden which comprised 40 beds, each margined by a box hedge. There was also a large bamboo with an archway leading to the rose garden which was surrounded by steep, rough banks of buffalo grass. In the same year the construction of what is now the Sound Shell was started on this area. Arbor Day, 1953, was celebrated at the Gardens by the planting of several kauris (*Agathis australis*), by the late Dame Elizabeth Gilmer, along the shrub border at the south end of Anderson Park. These were named 'Queen Elizabeth Kauris' in honour of the Royal visit that year. In addition, several *Eucalyptus ficifolia* were planted to the north of the Gardens overlooking Bowen Street.

A further entrance to the Gardens was formed, leading past the wheel-house of the cable car. In the years that followed several *Cupressus macrocarpa*, including one large specimen that used to overhang the path leading to the children's playground, and a considerable quantity of scrub were removed. The trees of the pine plantation at Glenmore, above the lawn which bordered Glenmore Street and lying below the Magpie Lawn, were found to be unsafe and were accordingly cut down, the stumps being left in the ground to decay. This area has been since planted with ornamental shrubs and specimen trees.

After the completion of the Sound Shell on the site of the old rose garden the old band rotunda, that used to be on the lawn above the pond at the end of the main drive, was demolished. This left an extension to the lawns along the back drive parallel with Glenmore Street. Many years before this area had been effectively landscaped by the planting of mature specimen trees. Among these are included a puriri (*Vitex lucens*), planted by Sir John Luke, Mayor of Wellington from 1913 to 1921. The swamp cypress (*Taxodium distichum*), the tulip tree (*Liriodendron tulipifera*) and the golden ash (*Fraxinus excelsior* 'Aurea'). These add considerably to the beauty of this part of the Gardens.

The Bolton Street tip used to occupy an area above the old rose garden at Anderson Park. A fire, which continued to burn for practically the whole of October, 1957, caused this tip to be closed from January, 1958. A bulldozer, with scraper attachment, was used to clear the area and in the same year it was sown with grass seed, specimen trees being planted in the sloping ground. The pohutukawas along Salamanca Road had been allowed to grow rather too freely and had to be cut down to a more manageable size.

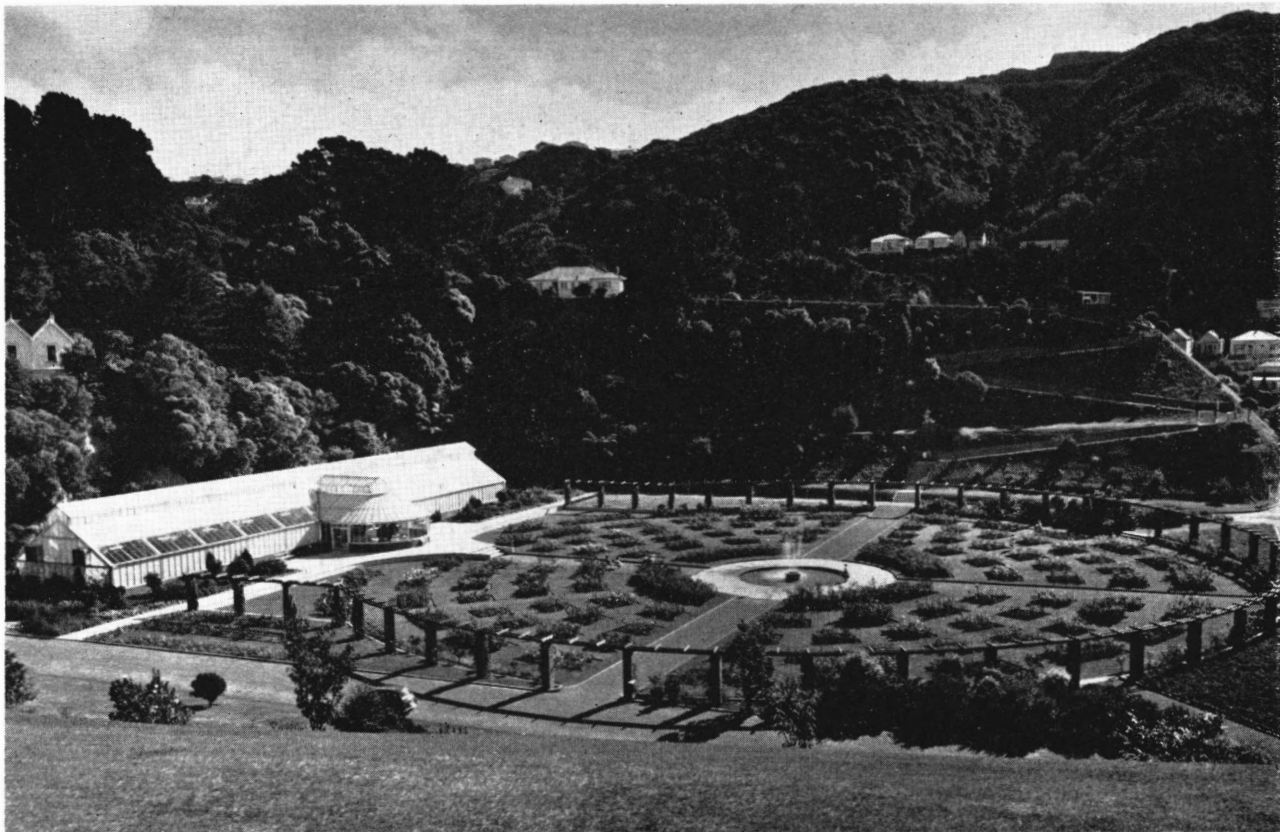
The visit of the Queen Mother took place in 1958 and this involved the use of a considerable amount of decorative plants. Accordingly the Gardens nursery was used as a holding area for begonias of the *multiflora* group, and foliage plants required for decorations at the Town Hall.

Developments during 1958 embraced the sloping ground on the City side of the Gardens, below the Meteorological Office. A considerable amount of scrub and dead trees was removed. The area was carefully landscaped and planted with rhododendrons. The rhododendrons appear to have taken kindly to these conditions and all look well, framing a very effective vista overlooking the City. From the highest point of the Gardens there is a magnificent panoramic view of the City and harbour.

The year 1959 will be remembered for the planting of the Camellia Garden. This lies in a small valley situated at the top of the Sunken Garden and above the old stables and tool shed. Old trees were thinned out and the border along each side was extended to make an ideal site for camellias. There were many varieties, including *C. reticulata* 'Captain Rawes'. Groups of lilliums have been interplanted among the camellias, and this provides two magnificent seasons of flower in a single year.

Mounting the flagstone steps, flanked by camellias and groups of lilliums, we find the path that leads to the lower slopes of the Garden of Remembrance. This Garden was formed as a memorial to the fallen of the two world wars. Old trees, scrub and manuka were removed in 1959, and the road was realigned and improved. Construction of the Garden of Remembrance was started in the same year. The Garden is laid out in several levels and these are divided by brick retaining walls and linked by flagstone paths. A look-out was also built and from this may be seen a fine view of the north end of the City. The garden





*The Lady Norwood Rose Garden and the Sir Robert Norwood Begonia House (see pages 160 and 163)*

seats that now offer welcome resting places, along the paths, for visitors were presented by the Rotary Club in September, 1960.

In June, 1960, the initial preparation for what was to prove a major feature of the Gardens was made. This was the new Begonia House presented by Sir Charles Norwood. The site was surveyed and construction proceeded to completion. The house measures 180 feet long and is 30 feet wide, and has been constructed so as to include the most modern amenities. There is modern infra-red heating, which combines comfortable temperatures for visitors and, at the same time, ideal heat and humidity for the plants themselves. There is fluorescent lighting to illuminate the interior of the house when desired. Ventilation is by suction fans as well as the more orthodox methods. The house is constructed on a framework of metal throughout. The collection of plants cultivated is by no means confined to begonias, although they certainly dominate when they are in season. A very wide range of native and exotic plants is grown. A particularly interesting plant during the past winter has been *Coelogyne cristata*, well established on a ponga stem and flowering profusely.

The wording on the plaque at the entrance is as follows:—

PRESENTED BY SIR CHARLES NORWOOD  
TO THE CITIZENS OF WELLINGTON AS  
A TOKEN OF HIS AFFECTION FOR THE  
CITY OF HIS ADOPTION  
22nd DECEMBER 1960

In 1960 the drive below the Meteorological Office was cut back to permit the passage of the Meteorological radar tracking unit. This was moved from its original site at the top of Salamanca Road to its present position on the lawn of the D.S.I.R. laboratory above the Meteorological Office.

In 1961 the rough banks opposite to the Sound Shell were recontoured. An old path was replaced by flagstone steps and an imposing dry wall constructed from the Main Gates up to the top drive to retain the sloping ground and rock gardens that were above. Among the many plantings that were carried out were daphnes, maples, dwarf conifers, ericas, callunas, azaleas and many of the smaller herbaceous perennials. In the same year, on the lawn near to the golden ash where the band rotunda used to stand, two Canadian sugar or rock maples (*Acer saccharinum*) were planted — one by the Mayoress of Wellington, Mrs. F. J. Kitts, and the other by Mrs. G. R. Heasman, wife of the Canadian High Commissioner.

Important improvements near to the Main Gates were made in 1962, when the sloping ground above the brick wall outside the gates was formed into another large rock garden. The wide selection of carefully chosen shrubs and perennials planted there has added greatly to the Botanic Gardens Main Entrance. In this year, too, there has been

formed the zig-zag pathway leading from the Rose Garden to the look-out, where the view from above the Rose Garden and the Begonia House will be found to be well worth the climb. The look-out can also be reached by means of the path leading from the Main Gates.

To commemorate his visit to New Zealand in 1963, His Excellency Hayato Ikeda, Prime Minister of Japan, planted a Japanese flowering cherry on 4th October. The new Fuchsia Garden was established in 1964. It contains nearly one hundred varieties of free-flowering fuchsias and these are already attracting the attention of visitors. It is situated on the back drive parallel with Glenmore Street.

The enormous quantity of plants required for bedding out in the open spaces, decorating civic buildings and interior decoration on special occasions makes the inclusion of a plant producing nursery imperative. In this nursery is the old begonia house, two propagating houses, each incorporating modern mist propagation equipment. In the first year these houses produced 25,000 trees and shrubs, also 5000 *Hebe speciosa* 'Variegata Aurea', destined for the lettering on the bank at the north end of Wellington Airport. The need for a further house for holding begonias and various house plants caused another glasshouse to be built in the nursery. This is in addition to the original house opposite to the Director's residence .

In August, 1965, Mr. Hutt retired from office, having directed 18 years of outstanding progress and development along very desirable lines. He has left a firm foundation upon which we may be sure his successor, Mr. I. D. Galloway, will make further advancement.

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## NOTES FROM THE CHRISTCHURCH BOTANIC GARDENS

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

Up until the middle of June conditions were very good for winter, in fact almost pleasant. Day temperatures were generally above normal, rainfall was light, and frosts conspicuous by their absence. However, from mid June onwards the weather in Christchurch was particularly unpleasant. Rainy days followed each other with monotonous regularity and were interspersed with sleet and sometimes snow showers. The Port Hills had several falls of snow, none of which lasted for any length of time except for a few heavy drifts on the tops. However, it all had an effect on the general lowering of temperatures.

As well as continued rain in July there was a series of severe frosts, which coming on top of a wet soil made their effect more marked. In all, 21 ground frosts were recorded for July, and most people agreed that it had been the coldest since 1945. Although, so far, August has been a drier month, temperatures are still very cold and the present indications are for a late spring.



Considering the severity of the winter, damage to plants has been slight. Some of the worst affected have been some types of *Hebe*, particularly cultivars which have the blood of *H. speciosa* in them. Oddly enough, *H. speciosa* itself is quite hardy but some of its progeny are quite susceptible to frost damage. One or two Australian plants, such as *Isopogon* and *Calothamnus*, have been frosted, but otherwise little damage is as yet evident. Possibly the main reason why so many of the more tender plants have stood up to the frosts without damage is that last summer was long and dry. Consequently growth would have been well ripened and would stand much lower temperatures without harm.

One of the most useful genera of shrubs for the garden is *Viburnum*. and during the months of September, October and November many gardens are enhanced by their beauty and fragrance. There are one or two which flower at other times of the year but the great majority are spring and early-summer flowering. There are about 120 species which range from North and Central America through Europe and Asia, and south to Java. The genus has its headquarters in eastern Asia and it is from there that some of the finest species have come. Almost 100 species and varieties are in cultivation and with so many one would think that there would be quite a number of good garden shrubs among them. However, comparatively few may be regarded as good garden plants.

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*Viburnum* includes both evergreen and deciduous shrubs, and while most are grown for their flowers, others are valued for their foliage, and a few are grown for their fruits. Three main types of flowers occur in *Viburnum*: in one there is a flat cluster several inches in diameter which is made up of many small, perfect flowers of a white or creamy white in colour. Another which may be referred to as the 'snowball group' has rounded clusters of all sterile flowers which do not bear fruits, and the third has flat clusters composed of fertile flowers in the centre with a periphery of large and showy sterile or ray flowers.

Let us now look at some of those grown in the Christchurch Botanic Gardens. At the present time about 20 species, varieties and cultivars are being grown. During the winter and spring months *V. fragrans* and *V. tinus* are the first to flower. *Viburnum fragrans* is a native of Kansu, China, where, according to Farrer, it is one of the best loved and most universal of garden plants. In Christchurch it flowers intermittently during any time from March to October. Personally I have always been rather disappointed with this shrub, for while the flowers are very attractive and have a charming fragrance they are seldom produced in sufficient quantity. Perhaps in other districts it is more satisfactory. Popularly known as 'Laurestinus' and probably well enough known to need no further description is *V. tinus*. For a number of years now it has been very much in disfavour, but in districts where it is not susceptible to attacks of thrips it is still a very good winter flowering shrub. Very little is known in this country of *V. tinus* var. *hirtum*. It is a robust growing shrub, much stronger than the species, and attains 16 feet or more. The foliage is rough (almost rugose) and hairy, and individual leaves measure up to 6 x 4 inches. The flowers are produced in much larger cymes, and in Christchurch it does not usually commence flowering until the spring.

The next species and cultivars must all be considered together as they all have somewhat similar characters. They are *V. bitchiuense*, *V. carlesii*, *V. x judii*, *V. x burkwoodii* and *V. x carlcephalum*. They all flower around about the same time, the flower clusters are white and showy, and all are typified by a delicious fragrance.

*Viburnum bitchiuense* is from the Bitchiu Mountains in Western Japan, and it is a deciduous shrub growing to a height of 10 - 12 feet. For many years it was regarded as an inferior form of *V. carlesii* and it still suffers from comparison with that species. It is distinguished from *V. carlesii* by its taller and more straggling habit, and its smaller flowers. In fragrance the two species are about equal and a well flowered bush of *V. bitchiuense* is a fine sight.

*Viburnum carlesii* is a native of Korea and was introduced in cultivation in Europe in 1902. It seldom grows taller than 6 - 8 feet, and its fragrance is without doubt the best of the genus. Because of its more compact habit it is the better of the two for home gardens. It is interesting to note that in the U.S.A. it is susceptible to a disease which has lessened its popularity as a garden plant.

*Viburnum carlesii* has quite understandably been used as a parent for one or two crosses, one of the oldest and best known being *V. x burkwoodii*, which was raised by the well-known nursery firm of Burkwood and Skipwith in 1924. Its more or less evergreen habit, and longer period of flowering make it quite a charming shrub.

Another hybrid from the nursery of Burkwood and Skipwith is *V. x carlcephalum*. This, as the name suggests, is a cross between *V. carlesii* and *V. macrocephalum* and it forms a compact shrub rather similar to the former species, but the large, round clusters of flowers may be up to 5 inches or so in diameter. When in full bloom it makes a very handsome bush but as yet does not appear to have made a great impact on local gardens. The last of this group to be mentioned is *V. x juddii* which originated in the Arnold Arboretum, U.S.A., in 1920. It is the result of a cross between *V. carlesii* and *V. bitchiuense*, and is not markedly different from either. However, in the U.S.A., it has proved quite popular because its constitution is somewhat hardier than *V. carlesii*. Although it originated 45 years ago it is only a comparatively recent arrival in New Zealand. All of these hybrids have a delightful fragrance but none can match *V. carlesii*.

The common name of snowball tree is applied to one or two plants which produce large, round clusters of completely sterile flowers. The commonest is *V. opulus* 'Roseum', perhaps better known as *V.o.* 'Sterile'. It is an old cultivar of the guelder rose which has been known in English gardens since the sixteenth century. The epithet 'Roseum' derives from the fact that the flowers frequently turn pink as they age. This is still a favourite in local gardens and has not yet been supplanted by *V. macrocephalum* or *V. plicatum* (formerly *V. tomentosum* 'Sterile').

A number of viburnums are grown for their fruits but only one or two are really showy. Some need cross pollination and the failure of some species to fruit is often due to the fact that there are no suitable pollinators nearby. Another disadvantage is that the fruits are quickly eaten by the birds and seldom stay on the bush for long. Some of those grown for their fruits are *V. opulus*, *V. dilatatum*, *V. rhytidophyllum*, *V. setigerum*, *V. japonicum* and *V. betulifolium* 'Trewithin Form'.

Only one or two of the species may be considered as good foliage plants and the one most commonly seen in this country is *V. rhytidophyllum*. The large, handsome leaves can, under good conditions, be quite striking. It is interesting to note that in the U.S.A., *V. sieboldii* and one or two other species not grown here are superior. On the other hand, Bean (*Trees and Shrubs Hardy in the British Isles*) rates it quite highly. A yellowish-leaved form, *V. rhytidophyllum* 'Aldenhamensis' is sometimes grown in this country but it never appears to be as striking as the species.



In the Primula Garden there is a plant of *V. cylindricum* but so far it has not shown any special claim to merit. Our plant of *V. x bodnantense* 'Dawn' died several years ago and has only just been replaced. From memory it was a quite pleasing shrub which was more floriferous than *V. fragrans*, one of its parents. There are one or two other species such as *V. lantana* and *V. setigerum* in the Botanic Gardens collection but mostly they merit no more than a passing glance.

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### NOTES FROM AUCKLAND

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

Since news from Auckland was last published in this Journal, the Queen City has passed the half-million population mark. No doubt this rapid growth has been due in part to keen gardeners migrating northwards in the hope of finding a winterless climate. However, many must have questioned the wisdom of their choice in recent months whilst Auckland has been experiencing frosts of a severity and frequency unequalled in living memory. The recording of several 7° frosts at Albert Park in the heart of the City is something Auckland gardeners won't forget very quickly.

Fortunately the foliage and flowers which Parks Department have introduced on to the inner City streets in recent years have shown no apparent signs of damage. The wider use of plants, and in particular trees, has certainly enhanced the appearance of these drab streets and given the man in the street a certain civic pride. The speeding up of City beautification schemes commenced less than 5 years ago, and already are making their mark upon the character of the City. The first aim was to get extra trees into the downtown area, for it was realised how much more important mature trees are than pretty flower beds to the appearance of a city. From past experience it was quite apparent that if the desired effect was to be obtained within a reasonable time, the use of trees of a size beyond vandalism damage was necessary. To this end, it was decided to transplant surplus trees from the City Parks, although this could limit the range of selection. Furthermore, with no time available for preparing the selected trees, a somewhat larger than usual root ball was prepared, and some were up to 8 feet in diameter. This subsequently had the advantage of giving sufficient stability to the trees without the use of stay-wires, which are usually not practical on city sites.

In the first Spring, a *Betula alba*, *Melia azedarach* and *Hovenia dulcis* (Chinese Raisin Tree), all about 12 feet in height, were transplanted into the frontage of the Bledisloe State Building. Since all were of a weight necessitating the use of a crane, the lift was taken on the lower part of the trunk, which was well padded with hessian and timber to avoid bark injury. In the replanting process, ample topsoil was carefully rammed and watered round the transplanted rootball, so as to

eliminate air pockets. Regular feeding and watering during the subsequent summer ensured that the trees not only made rapid recovery, but also continued normal growth. This is exactly what the National Shade Tree Conference defines as successful transplanting, for mere survival is no longer considered sufficient.

The result of this first effort gave encouragement for further projects and the following winter two 20 feet high Pin Oaks (*Quercus palustris*), each weighing about 4 tons, were transplanted on to City streets. Later, two Chinese poplars (*Populus yunnanensis*) were used in the City Markets area, where motorway development could alter the routes within the next decade.

The provision of two traffic islands outside the General Post Office in Queen Street gave further opportunities for introducing trees, but the specification did appear rather impossible at first. The branches were not to obstruct traffic visibility nor interfere with adjacent trolleybus wires. The roots were not to damage stormwater pipes less than 6 feet below the surface, and yet be able to tolerate saline soil conditions, since the site is reclaimed land. The New Zealand Cabbage Tree (*Cordyline australis*) appeared to satisfy these requirements and, at the same time, be a very appropriate choice for an important gateway to the City. Two 15 feet specimens were shifted on to the site and, in association with floral beds, they transformed the area. The pleasure which they gave to everyone prompted the construction of two further islands to complete the scheme. By the time this site was ready for planting three trees were required, since one of the earlier specimens had been struck by a car and the trunk shattered. Although cabbage trees abound throughout the country, it is a surprisingly difficult task to find matching trees of a good shape on a readily accessible site. The way in which these trees have grown away vigorously does illustrate how trees, normally considered very hardy, do respond to good garden treatment.

At about the same time it became apparent that insufficient semi-mature trees were going to be available from parks to continue this scheme. Therefore an appeal was made to citizens for offers of trees which had outgrown their gardens or were going to be destroyed in subsequent development. The response was overwhelming and offers are still being received each week. The number of trees inspected has run into hundreds, but the number accepted has been small, due to many being of species unsuitable for transplanting or on sites inaccessible to cranes. The most common trees offered have been silver birch, *Liquidambar* and cabbage trees. These have been transplanted successfully without any prior preparations. At least a dozen trees occupying strategic sites about the City have come from private gardens.

On several city streets where there was a restricted space of about 4 feet between underground services, the planting of trees has been permitted by sinking 3 feet lengths of 4 feet diameter pipes into the pavement like enormous flower pots. These have prevented the lateral



*Cabbage trees outside the General Post Office in Queen Street soften the surrounding architecture (see page 169)*

—(Photograph: Auckland City Council)

spread of the roots until they have struck down beneath the services. Advanced nursery specimens of *Paulownia tomentosa*, some 10 to 12 feet high, have been useful in such situations, and within a few years they have settled down to regular flowering habits, as well as producing a good shade canopy.

However, on too many City streets the multiplicity of underground services scattered beneath the pavement precluded permanent planting, and it was considered desirable to introduce trees in tubs on to the main thoroughfares. A reinforced concrete tub 3 feet high and 3 feet 6 inches wide at the top tapering to 2½ feet at the base was designed and put into production. The choice of trees was determined by the range of advanced nursery specimens available, and those offered from private gardens. Species which proved particularly suitable for this purpose included *Acer negundo*, *Betula pendula*, *Fraxinus ornus*, *F. excelsior* 'Raywoodii', *Melia azedarach* and *Populus yunnanensis*. The only evergreen subject used at first was *Cryptomeria japonica* and these could be sited only against buildings as the foliage cover to soil level could interfere with pedestrian visibility if placed near the kerb on busy streets. The staking of the trees within the tubs was provided for by means of ¾ in galvanised piping which was bolted through an inch hole in the base. Floral plantings around the base of the trees considerably increased the impact of the tubs on City streets, and plants which have drawn favourable comment include ivy-leaved geraniums, *Sedum palmeri*, *Polygonum capitatum*, *Nepeta mussinii*, *Dimorphotheca* hybrids, fibrous rooted begonias, petunias and marigold 'Tangerine'. Whereas some of these subjects have required replacement during the season, *Chlorophytum comosum* 'Variegatum' (*Anthericum*) has given a full season effect with the large rosettes of arching fresh green linear leaves with margined edged in white. An interesting observation has been that the tubs have dried out more quickly in the early autumn after it has been necessary to remove the spent annuals.

Prior to being put on the streets in late October, the tubs have each received two applications of water based paint of suitable pastel colours. It has been learnt that choice of colours is a very personal matter, and those which appeal to one section of citizens may draw strong criticism from another group. However, all have strongly supported the scheme, which is the most important thing for a local body project.

During the past three years, the number of tubs has been built up until at present preparations are under way for putting five hundred on the streets this summer. Naturally it has been possible to extend the range of trees, and an interesting development has been the way subjects such as *Ginkgo biloba*, *Liquidambar styraciflua* and *Populus robusta* show autumn foliage colours. The deciduous subjects are returned to the nursery after leaf fall for shaping, the replanting of floral plants around the bases, and repainting.



*Trees in tubs and hanging baskets frame a view from Quay Street to the Overseas Shipping Terminal (see pages 171, 173).*

—(Photograph: Auckland City Council)



Plans are under way for increasing the range of evergreen trees to maintain the effect over the whole year on certain sites. Already *Brassaia actinophylla* (Queensland Umbrella Tree), *Tristania conferta* (Australian Box) and timber species of *Eucalyptus* are being used for this purpose with success. The advantage of *Eucalyptus* species is that under ideal conditions they can be transplanted from open ground at a size of 6 to 8 feet high, whereas most suitable evergreens require several years' growth in smaller containers.

A tub fully planted weighs about 17 cwt. and originally they were handled by a fork-lift truck. Such equipment was expensive to hire, unable to handle the tubs with safety on uneven surfaces and slow in road travelling. This was overcome by the design of a jig which was attached to the breakdown wagon which tows the low transporter. This attachment grips on the shape of the tub and completely eliminates any risk of tubs capsizing in handling.

The task of watering these tubs has not been without its problems, particularly in the early stages. It has always been carried out with tankers, but with the growth of city traffic it became necessary to avoid this work during normal business hours. Also, experience has shown that it is important to use semi-skilled staff on this work for satisfactory results. Furthermore, the five 2 inch diameter drainage holes in the base have been found excessive and reduced to one with no ill-effect on the trees. With these alterations, it is hoped that a thrice-weekly frequency will be the maximum necessary at most times of the year. However, certain trees such as Chinese poplars require more regular watering than most, and also are quick to show premature leaf-fall if allowed to get dry.

While this tub scheme was getting under way, the landscaping of municipal buildings received greater attention with the use of permanent plants of foliage value. The rather difficult sites which most of these are have limited the range of plants, but even so, common plants such as *Agapanthus* and coloured forms of flaxes can improve most scenes. *Philodendron selloum* has displayed an unexpected hardiness in producing foliage up to 6 feet in height and flowering freely on several sites. A useful plant for foliage colour has been *Coprosma repens* 'Variegata'.

Associated with this work has been the wider use of permanent ground covers, particularly on City traffic islands, where they reduce maintenance and act as physical barriers discouraging unauthorized crossings. *Coprosma kirkii* and *Hedera canariensis* 'Variegata' have been the most useful for this purpose up to date. Trials have been carried out with smaller-leaved ivies such as 'Green Spear' but the results have been disappointing, chiefly due to a bacterial leaf spot which does not appear easy to control.

Bedding schemes, where retained, have been maintained to a high standard, and at most times are planted with container grown plants almost in bloom. Many subjects used have been commonplace,

but some which are not only unusual but also very effective include *Kniphofia* 'Winter Cheer', *Eupatorium coelestinum*, *Celosia* 'Forest Fire', *Echeveria multicaulis*, and *Lachenalia pearsonii*.

The most recent innovation has been the use of hanging baskets in the vicinity of the Overseas Shipping Terminal. Well-designed brackets support two 2 feet fern baskets on each lamp-post, and with a succession of plants such as ivy-leaved geraniums, petunias, *Hedera canariensis* 'Variegata', *Asparagus sprengeri*, *Dimorphotheca ecklonis* and *Lantana sellowiana*, have furnished this busy area. The baskets have been lined with black polythene and inside this is a galvanised metal plant container in which the plants are grown in the nursery. This method has reduced the watering frequency to about four times weekly, even in the warmest months.

All these projects have helped to transform a City of concrete to something more pleasant and, at the same time, made citizens and planners more conscious of making provision for trees and plants in their everyday environment.

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### NOTES FROM DUNEDIN

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

After a winter that has been rather more wet and bleak than is usual in Dunedin, the thought of spring being almost with us is very pleasant. At the time of writing (early August) there are already many signs of the joys to come. Witch hazel and winter sweet have been in bloom since the first days of July. The early varieties of *Prunus* — *P. cerasifera* 'Nigra' and *P. armeniaca* 'Dawn' are rushing into flower, while *Crocus*, *Cyclamen*, scillas, *Chionodoxa* and other small bulbous plants are appearing in all directions. For *Rhododendron* enthusiasts the portents are good. 'Cornubia' and 'Christmas Cheer' are already with us, while swelling flowerbuds are evident on other early ones. Except for a few large leaved species that tend to rest every other year, flower buds in general give promise of a good flowering season. A large specimen of *R. grande*, for instance, a mass of bloom last year, is very sparse this season. On the other hand, a group of *R. falconeri* that has missed two or three years, has great fat buds on every shoot.

Most large growing rhododendrons do well in Dunedin's climate and soils without any special attention, providing conditions are reasonable. Shelter from strong winds, freedom from root competition with trees and large shrubs, and a moist, fertile soil, are the general requirements. Slight overhead shade for part of the day is desirable for the large-leaved and large-flowered species and varieties to obtain the best results. Mulching and feeding will, of course, pay rich dividends in health, vigour and freedom of flowering, as in less favoured localities, but, all the same, many fine old specimens are to be seen around the city that do not receive this extra attention.

Many of the smaller growing rhododendrons succeed well in these conditions too, especially hybrids. The really dwarf small-leaved species are much more particular in their needs. In fact, good specimens of these are not often seen anywhere in New Zealand. This is a very great pity, for some of the real gems of the genus are to be found among them. That it is possible to grow them well is evident by the occasional good specimens we do see in gardens. Extra care and understanding of their needs is necessary, to provide the right conditions for good growth.

In large, well-established gardens, where rhododendrons are well represented and do well, the usual desire is to plant more and more of them. Here, as well as in the smaller gardens, we need to find our plants among the lower growing ones, to add to the plantings we already have, for half a dozen of these may be planted in the space that one of the large growing ones may need. Even in the largest gardens, of maybe several acres, it is already necessary to choose very carefully from the many hundreds of attractive species and hybrids that are available. Each year their numbers are being added to, so that a thoughtful selection must be made when consulting nurserymen's lists, in order that those with suitable colours, habit, type and size are chosen. The more individuals we can accommodate, the greater is the interest, as the range of colour, the season of flowering, and the type of foliage and habit are all increased in proportion. It is still essential to plan well, so that future over-crowding is to be avoided. This is where so many of us come to grief, for a garden planted for its plants to be at suitable distances in 20 or 30 years time, is going to look rather thin for the first few years. It is much better to do this, however, then fill the gaps with temporary fillers, trusting that when the time comes we will find the energy and the courage to remove them. If we plant for immediate effect, with the idea of thinning as necessary, we find that those to remain are mostly in the wrong places. With rhododendrons, a single isolated specimen, developing naturally, with foliage and flowers to ground level, is far more effective than a mixed group all growing into one another. A group of the one kind, particularly of the small leaved ones with slender arching branches, planted so that eventually they form a single unit, can make a good feature, but rarely is this so with a number of different varieties. Dwarf rhododendrons do, however, lend themselves to mass planting of the one type, as do azaleas, both deciduous and evergreen.

Most dwarf rhododendrons are found growing naturally in alpine meadows, or on rocky faces on mountains, above the forest line. Here they are exposed to the elements, standing wind, sun, and snow in winter. It is important to note, however, that at these high elevations they are often shrouded in mist. The secret of growing them well in our lowland gardens must surely be to provide as similar conditions as possible with such a difference in altitude. The chief features of their natural habitats are probably these: an open situation with tempered sunshine, constant moisture at all seasons, perfect drainage, with ample humus and natural mulching. In most gardens these conditions must be

created by preparation of the site. It is a fact that many of these dwarfs make good pot plants with the right attention. Here, all their requirements can be provided — perfect drainage, a free-rooting medium rich in humus, controlled moisture at the roots and in the atmosphere. In a cool greenhouse here in Dunedin at the moment, *R. moupinense*, *R. leucaspis* and their cross 'Bric-a-brac' are all flowering beautifully in large shallow pots. These pot plants spend most of the year plunged to the rims in coke breeze or well-rotted sawdust in an open frame. When the flower buds start to swell in early July they are brought inside, so that perfect blooms may be had, undamaged by heavy frost. As soon as the flowers fade they are returned to their outside quarters.

It should not be too difficult to duplicate most of these conditions in the open ground, in those parts of the country where rhododendrons do well. Rock gardens and partly sunny slopes can be good sites. Soils in Dunedin are naturally on the heavy side. They can be wet and cloggy in winter, then dry out and crack in summer — conditions that ericaeous plants detest. Probably the best method to adopt in cases such as these, is to excavate the planting site completely, to a depth of 12 to 15 inches, and refill with a prepared mixture of fibrous loam, sand, fine gravel, peat, leafmould and well rotted sawdust. Fine coke breeze is also a good material to use. These materials should form a free, friable compost that will never become waterlogged, but will retain moisture in dry weather. Artificial watering may be required in periods of drought. Constant attention to mulching must be given so that the fine surface roots do not become baked in the sun in the height of summer. When it is not possible to go to all this trouble in preparing for planting, it may be sufficient to add these opening up and moisture retaining materials in liberal quantities.

Many of the dwarf species will struggle on for a few years, if planted in reasonable sites without much soil preparation, but usually they become weak, suffer from die-back and finally peter out. We are apt to form the impression that they are short-lived but I am inclined to doubt that as being the reason. In public gardens it's a sad fact that, no matter how much care is taken in locating good position and providing ideal conditions, many of them are often still short lived. Unless a place can be found that is under almost constant supervision it is almost hopeless planting them. In common with choice rock garden plants and small cacti, certain members of the public find them irresistible.

Like the larger growing rhododendrons, the dwarf species germinate well from seed, providing it is sown within a few months of being gathered. They often flower after a few years' growth. The seed is so fine, however, and the young plants so minute, that careful nursery attention is necessary for the first year of growth. They layer easily and root well from half-ripe cuttings in late summer. This means that good forms and hybrids may be readily increased. Unfortunately, from a gardener's point of view, although the flowers are choice and dainty, the colours of many species are often shades of deep rose, magenta,

purple and crimson. This is the case with such species as *radicans*, *nitens*, *calostrotum*, *saluenense*, *keleticum*, *tsangpoense*, and *campylogynum* var. *myrtilloides*. However, there are many with beautifully coloured flowers. Prominent among these are *forrestii* (bright scarlet), *chryseum*, *valentinianum*, *hanceanum* var. *nanum* (soft yellow shades), *leucaspis*, *trichostomum* var. *ledoides*, *moupinense* (white and pale pink), *impeditum*, *intricatum*, *fastigiatum* (light blue and lavender).

There are some very fine, small growing hybrids now available, the results of either crosses between a number of these dwarf species, or between a dwarf and a larger species of hybrid. 'Little Joe', 'Little Bert', 'Little Ben', 'Elizabeth', 'Ethel', 'May Day' and 'Dainty' are good scarlet ones. Various shades of pink are found among 'Humming Bird', 'Treasure', 'Bric-a-brac', 'Cilpinense', 'Winsome' and 'Bow Bells'. Good light blues and lavender varieties are 'Bluebird', 'Blue Tit', 'Blue Diamond' and 'Praecox'. 'Parisienne', 'Quaver', 'Eldorado', 'Chrysomanicum' and 'Yellow Hammer' are all fine yellow ones. Most of these, fortunately, are much easier to grow well than the really dwarf species.

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## A HORTICULTURAL JOURNEY TO WESTERN AUSTRALIA

### VIII

W. R. STEVENS (*Wanganui*)

Our return trip to Albany was a leisurely one, and we did not stop very often. In retrospect, we felt that the trip to the Gairdner River had provided us with enough thrills to last us many a year, and it was hard to avoid the feeling that anything to come now would be in the way of an anti-climax.

The next day was spent in preparing for our departure from the Albany area. From here on, we should be without the invaluable personal assistance and guidance of Alf and Freda Gray, but we had long discussions on the routes to take, where to look for special plants on the way, and how to find the farm of another wild flower enthusiast in the inland wheat belt area. It was our intention to return first to Perth, travelling back by a route different from that by which we had come. The weather was perfect when we left, and as we did not intend to travel to Perth in one day, we did not hurry too much. For the first few miles after leaving Albany, there was quite a lot of roadside flora, but by now most of it was familiar to us, so we did not stop. For the better part of the day we travelled through settled farm areas, and it was not until early afternoon that we came on several interesting patches. One of these was a low sandy area, and bright patches of colour induced us to stop. Here we found many plants of *Leschenaultia formosa* — a prostrate species with vivid scarlet flowers. This plant has a suckering habit, and many of the specimens were over a yard wide. It is a fairly common plant in Western Australia,





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*Branches throughout New Zealand.*

and later we saw much more of it. It is very variable from district to district, sometimes being scarlet, but often being red and yellow, occasionally orange and red. Later we were to see a lovely rose coloured self, which had been collected for King's Park. Usually the various colour forms are confined to distinct districts, often widely separated, suggesting slow evolutionary changes to adapt to the varying conditions. In cultivation in New Zealand, *Leschenaultia formosa* is erratic in behaviour, and although it has flowered well, it requires extremely light and well drained soil that does not dry out. Later in the day as we were driving parallel with the railway, a patch of colour near the rails caught our eyes. We stopped to investigate, and climbed over the fence. Vegetation was sparse, and low, by no means covering the hard, dry, very gritty, yellow soil. What had caught our attention proved to be *Anigozanthos bicolor*. There were literally hundreds of plants scattered over the uneven ground, and spreading right up to the rails of the railway line. Many of the plants were in flower, with stems up to a foot in height. Rusty red 'fur' covers the stem, but from the ovary merges into a greenish yellow. A feature of *A. bicolor*, which distinguishes it from other species, is in the narrow perianth which over-arches the stamens. This perianth is slightly pinched into a waist about half way along its length. Although the area in which we found this species was somewhat low-lying, it looked poor and arid at this date in mid-September. I have little doubt though that it was subject to wet conditions following rains. Although it had flowered well with me, I should not describe it as happy. Probably it objects to our humid air.

Towards evening we found an ideal camping place under a grove of *Eucalyptus salmonophloia*. A distinctive feature of these salmon gums is the gloriously clean, salmon tinted white bark of the trunk and lower branches of a tree which towers up to 40ft, and gives a wide canopy of shade. There was plenty of room beneath these magnificent trees for camping for the night, a site sufficiently well off the road to ensure privacy from the very occasional traffic.

Next morning we made an early start as we wanted to reach Perth some time in the afternoon. Later in the morning we started on a gentle winding ascent over the Darling Ranges. These ranges are really an escarpment of 1500ft, and in New Zealand we would hardly refer to them as ranges. For the most part they are well clothed with a distinct and striking flora. Some parts were heavily wooded with tall eucalypts and the underscrub was a mass of colour. Small-growing dwarf acacias were blooming profusely, and odd colonies of pimeleas made a beautiful contrast. At one stop we made, we were very pleased to see some specimens of *Dryandra praemorsa* which does well in Wanganui. Here it grew to over 15 feet, and was rather open in growth. As I grow it, with heavy pruning, it makes a much more compact shrub up to 10 feet. To my mind it is a plant of high merit, and worthy of being grown much more commonly in New Zealand. The flowers are numerous, and as the bud develops, it looks, for all the world like a blunt shaving brush of a pale green colour. The flowers are set in a rosette of leaves, and as the flower



*Dryandra praemorsa* (see page 179).

develops the colour lightens to a light yellow, spherical brush about 3 to 4 inches across. As the flower heads are not only terminal but are also produced laterally close down the stems, a plant in full flower towards the end of winter, is very distinctive and showy. The leaves are rigid, tough and undulating, with large, somewhat prickly, pointed serrations. This plant is illustrated in this issue.

We arrived at Perth late that afternoon, collected our mail, then indulged in the luxury of hot baths. The inability to have a hot bath was, we had found, one of the few drawbacks to camping out and living in a caravan.

The following morning, after again stocking up with provisions, we set out due east, back across the Darling Ranges on the way to Kellerberrin. On the eastern side of the Ranges, we found *Leschenaultia biloba* extremely common, usually in light to pallid blues, and only very occasionally we saw the lovely deep blue form commonly grown in New Zealand. This *Leschenaultia* is usually found in open scrub which is the undergrowth beneath the eucalypts and acacias that somewhat sparsely clothe the Darlings. Another delightful subject we came across in the same conditions, was a very showy, bright pink *Tetralthea* species, a species we were unfortunately not able to get identified. It rather resembles a larger, showier, more rampant counterpart of the Eastern species, *Tetralthea ciliata*. This, and some of the compact dwarf acacias, forms the most showy group of plants in this part of the Darlings.

Leaving the Darlings and travelling still due east, we passed through undulating farmlands, mostly apple and fruit orchards. Here there was little roadside flora. As we travelled inland, the country became more arid, until we ran into the wheat belt country approaching Kellerberrin. Here we were to contact Mrs. McNiell, the wildflower enthusiast to whom we had been recommended by Alf Gray. The address was Mt. Caroline, some 5 miles out of the town. Despite careful instructions, we did not find the farm easily as we could not see anything remotely resembling a mountain in that flat wheat country. However, eventually we came to some letter boxes, at a crossroads, and from the name 'McNiell' on one of these boxes, realised that the small granite hump ahead of us was Mt. Caroline. We were most hospitably and enthusiastically welcomed by Mr. and Mrs. McNiell and their family.

After a fascinating tour of the irrigated garden in which were growing many species of native plants, we sat down to an immense three-course roast dinner. Following dinner we spent the evening viewing flower slides. Next morning we left the caravan in the yard, and with Mrs. McNiell to guide us, we drove to the Tammin Reserve. This was an area of several acres which had been gazetted as a native reserve. The soil here was more like sand than soil, and many of the plants growing in it were endemic to that area.

One of the most interesting plants in the Reserve was the wooden pear, *Xylomelum angustifolium*. A small group of them drew us all like a magnet as we had heard of it and read of it, but had never seen

it growing. These specimens varied from about 6 feet up to 15 feet, and about half of them bore fruit. The leaves are smooth and narrow, and the fruits are silver grey, from 2 to 3 inches long, and  $1\frac{1}{2}$  inches in diameter. Within these extremely hard, woody fruits, which eventually split lengthwise, are two seeds, each furnished with a long, feather light, brown wing to assist dispersal. They are not unlike waratah seed, and *Xylomelum* does in fact belong to the same order — *Proteaceae*. In nature the fruits split only after high temperatures in dry conditions. In this Reserve, they certainly got high temperatures, with many summer days when the thermometer went over 100 degrees, but even so, we did not find a solitary seedling. Harry wanted some close-up photographs of the fruits, so we held some of the branches down and managed to get quite a few of them together.

Here I must mention one of the major annoyances of the sand plains — flies! They were everywhere, and were most irritating. As fast as they were brushed away, they returned, and by the end of the day our faces became very sensitive to them. Occasionally they were so bad that we retreated into the caravan for relief. On this particular occasion they were such a nuisance that Harry could not take a photograph — they kept blocking his lens. So one of us had to wave a handkerchief vigorously over him, while he focused his camera! In all our travels in Western Australia, we came across only one man who wore a net as protection against the flies, and he was an Englishman. We all vowed that if we ever made another trip to the sand plains, we would have nets to wear. When we mentioned this scourge to any Australians, they would agree that the flies were bad, but would not think of wearing a net.

Another interesting shrub in the Reserve was *Hakea platysperma*, interesting not because it had any floral beauty, but for its enormous seed cones, which are by far the largest in the genus. The leaves are quite leathery, and shaped somewhat like a fan, while the white flowers are rather insignificant. Altogether the sort of plant of which one specimen in the garden would be plenty.

On the drive back to the farm, we stopped in a sandy depression to inspect a large tree of *Banksia prionotes*. It was a magnificent specimen, probably all of 25 feet high, and almost as much across in its spread. Although this species is growing in New Zealand, and in some soils does very well, I doubt if we could ever equal the size of this specimen. In my heavy clay soil it behaves very differently. The growth is fastigiate, with very little branching, so what happens is that any flowers there are occur almost too high to be seen. It is obvious that it prefers a deep soil that is either sandy or gravelly.

On our return to the farm, Mrs. McNiell suggested that we had a look at a large granite outcrop at the back of the machine shed. This proved interesting, and one shrub was quite familiar. This was *Melaleuca machronycha*, which we grew in Wanganui. Here, on a starvation diet in hungry soil conditions, it flowered much more freely than it did in



New Zealand. The flowers are like short, fat bottlebrushes, and the colour is a deep red.

The next morning, Mrs. McNiell had an engagement which she was unable to break, so we drove back into Kellerberrin where we picked up as guide Mrs. Jackson, a knowledgeable wildflower enthusiast, who was to direct us how to find *Hypocalymma puniceum* and *Balaustion pulcherrimum*. Following a road north out of town, we soon came to scrub country, and in a restricted area along the roadside found the small 2ft bushes of *Hypocalymma puniceum*, with small rose pink, myrtaceous flowers and small leaves. A very pretty little subject, but nothing like so showy as the better known Swan River Myrtle, *H. robustum*. Further along Mrs. Jackson warned us to stop 'just going up that rise and opposite that *Hakea multilineata*'. Pull up we did, and scattered to search for *Balaustion pulcherrimum*, the pomegranate flower. After some careful searching we found several specimens of this charming ground creeping plant, with its almost thyme like foliage, and vivid orange flowers superficially resembling miniature flowers of *Punica ganatum* var. *nana*. Seed of this has proved impossible to germinate, and I have been equally unsuccessful with cuttings.

Turning aside off the road into a disused gravel pit, we found quantities of *Hakea multilineata* in all stages from seedlings to small flowering trees. This lovely species has long, narrow brushes of a bright rose colour. Seeing it so happy, growing well, and regenerating freely in this gravel pit, confirmed my own experience that this delightful *Hakea* needs a deep gravelly root run. I can never expect to make a worthy garden subject of it in my own clay soil.

Just before returning to Kellerberrin, a glorious mass of rose pink along one side of the road brought us to an unscheduled stop. This proved to be a *Thomasia* species, but which species we were unable to find out. There was so much flower that the foliage was smothered under the colour. I grow only two species of these representatives of the *Sterculiaceae*, *Thomasia macrocarpa* and *Thomasia grandiflora*, and both, in this country, produce too much foliage for the flowers. One can never hope to reproduce the hard growth conditions and hot dry atmosphere of Western Australia, which conditions are governing factors in producing this wealth of blossom and little foliage of so much of the flora.

The following morning we took our leave of the McNiells and started off on our northern trip. We had no specific plans, but had a general idea of where we wanted to go. In the wheat belt, the roadside flora is now almost non-existent, as farmers consider it a fire danger. The summer temperatures in this area were very high, so much so that farmers were warned over the radio when it was considered dangerous to operate a tractor in the wheat fields. For long stretches we drove without stopping, and over the hours, the only native plants we saw — and these were very occasional — were young specimens of *Trichinium obovatum*, a lovely pink and grey everlasting belonging to the *Amaranthaceae*. It is a low growing herb with obovate flower heads about 3 inches in length.

We continued in a northerly direction until it was time to look for a stopping place. By now when we camped we had settled into a routine, and each of us did certain jobs. This meant that all the preparations for camping were completed in a short time, and we were then able to do a little browsing before it was too dark. On this particular evening, the local flora was sparse and not very exciting, so we just sat and relaxed until it was time to turn in. We were on the road early next morning as we wanted to travel a fair distance before it got too warm for comfortable travelling. By now we had run out of the wheat belt, and the countryside was harsh and poor, with occasional salt pans, dry, and even in September, reflecting uncomfortable waves of heat. These salt pans will be found (coloured blue!) on maps and designated with the names of lakes. They had been lakes in the distant past ages, but now are mere depressions covered with white salt, and sometimes gypsum, with perhaps a few marshy wet areas supporting a small number of salt loving plants around their edges. Easily the showiest of these salt loving plants was a magenta coloured *Calandrinia* species which gave sheets of colour to some of the salt lake verges we saw north of Perth. Here, around the more inland salt pans, this plant was not present, and there was nothing colourful to relieve the glaring heat.

Travelling in the heat of the day, and with the last sign of human habitation an hour's drive back, we made an unpleasant discovery — our 15-gallon tank of drinking water in the caravan was leaking. This was serious, as we did not know where on our road further on we could obtain water. Noel came to light with chewing gum! He had heard of the idea from a story a storekeeper had told him, and had laid in a small stock against just such an eventuality. Rather worried, the rest of us thought it worth a trial. I don't know what anyone would have thought had they been there as an observer, but there must have been some curious speculation. The procedure went like this. Noel got underneath the caravan and lay flat on his back just under the water tank on which he had marked the leak. The rest of us squatted near him, and started chewing gum. Each time Noel said 'ready', and held out his hand, one of us would withdraw a blob of gum, and place it in his hand. He immediately plastered it over the leak. In retrospect the whole episode is quite humorous, but at the time there was no evidence of amusement. Noel got back in the driver's seat and remarked that we would stop presently to see if it had stopped the leak. So, about 20 miles further on, Noel investigated and found the gum was still holding. As a matter of fact, it held the leak until we got back to Perth some days later.

We were now coming across more of the real sand plain flora, and more and more stops were made. At one stop we were particularly taken with a colony of *Dampiera wellsi*. In growth, this plant resembles some of our native celmisias, as the flowering scape arises from the centre of broad basal leaves. The scapes were up to a foot in height, with intense blue flowering heads.

In referring to the blue flowers of Western Australia, it is almost instinctive to think of *Leschenaultia biloba*. Primarily this is because it grows over such a wide area and, moreover, has been extremely well publicised over many years. But with us, we were as much impressed with the blues of the dampieras. There are over 50 species and, with the exception of *D. luteiflora*, are all of some shade of blue or lavender. This genus was named after William Dampier, who first visited the north-west coast of Australia in 1688. He collected the first species (*D. incana*) and mentioned in his notes the prevalence of blue flowers in New Holland. Several species of *Dampiera* have been grown in New Zealand and, given the necessary light soil and sharp drainage, are quite satisfactory.

Some distance further on, in deep yellow sand, we found large patches of *Loudonia aurea*. This is a soft wooded plant growing up to 3 feet, with golden yellow flowers in loose terminal heads, and is sometimes referred to as 'Mustard Flower'. Later on in our trip we collected seed of it, but probably it was immature as we did not succeed in raising any seedlings from it on our return.

After leaving this sand plain country, we proposed to go still further north as far as Mollerin Rock to find *Kunzea sericea* which grew there. Although the roads were well maintained and in excellent condition, we appeared to be almost the only traffic along it. Mile upon mile of straight road disappearing ever in the same direction northward. It was quite a surprise to come upon Mt. Yorkrakine itself — a giant slab of granite perhaps 500 feet high, with nothing whatever growing upon it.

Late in the afternoon, we left and made for Koorda and Mollerin Rock. This latter proved to be another granite slab, and we were amazed to find it had been fenced off as a Nature Reserve. About the only plant growing upon it was *Kunzea sericea*, which apparently germinated in any cracks in the granite, sent down its roots into the interstices and became a shrub of about 6 to 8ft. Only the first scarlet brushes of blossom were in flower, though it was loaded with flower buds, and would shortly be a glorious sight with its fine glaucous foliage.

We returned to Koorda, and camped for the night, preparatory to travelling back south by another route, then due west to the coast.

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## NOTES FROM PUKEKURA PARK

A. D. JELLYMAN, N.D.H.(N.Z.) (*Assistant Curator*)

It is with eager anticipation that we members of the Pukekura Park staff look forward to the receipt of a collection of named cymbidiums from the well-known plantsman Mr. Fred Parker. Mr. Parker is giving a large part of his collection of modern hybrids in memory of his late wife who, unfortunately, never saw their dream for the collection come true. To Pukekura Park and the public, Mr. Parker is no stranger as he has been an active member of the Park Committee for more than thirty years and was responsible for much of the fame of 'Parker's Gardens' of a few years ago. We are to take delivery of Mr. Parker's gift at the end of the flowering season and so will be able to display them to the public next spring.

The housing of this collection has meant that a few alterations were needed to our glasshouses and that a shade house for the off season would be required. There has, therefore, been a lot of activity in the glasshouse area since Easter to cope with the changes taking place. The main house for displaying will be the No. 2 house which, up till this year, was used to house our collection of ferns. Although the outer banks of the house have been left clothed in ferns the entire centre islands had to be cleared. This involved shifting several specimens including a fine *Dicksonia fibrosa*, and many established clumps of valuable ferns. To absorb the material from this house a complete renovation of the other fern house was undertaken and the outdoor fernery area was enlarged. By synchronizing these activities we were able to accommodate all ferns in one movement and preclude unnecessary handling.

The conversion of the fernhouse to a display house was in itself a reasonably elementary task. To display plants, two conventional multi-tiered stands were built each with a bed finished off in chipped brick, to grow supplementary display materials. Mr. Parker has been the leading light in this operation for not only has the planning of the stands been in his capable hands but also much of the construction. In any glasshouse, ventilation is of vital importance and this is especially so when it comes to displaying cymbidiums, thus the ridge ventilation was renewed to give a more effective system.

Paramount importance has been attached to the area in which the orchids are to be grown during the non-flowering season. It will be readily appreciated that the plants will be housed in the display house for only a few months of the year, and that during the remaining months the house must be used for other display purposes. The results of experience that Mr. Parker has accumulated over the years has culminated in the creation of a shade-orchid house. Cymbidiums respond to open airy conditions and plenty of sun during the summer and autumn months as this encourages and develops new growth and flower spike production. To this end the orchid house has been laid open to trap the sun as effectively as possible. In shape it is that of a

letter 'L' with its arms extending N.W. and N.E. and the structure can be divided into two sections. The N.W. arm is enclosed and roofed with novalite, whilst the N.E. arm is open on the north side, it has novalite on the south side and has grooved laths giving 50% shade upon the roof. The entire structure is bounded for the first 3 feet above the foundations by fibrolite sheets. To enable the fullest possible air circulation the floor is slightly elevated and consists of 3in x 1in timber placed with 1in gaps between boards.

It is proposed to stand all the established clumps of cymbidiums on the floor of the open section throughout the summer months and the young plants under the enclosed portion. In the winter any plants not in flower will be transferred to the covered area to prevent the plants from becoming too wet.

For Pukekura Park this is the embarkation of a horticultural adventure and it is hoped that the range of orchids will extend as conditions permit. A collection of orchid species will be built up and a number of these will be tried in completely outdoor conditions. Already outdoors there are several clumps of cymbidiums in healthy vigorous growth. These flower yearly and seem to have a sturdier constitution than the same clones pot grown. The stumps of dead mamaku ferns (*Cyathea medullaris*) make ideal sites for many hardy orchids but it would seem imperative to bore holes in the stump bases to let excessive water away. Besides cymbidiums the *Epidendrum*, *Epicattleya* and *Epiphronitis* groups are quite amenable to hot sunny outdoor sites.

We are indebted to Mr. Parker, not only for his generosity, but for the enthusiasm and knowledge of this most diverse plant family that he transmits to the individual.

Another project which has constituted Pukekura Park's major planting this season was the replanting of the hill behind the Kiosk where 40 pines, eighty years old, were cut down last year. In this climate pines mature in about seventy years and from then on present a problem because of their brittle nature. Additionally the problem arises where the trees on the outside of the plantation become very lopsided in growth thus providing further danger. This problem could hardly have been foreseen by our pioneer ancestors but, since we have reaped the harvest, we are endeavouring not to saddle future generations with the same problem. To do this we are planting as the major trees for future skyline effect native coniferous species because they have a much longer life expectancy and would take several hundred years to mature. In addition to this the native species as yet do not seem prone to any serious diseases which could cause unhealthy growth. Thus rimu, kauri, miro and totara predominate in the planting schemes.

Most of these trees will respond with rapid growth if they are given good initial preparation. By this I mean preparation of the site in which the plant is to be placed. All major sites were blasted at a depth of 2½ feet with a half plug of gelignite. This not only makes the



digging of the site an easier operation but shatters the subsoil and thus enables easier root penetration. The existing soil in each case is removed to a depth of 3 feet, the diameter of the hole being 3 feet also. This is replaced with imported black loam with which hoof and horn meal is added at the time of filling. It is wise to consolidate the filling by tramping as the sites are refilled. Young plants that are given treatment such as this, establish themselves quickly and make good growth. For example a kauri planted in September, 1964, was 2 feet in height. At the end of its first season in the prepared site it was nearly 3½ feet in height as the result of two growth flushes. This indicates the worthiness of thorough preparation as this principle applies to all plants, not just the examples quoted.

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### MORE GARDEN MEMORIES

MAUDE HAINES, F.R.I.H. (N.Z.)

I have been asked to write a further article on some of my garden experiences. As explained in my previous contribution to the March 1964 issue, horticulture was woven right through the tapestry of my life, every here-and-there some garden event specially highlighted.

Naturally one refrains from recounting anything that would appear to be self-aggrandizement, so please understand I write with humility.

A primrose by a river's brim,  
A yellow primrose was to him,  
And it was nothing more

certainly did not apply to me, for, as a child, I literally worshipped the flowers I grew up with. These were the simple flowers — pansies, forget-me-nots, mignonette, moss and cabbage roses, gold-laced polyanthus, primroses, cowslips, jonquils, auriculas, aquilegias (the quaint little tight Grannies' Bonnets). And what a perfume everything had to our young nostrils! Afterwards, as I grew up, I became acquainted with undreamed-of floral glories in the great wide world.

For fun, I used to create my own 'flower phantasies'. Sometimes I made a sort of Grinling Gibbons garland of multi-flowers, tied firmly and closely together, on a long thin wand, with finely stranded native flax — an excellent substitute for raffia. It so happened a lady visitor called on my mother that afternoon. She lived in the city, with no garden at all, and when she saw this garland, she was so entranced with it, she begged to be allowed to take it home with her. Being young and shy I could not understand *why* she thought it so wonderful.

Then, often, my sister and I would make Victorian posies, with primroses and other choice flowers, and lay them on a long country lane adjacent to our garden. We felt so flattered, when we peeped through the hedge, and saw someone pick them up!

Many years after, when staying at the Fairmont Hotel in San Francisco, an apparently very rich elderly American woman gave a lavish luncheon party for a group of fashionable young maidens. There, if you please, the table was decorated with long ropes of garlanded flowers, exactly as I had made in my youth. They looked fascinating, wound in and out amongst the glittering array of polished crystal and silver.

Another remembrance of childhood: one day, when about eight or nine years old, a boy friend from across the way, came to our gate and called me. 'Look at this', and he held out a flower. It was just a common dog daisy, but with two perfect flowers on top of its broad stem (fasciation). I gazed at it in awe and wonder. It was unbelievable — a miracle! 'Oh Harold', I breathed. 'How wonderful — Let me see it', stretching out a small hand. But, no, he held it firmly. A sudden, wicked impulse came over me. I snatched it from him, and fled down the lane, Harold in hot pursuit (Peter Snell could have done no better). On and on I raced, until we reached a large reserve planted with many shrubs and trees. He chased me round and round, but I always managed to dart, like a dragon fly, to yet another clump of trees. At last, he gave in — exhausted, done, defeated! I do not remember what happened to the daisy; but I do know he bore me no ill will, and we were playing happily together the next day. I often wonder if that curious flower laid the first germ in my mind for the uncommon, the rare, the exotic, which ultimately led me to start my

### Novel Stands

at the Wellington Horticultural Society in 1932. These became a feature of each show, and were afterwards copied at most flower shows throughout New Zealand. The Stands grew and grew, until my highlight, by the unanimous verdict of 12 judges, was to gain the Cooper Memorial Trophy for the most meritorious exhibit in any branch of horticulture at the Wellington National Centennial Exhibition of 1940. This was all the more exciting, as I had been pressed to set up a Novel Stand, and I did not know there was to be any prize or competition. However, it was a thrill, and I have a certificate (with a great Red Seal!) and the handsome Cooper Trophy as a remembrance.

### *Fuchsia magellanica* 'Alba'

When in England in 1936, we visited the R.H.S. Trial Grounds at Wisley. Amongst all the wonders there, I was rooted to the spot in a glasshouse by a hanging basket of this dainty *Fuchsia* species. It had been pinched several times — the result being a veritable waterfall of delicate lavender and pink with its long dripping stamens. Later on, the then Director, Mr. R. L. Harrow, very kindly grew on for me a small plant to take back to New Zealand. How I managed to transport this frail darling of my heart (including the Tropics) is quite my own little romance. Every plant now in New Zealand came from propagations from that little pot. Of course, it simply thrived in New Zealand. Indeed, it grew so vigorously, even seeding about, as to become almost an embarrassment in some gardens.



*Fuchsia magellanica* 'Alba' (see page 189). — (Photograph: Daisy Tinley)

Now, however, we have that beautiful cross from it raised by Mr. W. P. Wood, a President of the Fuchsia Society of England. He named it 'Mrs. W. P. Wood' in memory of his wife, and it is very exquisite, retaining, as it does, all the charm of the species, but with no embarrassments!

### Thrips

Many years ago, realizing the menace of thrips (in my instance, coming from a neighbour's long *Laurestinus* hedge), I had a comprehensive survey made throughout New Zealand, and found the same trouble everywhere — all coming from the common *Laurestinus*, the perfect host for thrips. After much investigation and research, I approached the R.N.Z.I.H. (Inc.) and they, concurring with me, had *Laurestinus* removed from sale in New Zealand. I made a number of friends (and alas! a few dissentients) for my earnest endeavours. I do not regret my action.

Another host plant for thrips is *Clethra arborea*, and also some of the rhododendrons and fuchsias, but these can usually be controlled by spraying with malathion on the undersides of the foliage.

### *Oxalis* (accent on first syllable please)

I call this my Enemy No. 1. I am surrounded by it from neighbouring gardens, all making for my property on every side. I had a lengthy illness, and an odd gardener scattered it everywhere. I am now spending the last years of my life fighting it. But I am afraid it is a losing game. There are a number of different *Oxalis* species — I seem to have them all — but the tiny-leaved one that puts on thousands of off-sets, is the most terrible. I have tried everything to combat it — constant weeding, bonfires (powdered borax and spraying where safe); but up it comes again stronger than ever. Oh *Oxalis*, *Oxalis*, my Enemy! (By the way, I have noticed it seems to by-pass the mown lawns).

### Complaints here!

Now, this is a delicate complaint, and I would sooner not mention it. But we have a number of surrounding neglected gardens and we are being invaded by terrifying stranglers — white *Convolvulus*, honeysuckle (woodbine), ivy; also gorse, onion plant and *Oxalis*.

One day, when particularly distressed and mentally wringing my hands, a friend said to me — 'Have you tried to get their co-operation.' Yes, yes, I have approached each one in turn, with what I hoped was the wisdom of Solomon, and the tact and charm of a trained diplomat. They listened politely, but, oh dear, not even one responded. I am now left to fight these alarming invaders within my own perimeter — an almost impossible task.

### Potting on

Now, I have the greatest admiration for the work of our nurserymen, often faced with almost insurmountable difficulties and lack of staff. But, dear Mr. Nurseryman, please do endeavour to keep potting-on expensive

plants, such as camellias, for they never recover if allowed to become so root-bound as to spiral into a tight corkscrew. It is most disappointing for the eager and enthusiastic purchaser to have this experience.

But this is enough for Complaints. Let us end on the happier side of our gardens.

These are a few plants I would never like to be without: English snowdrops, fritillarias, rock *Cyclamen*, fuchsias, green ixias (*viridiflora*); also *Erica canaliculata*. This latter flowers at a bare time (April, May and June) and is the greatest joy both growing and for indoor decoration. Always buy as small plants and do not allow to dry out in summer. I usually buy one or two new plants each season, in case one of the older specimens gets too woody.

*Vitis coignetiae* (Japan): We are fortunate in having a long pergola 88ft x 9ft 6in high. There are three established vines there, and they are a sight to behold in the autumn, when the handsome leaves turn from gold to crimson. They are pruned exactly as a grape vine — not later than early July, as the vines may bleed when the sap rises in spring.

**Old Roses:** We have many of these, but I would single out: 'Charles de Mills', 'Jacques Cartier' and 'Chapeau de Napoleon'. Spray with a weak solution of Bordeaux mixture in the earliest stage of bud formation, as this prevents any risk of fungous trouble.

**And Camellias,** ah camellias! Their season is now with us, and how they help one through the winter! There is a great revival of these sweeping the world at present, and no wonder, with all the magnificent new varieties being raised. Every garden, however small, should put in two or three plants for a continuing joy throughout one's life — not forgetting 'Donation'. They all do best without too much sun on the roots and like a good annual top-dressing. Always pick before the flowers are fully expanded, and do handle them carefully. Also, for the uninitiated, be patient and let the young plants grow to a fair size before the temptation of gathering the blooms.

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### AUSTRALIAN STUDENT GAINS INSTITUTE'S HIGHEST EXAMINATION AWARDS

'If you are interested in the science of caring for gardens and plants, and you want to reach the top, there's only one thing you can do — catch the first available plane across the Tasman and enrol in the Royal New Zealand Institute of Horticulture'. Such is the introduction to an article in the *Adelaide Advertiser* on 23rd June reporting the success of a young Australian horticulturist, Mr. Graham Jones, of Torrensville, in gaining his New Zealand National Diploma in Horticulture at the Institute's examinations. Four and a half years ago Mr. Jones came to the Parks Department at Christchurch, from Adelaide, especially to take the Diploma examination course (he is the first Australian to do this) and, while employed there, completed the whole course within four years. He passed all thirteen units, without one failure, gaining an average mark of 71 per cent. In addition to obtaining the National Diploma in Horticulture (N.D.H.N.Z.), Mr. Jones was awarded the Cockayne Gold Medal (the highest examination award) and the David Tannock Memorial Prize.

The presentation of the Diploma and Prize Awards to Mr. Jones was kindly arranged by Mr. T. R. N. Lothian, Director of Botanic Gardens, Adelaide, who trained under Mr. J. A. McPherson at Christchurch Botanic Gardens, and is himself a holder of the National Diploma in Horticulture and the Cockayne Gold Medal Award. Mr. Lothian, in conveying the congratulations of the Institute to Mr. Jones, pointed out how fortunate New Zealand was in having an Institute which had made its major concern the training and examining of future gardeners to ensure they reach a proficient standard.



*Mr. Graham Jones (right) receiving the Cockayne Gold Medal and Diploma from Mr. T. R. N. Lothian, in Adelaide.*

In response Mr. Jones said how pleased he was at receiving the Diploma and Awards and expressed his personal gratitude to the Institute and to the Director and staff of the Parks Department and Botanic Gardens at Christchurch for all the help given him during his stay in New Zealand.

The Dominion Council and Examining Board are very pleased to know of the extension of interest in the Diploma to overseas horticulturists and hope that Mr. Jones may have pioneered the way for many more young Australians to follow in his steps.

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### PUBLICATIONS REVIEWED

CLIMBING ROSES OLD AND NEW, by Graham Stuart Thomas (Pub. Phoenix House, United Kingdom 45/-).

Mr. G. S. Thomas, Gardens Advisor to the National Trust, and a world authority on old roses, has just published his fourth book, *Climbing Roses Old and New*. Until its introduction, no book had been published in Great Britain on this subject, so it is sure to fill a much needed want. All types of climbing roses and ramblers — as well as the vigorous wild types from which they originated — are featured in this useful book. Helpful advice about the training, cultivation and pruning of these free-flowering roses should prove of great assistance to those wishing to grow a selection of the best of them; and suitable supports for diverse sites are well portrayed. The illustrations are the work of this versatile author. The fine pencil sketches and the water-colour studies deserve especial praise as they are not only accurate botanically, but have captured the spirit of each rose — even to their subtle colouring. Mr. Thomas is particularly interested in Musk Roses, and has recently reintroduced a less rampant and autumn-flowering form which he found in an English garden. This rose, he feels sure, must have been the type of Musk Rose described by writers during the sixteenth and seventeenth centuries. Once again, Dr. Gordon Rowley, of Reading University, has contributed a valuable chapter on *The Botany of*



**1966 ANNUAL DOMINION CONFERENCE**

of the

**Royal New Zealand Institute of Horticulture (Inc.)****FORTY-THIRD ANNUAL MEETING AND CONFERENCE  
OF DELEGATES**

NOTICE IS HEREBY GIVEN that the Forty-Third Annual Meeting and Conference of Delegates of the Royal New Zealand Institute of Horticulture (Inc.) will be held in NEW PLYMOUTH, on February 17th, 1966, commencing at 9 a.m.

The 1966 Banks Lecture will be delivered at 8 p.m. on that day.

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

It is recommended that those attending the Conference make early hotel reservations.

K. J. LEMMON,  
Dominion Secretary.

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*Climbing Roses* and the derivation of *Some Garden Climbers*. For those wishing to add a very informative and delightful book to their library, this is a very worth-while publication.

—N.S.

## DISTRICT COUNCIL REPORTS

### SOUTH CANTERBURY

Southern gardeners are not as well-blessed with winter blooming plants as are their Northern counterparts so they have warmly welcomed some recently introduced *Narcissi* which provide charming blooms throughout the autumn and winter. One of the parents used to produce this new group of hybrids was *Narcissus cantabricus* ssp. *cantabricus* var. *foliosus* (formerly *N. bulbocodium* 'Foliosus'). A clump of this species will produce milk-white hoop petticoats profusely, right through the winter, in coastal South Canterbury when planted in a sunny situation. The other parent is *Narcissus romieuxii*, a much pleated, pale lemon-yellow hoop petticoat which produces a batch of flowers in May, and then rests on its laurels until the end of July when it welcomes the prospect of spring with a further lot of blooms. These two parents have given us the admirable family of 'Jessamy', 'Taffeta', 'Muslin', 'Tarlatan' and 'Poplin'. These bloom right through the winter and have good texture and form to enable them to withstand the winter storms.

Also attracting interest in local gardens are the *Crocus* species. One of the early gems of the winter is *Crocus niveus* with rounded white petals, a rich yellow throat, and bright orange stigmata. To cheer us through mid-winter we have *Crocus imperati* which flowers before the shortest day. This has an attractive tall bud of buff-yellow feathered with purple, but a gleam of sunshine will open it to show the bright lilac-mauve petals. As the days lengthen there comes a long parade of *Crocus chrysanthus* in all its varieties. Some we have particularly noticed this year are the delicate 'Blue Pearl' with startling orange stigmata, the Jersey cream goblets of 'Cream Beauty' and the arresting gold and mahogany 'Zwanenburg'.

More and more members' gardens are flaunting the brilliant saucers of *Romulea sabulosa* which is proving surprisingly hardy in many districts. When the bulbs are established in a sunny corner, a mild day will induce the many long buds to open and show the satiny petals of orange-pink with intricate central markings of black, green and yellow.

This climate seems to suit the irises of the *reticulata* group. The hot dry nor'westers of summer have one advantage. That is in ripening the bulbs hard enough to resist the onslaughts of the dreaded 'ink disease'. Some members do still take the precaution of soaking the bulbs for 2 hours in a weak solution of formalin (1 part in 300). The rewards for this effort come in a blaze of brilliant blue *I. histrioides* 'Major' in July, followed by the hybrids 'Harmony', 'Joyce', 'Royal Blue', 'Cantab' and the newer 'Clairette'. This has its deep blue falls flaked with white, inherited from its parent *Iris bakeriana*.

Southern gardeners are finding that patches of bulbs such as these make the winter months so much more cheerful, and hurry along the advent of spring.

### SOUTH TARANAKI

#### APRIL

About 85 members and visitors gathered in the Kaponga Memorial Hall for the last circuit meeting of the South Taranaki District Council when a large display of brilliant autumn foliage and berried plants was exhibited by Mr. John Pettigrew, Nurseryman, of Stratford. These and other specimens on display were named and described by Mr. B. Hollard, F.R.I.H.(N.Z.), Kaponga, who also gave hints on their habits and cultivation.

A most interesting demonstration of floral art was given by Mrs. R. Clark, of Mahoe, as she used most effectively a wide range of containers and plant material in variety. Slides of her prize-winning chysanthemums were shown

by Mrs. R. Green, of Hawera, and these were described by Mr. D. Burton, of Kapuni, who gave details of their propagation and cultivation.

A description of his recent visit to Japan was given by Mr. J. P. Gibson, of Kaponga, who fascinated his hearers by a vivid portrayal of places he had visited and people he had met. The speaker illustrated his travels by showing colour slides in variety, taken in Singapore, Bangkok and in Japan itself.

#### MAY

Five members of the Royal New Zealand Institute of Horticulture were honoured on Thursday evening, 27th May, 1965, at Manaia when Certificates of Fellowship were presented to Mrs. D. E. Langlands, of Opunake, Mrs. S. E. Linn, of Mangatoki, Mr. R. W. Barry, of Hawera, Mr. B. Holland, of Kaponga, and Mr. T. A. Snowdon, of Inaha.

In making the presentation the President, Mr. R. Syme, A.H.R.I.H.(N.Z.), congratulated the recipients on the honour that had been conferred upon them by the Dominion Council in recognition of the special services each had rendered to horticulture in the past. He was sure that by continuing to show their interest and by generously sharing their knowledge the new Fellows would continue to benefit all phases of horticulture in the districts in which they lived.

The circuit meeting of the South Taranaki District Council was attended by about 100 members and visitors, and much interest was created by a large bench display of garden specimens interspersed with beautiful floral arrangements. The specimens were identified by Mr. R. D. Chamberlain, F.R.I.H.(N.Z.), who added some comment on the cultivation and habits of each. Also staged was a small exhibition of show standard chysanthemums, grown by Mrs. R. G. Green, of Hawera.

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A special feature of the evening was the presence of Mr. and Mrs. M. Anderson, well-known camellia nurserymen, of New Plymouth, who spoke on the cultivation and propagation of camellias, demonstrating both pruning and the taking of different types of cuttings and buds. Coloured slides gave those present beautiful pictures of available camellias in great variety and also a preview of some new varieties to be expected within the next year or two.

Additional interest was added to the evening by Mr. Brian Murphy, of Riverlea, who showed movies taken during his recent visit overseas, one film depicting Paris, one bull-fighting in Spain, and another the World Fair in New York. At the end of a most interesting trip, Mr. Murphy brought his audience back to Taranaki by conducting them over his own home farm and gardens and introducing them to the family pets.

Thanks to the speakers were warmly expressed by Messrs. R. W. Barry and T. A. Snowdon, and a very interesting evening concluded with the serving of supper.

### WAIKATO

At each of the monthly meetings a feature that always attracts great interest is the identification table. Members are asked to bring along specimens of any plant they have in their gardens, or have collected, and these are identified and displayed for all to see. Mrs. Harrison and Miss Bates are responsible for this display and they comment on outstanding plants, briefly giving advice on any cultural problems and where possible a short history of the plants. From the interest displayed by members this is obviously a most popular part of the meeting, and it is undoubtedly a great help in extending the range of plants grown in the Waikato. The fact that an average of sixty different specimens are shown at each meeting must be most gratifying to these two ladies, who undertake this interesting but demanding task.

Plants that have been shown include a wide range of species, varieties and cultivars of *Camellia*, *Lilium*, *Iris*, *Magnolia*, conifers and native plants.

Several years ago seedling plants from *Magnolia campbellii* were planted in the district. Many have flowered recently and the wide variation of colours, from deep pink to white, has been well shown.

A rare and intriguing *Narcissus* from Southern Europe, *N. viridiflorus*, with sweetly scented, tiny green flowers, which has been grown by one member in Hamilton, attracted much attention. Plants of *Cyclamen neapolitanum* and *C. europaeum* raised from seed, having tiny flowers varying from pale pink to white, contrasted strikingly with the latest efforts of plant breeders in the larger flowers of the florists' strains of *Cyclamen persicum*.

*Lapageria rosea* and its rare white form have both been shown, these plants ultimately grow well in the Waikato in a suitable position, but are usually rather difficult to establish and very slow growing in their early years. Another unusual evergreen shown was the Geraldton Wax Plant, *Chamaelaucium uncinatum*. This plant likes a very well drained, sunny position, where it can grow to 6 feet with masses of delicate pink flowers in late spring and summer.

### WHANGAREI

#### APRIL

#### Citrus (Choice of Varieties, Planting and After-Care)—

The Whangarei District Council is fortunate in having among its members several who are specialists in various branches of Horticulture and are competent to give advice in their particular fields. Outstanding among them is Mr. E. Arcus, F.R.I.H.(N.Z.), who for the past 35 years has grown and studied Citrus, their history, their breeding, their root stocks and their cultivation under varying conditions of soil and climate. His lecture given at the April meeting gave in condensed form a most useful programme for the grower or intending grower of Citrus.

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Mr. Arcus said he began growing Citrus 35 years ago when he bought two dozen Valencia orange and two dozen Washington navel orange trees on Citronelle stock. Failure resulted and was due to want of knowledge of what was being offered, and this want of knowledge was still an important factor. The buyer was apt to be influenced by the size of the top, whereas the root system was more important. When trees were wrenched in the nursery the mass of fibrous roots were too often cut away leaving a few stout portions which could not maintain the bushy top. Therefore the plant should be unwrapped and its roots inspected.

If planting could not be done immediately the tree should be wrapped up and heeled in with a cover of fine soil or leaf mould. If the top out-balanced the root system it should be reduced to correspond, even as much as 50 per cent., by taking out all weakly growth and some leaves, but not cutting a great chunk out of the middle.

Care in preparing holes for planting was most necessary, especially on heavy cold soils. On these it was a help to put down an old motor tyre and after digging out the hole building it up to the level of the tyre. No animal or nitrogenous manure should be used before planting but bonedust, basic slag or potassic super could be well mixed in the soil about two weeks before putting in the trees. In all cases a good big hole should be dug at least 3ft across and when finished should be mounded up to resemble an inverted saucer. Plant the tree at the same depth as it had been in the nursery. This could be easily seen from the dirt mark on the stem. Never put tins in the hole and do not heap rubbish or grass clippings against the trunk as these practices induce collar rot. Stakes were best driven in at an angle of 45 degrees with the stake pointing into the direction of the prevailing wind and bound with a piece of rubber or sacking to prevent chafing. Tie with baling twine. Shelter was most essential and could be provided by a split sack fastened to a few stakes.

On no account should *Citrus* be planted under other trees, but in an open, sunny position.

Varieties chosen should be those which did well in our climate. The true grapefruit such as grown in the U.S.A. were not successful here, neither was the Australian 'Wheeny' as good, there were some fine strains of the 'New Zealand Grapefruit' which were really good and suitable for our climatic conditions.

Tangelos, which were a cross between the mandarin (often called Tangerine) and the grapefruit 'Pomelo', were offered under two names, 'Seminole' and 'Tinera'. The consensus of opinion favoured the 'Seminole' and this was considered to be a first-class fruit, superior to any other *Citrus* when well grown. 'Tinera' was rather more like an inferior grapefruit, lacking both the colour and flavour of 'Seminole'.

Among lemons, 'Meyer' was recommended for family use and 'Eureka' was very prolific and thornless. Both should be on *trifoliata* stock.

Of oranges, 'Carter's Navel' was undoubtedly the best, though 'Best's Seedless' had the finest pulp in its best strains. Never buy 'Valencia' or 'Lin Jim Jong'; neither was 'Robertson's Navel' a good fruit.

Several mandarins were recommended. 'Clementine' from North Africa being the best with 'Thorny', 'Burgess' Scarlet', 'Silver Hills' (a new hybrid) and the Japanese 'Satsuma', all on *trifoliata* stock, being favoured.

The 'Ugli', another type of *Citrus* which has been imported for some years as fruit, can now be obtained as plants. It is rather like an outsize mandarin, very juicy and of good flavour.

Although the use of *trifoliata* stocks had been of very great benefit in the growing of *Citrus* fruits in New Zealand it had one drawback in that it was subject to root rot which sometimes caused the tree to die. When the leaves go yellow and drop off it indicates this, which is the worst disease.



Collar rot was caused by banking up decaying material or fowl manure around the stem which should always be kept free and open. Grass clippings piled around the trunk were also very bad. As soon as the decay of bark was noticed the infected part should be scraped with a sharp knife and smeared with a copper paste.

Verrucosis was a common fungoid disease of citrus fruits, especially of lemons. It took the form of grey specks and pimples on the skin. Trees should be regularly treated with a copper spray, oxychloride.

Scale of several kinds were common on *Citrus* and should be sprayed now with Oleocop.

Brown rot of *Citrus* occurred especially where the lower branches of the tree were close to the soil. In heavy rains the spores were splashed up on to the branches.

Leaf roller caterpillars were a common cause of fruit drop and if the fruits were examined they almost always showed insect damage. Spray with arsenate of lead straight after flowering, especially the new growth and continue every few weeks.

Aphids should receive a dusting (while wet) with derris.

If trees were well watered they were not prone to have thrips or red spider which thrived in dry conditions. Spray with malathion.

A story of reproduction of a desired variety of mandarin known as 'Hewlitt's' was then told. This was not compatible with *trifoliata* stock, so that a double budding was used. 'Best's Seedless' was put on *trifoliata* stock and the mandarin was then budded on to 'Best's Seedless' with which it is compatible.

It was also mentioned that many years ago Whangarei exported 7,000 cases of sweet oranges in a season. It was understood that the importation of cheap Island oranges killed this trade. However, it goes to show that Whangarei soil and climate are both favourable to *Citrus* growing.

Before planting the soils should receive a generous amount of manure, but for an old orchard which needed renovation a mixture of equal parts of basic slag and lime should be broadcast over the whole area, not just around the trees.

The causes of poor crops or crop failures were then explained. When dry fruit were produced on well-fed 'Satsuma' mandarins or fruit failed to set it was generally the result of the tree making strong vegetative growth which prevented the production of fruit. Water in summer was essential. All mandarins were susceptible to drying out, especially if making a lot of top growth. Another important point was to pick mandarins as ripe and to cut them off with secateurs, not to pull them off. If pulled they left a piece of wood to die back and make entry for borer. Kerosene should not be used to combat borer but always use benzine.

Finally, Mr. Arcus gave the formula for a good 'pick-me-up' for trees in poor condition..

Sulphate of Ammonia	.....	.....	.....	4 parts
Sulphate of Potash	.....	.....	.....	2 parts
Sulphate of Iron	.....	.....	.....	1 part
Sulphate of Magnesium	.....	.....	.....	1 part
Sulphate of Copper	.....	.....	.....	1 part

Mix well and apply at the rate of 1 tablespoon to a bucket of water.

(Continued)

#### ERRATUM

It is regretted that on page 134 of the June issue, due to a printers' error, Mr. H. T. Beveridge was stated as being Superintendent of Gardens and Reserves, Timaru. In actual fact Mr. Beveridge was holding that office at Oamaru. He has recently been appointed Superintendent of Reserves at Hawera.

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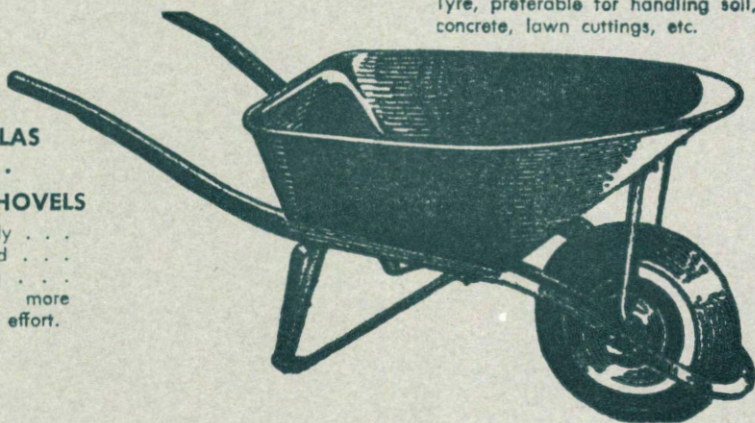
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