

Horticulture

in New Zealand

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42

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BULLETIN OF THE ROYAL N.Z. INSTITUTE OF HORTICULTURE
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ROYAL NEW ZEALAND INSTITUTE OF HORTICULTURE (INC)

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EDITORIAL

Congratulations to all the student members of the Institute who have recently passed exams. For some it will be the end of a long haul to get the qualification they were after. Some of us still have more exams to go. I have only got the dissertation to write so there is no excuse for my not completing my N.D.H. this year.

Lots of people will be getting started on T.C.I. assignments about this time of year and will no doubt be full of enthusiasm. So why not write an article for the Bulletin while you are sitting down thinking about horticulture.

In the Bulletin we want to keep members informed of what the Executive is doing and generally informed of anything of interest that is going on within the R.N.Z.I.H. If anything is going on in your area why not write a short article for the Bulletin so that everyone else in the Institute knows what's going on.

As members of the Institute are interested in all facets of Horticulture any observations you have will make interesting reading. Illustrations, either drawings or photos would be very welcome as would any letters regarding any suggestions for the Bulletin.

With the Garden History Group and the Notable and Historic Trees Committee there is lots going on apart from exams. If you are interested in either of these why not find out more and get involved.

A good way to find out what's going on is to go to the Conference. This year it is in the Waikato and has the title 'Horticulture - Merging Town and Country'. This Bulletin contains the registration forms and further information about garden visits and workshops. The date of the Conference is 15 to 18 May. This is just a reminder so you can make sure you have the dates in your diary and plan to come along. The more people that attend the better the Conference will be.

Hopefully you are now really inspired to get involved with the R.N.Z.I.H. in 1987.

I hope you find something to interest you in this Bulletin.

Regards,

Pamela Gibbons,
EDITOR.

A NOTABLE TREE REGISTRATION OFFICER

The functioning of the Notable and Historic Trees Scheme is very much dependant on the activities of its Tree Registration Officers. There are twenty five of these T.R.Os. spread throughout the country and without these most important members of the organisation, the scheme simply would not be able to work.

The tasks facing a Tree Registration Officer can seem rather daunting and at times be thankless. The Notable and Historic Trees Committee in Wellington supplies a booklet entitled "Guidelines for Tree Registration Officers" and a selection of trees extracted from Burstall's lists. It is suggested that T.R.Os. try to establish local support through friends or a committee but in most cases T.R.Os. are "on their own". They often have to travel long distances to assess, measure and photograph trees at their own expense: above all, they have to devote a good deal of their own time if they are to be successful.

The Notable and Historic Trees Committee endeavours, where ever possible, to offer moral support but there is a limit to such support that can be sent through a letter box. Hopefully, one day, the Committee may be able to offer more than moral support but this depends entirely on "Submissions to the Minister of the Environment" and as yet we have no idea how this has been received.

Of all the T.R.Os. none has worked as diligently and has been as unstinting as Thomas Looij.

Mr Looij who came from Holland in 1981 is the T.R.O. for the Central Hawkes Bay and lives in Hastings where he is employed by the Hastings City Council as Technical Officer for the Parks and Recreation Department, in addition to supervisory work in nurseries and parks, he is responsible for planning the flower gardens and for shrub and tree plantings in Hastings and the new suburb of Flaxmere. (Over 900 specimen trees, this year.)

Born and raised in a small, rural town in south-west Netherlands he was eleven when there occurred a disaster which had a profound effect on his life. Breaking through the coastal dykes, the North Sea flooded a vast area, drowned about three thousand people and, with its extreme salinity, destroyed all vestiges of terrestrial plant life. By seeing what it meant to be without trees Thomas Looij came to be aware of their importance. Now, he considers the New Zealand environment "beautiful" and worth preserving or improving "for our children's sake".

Comparing the low-key planning style in New Zealand with his native country's plethora of rules and regulations, Mr Looij thinks that the latter are the consequence of a much greater density of population (five times the number of people on one eighth the area of land in New Zealand) and a more acute awareness of the need to control the environment.

Despite sixteen years of experience and study in the discipline of horticulture in Holland, his qualifications have not been recognised by the R.N.Z.I.H.

With the unstinting support of his employer he has shown tremendous enthusiasm in locating special trees and hardly a meeting of the Wellington Committee goes by without fresh submissions from Mr Looij. He has diligently covered the Hastings City Parks where he has registered some fine trees notably in Frimley Park. He has also travelled extensively around the district as far afield as Dannevirke. Many of the country homesteads have very fine trees and Mr Looij has spent a great deal of time in researching these. To date he has registered seventy eight notable and/or historic trees and is working on others.

The Committee in Wellington would like to say a big 'Thank You' to Thomas Looij for a tremendous effort. A splendid example to others he is indeed a notable Tree Registration Officer.

ESTATE OF D.D. BAKER

The Institute has been the recipient of a bequest from the estate of Miss D.D. Baker of New Plymouth. The bequest will amount to approximately \$30,000 and will be known as the D.D. Baker Memorial Fund. The interest from the fund will be used for the benefit of the Institute in an appropriate way. The National Executive is currently considering various options in this respect.

A cousin of Miss Baker's, Mr K.C. Bacon, has provided the following information regarding the life and interests of Miss Baker.

Miss Dorothy Baker was born in Eltham in the year 1899. She had her early education in Taranaki and went to Training College in Wellington.

She spent many years as a Primary School Teacher - mostly in Taranaki - but spent a year as an exchange teacher in Alberta, Canada.

She retired to live with her parents at "Hilton Crest", Devon Street, Fitzroy. Her father was a builder and retired to live in New Plymouth. All of the family were keen gardeners and "Hilton Crest" was an attractive residence with a nice view out to sea.

As the years passed on the main terrace became a bit much and the family moved to 25 Princes St, Fitzroy. When Mr C.P. Baker died in 1962 the daughters sold this place and moved to 263 Courtenay Street, New Plymouth.

Dorothy kept an attractive garden with a special interest in camellias. In 1984 advancing years dictated a move to a nursing home where Pauline died 5 January 1985 and Dorothy died 26 September 1986.

Money spent in the cause of horticulture would be a fitting memorial to Dorothy Douglas Baker.

FROM THE EXECUTIVE OFFICER

I hope all our members had a peaceful and relaxed Christmas, and a good holiday before facing the rigours of the New Year.

By the time you read this all 1986 examination results will have been sent out. To those students who have passed "congratulations" and to those students who have missed out this time, please try again this year as I am sure you will find the eventual success worth all the effort.

1986 was a year of considerable growth within the Institute. Our membership climbed above the 2,000 mark and currently sits at about 2,300. More students sat more examinations than ever before with a total of 1,656 student papers covering 72 different subjects. This is a 40% increase over the 1985 examination exercise.

A new District Council is about to be established in the Wanganui region: Phil Thomsen and an energetic group of members are working hard on this right now. Also there are moves afoot to reactivate a District Council in the Nelson/Blenheim region.

Financially, 1986 was a year of increased costs, increased income and hence of course, increased turnover. Full details of the \$250,000 turnover will be set out in the 1986 Annual Statement of Accounts which will appear in the next Bulletin (Autumn 1987) prior to being presented to the Annual General Meeting in Hamilton.

BEQUEST FROM ESTATE OF D.D. BAKER

The Institute has been advised that it will be the recipient of approximately \$30,000 under the terms of the will of Miss Dorothy Baker of New Plymouth. Miss Baker was not a member of the R.N.Z.I.H., but through her life took a keen interest in gardening and the preservation of New Zealand flora. The National Executive is currently considering how this bequest might be utilized to provide the maximum benefit to the Institute. An article regarding Miss Baker appears elsewhere in this issue of the Bulletin.

MEMBERSHIP OF NATIONAL EXECUTIVE

In terms of the R.N.Z.I.H. constitution, the following members of the National Executive are due to retire from office at the 1987 Annual General Meeting:

Mrs Robin Bagley	-	Dunedin
Mr Ian Gear	-	Hamilton
Mr Lawrie Metcalf	-	Invercarraill
Mr John Taylor	-	Christchurch.

Nominations for the four vacancies thus created will close on Friday, 13 March 1987, and if more than four nominations are received, a postal ballot of all members will be conducted and the election result announced at the Annual General Meeting.

All four retiring members are eligible for re-election.

A person standing for election to the Executive must be proposed and seconded by members of the Institute. Such nominations must be signed by the person signifying his or her eligibility for an acceptance of nomination and his or her willingness to serve on the Executive for a period of three years.

The 1987 Annual General Meeting also brings to a close Alan Jolliffe's three year term of office as Chairman. The incoming Executive will be required to elect a new Chairman for a three year period. Mr Jolliffe will be eligible for re-election for one further term of office.

NOTABLE & HISTORIC TREES

Many members, especially those residing in Wellington, will be aware that the status of New Zealand's historic trees was recently brought into shop focus by the "Museum Street Oak" affair. In the grounds of Parliament Buildings stands a 100 plus year old oak tree. This tree, despite its registration by the R.N.Z.I.H. Tree Registration scheme (approved by the tree's "owner", the M.O.W. in 1982) was going to be shifted in the middle of summer to make way for extensions to Parliament Buildings. Its chances of survival were described as minimal.

That this tree is not already dead is as much as anything else a tribute to Ron Flook and a band of dedicated tree lovers in Wellington who literally defended the tree in person after they had discovered its plight late one night at an office Christmas party.

I won't go into more detail, other than to suggest that the "N.Z. Listeners" description of Ron Flook as "brown and somewhat woody himself" hardly does credit to the man - he certainly does not have a wooden heart! The point that all R.N.Z.I.H. members should note is that we must keep lobbying our members of Parliament to ensure that suitable legislation is put through the House to ensure the preservation of this aspect of our national heritage.

Ron Flook, (8 Westhill Rd, Pt. Howard, Eastbourne, Wellington) will be happy to provide further information - ammunition if you like - to anyone who cares to contact him.

Five minutes spent putting pen to paper, if done by enough people could ensure the protection of "Tree No. 47" - The Museum Street Oak and many hundreds like it throughout the country.

I hope to see many of you in Hamilton at the 1987 Annual General Meeting and Conference. The Waikato District Council have a great programme lined up for 15-18 May.

Dave Cameron
EXECUTIVE OFFICER.

OBITUARY

JOHN STUART YEATES

Many people will be sorry to learn of the recent passing of Dr John Yeates at the age of 86. He was one of New Zealand's outstanding plant breeders, especially of lilies and azaleas; so much so, that his lilies achieved worldwide fame and recognition, enhancing the reputation of New Zealand's horticulture.

John Yeates was initially a botanist, graduating M.Sc. and then Ph.D. from the University of New Zealand. He studied further at Cambridge (England) obtaining a doctorate from that University also.

He joined the staff of Massey Agricultural College, teaching Agricultural Botany. Together with Dr Ella Campbell, they produced their own textbook Agricultural Botany appropriate for local conditions and long used as a text by NDH and other students. His book Farm Trees and Hedges, regretfully now out of print, stressed the importance of shelter long before the current realisation of its importance. He was one of the prime movers in establishing a horticultural course at Massey. This was initially a two year Diploma, the first residential horticultural course in this country. Those who were students at that time will remember that some of their practical work involved laying out and maintaining the grounds.

His interest in horticultural education continued after his retirement, as a co-examiner of NDH theses, membership of the Institute's sub-committees and similar R.N.Z.I.H. activities.

His chief horticultural interests were rhododendrons and lilies. For many years he was Secretary, then President and finally patron of the N.Z. Rhododendron Association. To supply plants to members Dr Yeates established a rhododendron nursery in the grounds of Massey, thus rare plants unavailable commercially were imported and distributed throughout the country.

He was also closely involved in the Association's trial and display ground at Kimbolton near Feilding. Of greater significance was his recognition of the pioneer breeding of rhododendrons and azaleas by the late Edgar Stead of Ilam (where Canterbury University now stands). Of special note were the deciduous azaleas known as Ilam Hybrids; for some reason the nursery trade neglected these giving preference to overseas cultivars and strains. John Yeates grew the Ilam azaleas and carried out further breeding and selection to produce the 'Melford Hybrids' in yellows and reds, full trussed, scented and hardy.

But lily breeding was his true forte. Realising the potentiality of crossing *Lilium auratum* with *L. speciosum* and with their progeny, he raised many beautiful *L. x parkmanii* cultivars ranging from pure white to deep red.

His most famous lily is the vigorous dark red flowered 'Journey's End' now forced in glasshouses in Holland and Japan. He also bred genetic dwarf parmaiiis, introduced by the Oregon Bulb Farm. Later he turned his attention to breeding Aurelians, producing fine golden trumpet lilies of great strength. John Yeates corresponded and exchanged seed or pollen with lily breeders throughout the world.

He represented New Zealand at the International Lily Conference in England in 1969. At the Conference the Royal Horticultural Society awarded him the Lytell Cup for lily breeding, acknowledging his years of interest in and improvement of lilies. Previously the R.N.Z.I.H. had recognised his breeding success by the grant of the Plant Breeders Award and he had for many years been an Associate of Honour of the Institute. Nationally his service to horticulture in New Zealand was recognised by the granting of the Honour: Member of the British Empire (M.B.E.) in 1977.

To those who knew and worked with him, John Yeates was generous with his time and his plants. Many private and public gardens benefitted from his gifts. He has left a legacy and example it will be hard to improve.

We extend our sympathy to Mrs Yeates and their family. John Yeates will be remembered both for himself and his achievements.

GARDEN HISTORY SECTION

Compiled by Winsome Shepherd (AHRIH)

Mike Oates generated interest in our newly formed Garden History Group when he forwarded an article on our establishment to the Australian Garden History Journal. As a result some Australian Garden History members have expressed an interest in attending some of our Annual Conferences with their Garden History content. This is an angle that could be pursued by our National Executive.

Since our May Conference, activities have been strong in Otago and Northern Districts while Wellington has made an initial approach, with Historic Places Trust, to examine gardens of old properties in the Wairarapa. From Dunedin comes the information that a senior apprentice has done further research on the history of the Dunedin Botanic Garden, further that is to Graham Patterson's splendid National Diploma in Horticulture thesis on that Garden's history. This new material has been written up by a Dunedin City Council Horticultural Management Officer and is, we understand, to be sent to the R.N.Z.I.H. Journal's Editor for publication. This is excellent news for the more we learn about the history of our major gardens the greater the appreciation of them and the efforts of those who first created these gardens last century.

The grounds round Dunedin's Knox Church, a registered Historic Places Trust property, are being maintained by Robin Bagley, her husband Stan and Sheila Irwin. These members, by example, should encourage the rest of us to profer help and informed advice on how best to care for grounds surrounding Trust properties. We have been slow to recognise the importance of such Gardens, allowing formal herb gardens, even though they create public interest, to be introduced where they may be considered out of context. One may well ask where are the flowers and shrubs of yesteryear in these Gardens.

Robin Bagley talks enthusiastically of locating photographs and information relating to properties at Wairongo Springs and Ferntree Lodge formerly owned by W.H. and J.S. Thompson respectively. In Otago there are now fifteen people involved in caring for a number of New Zealand endangered plants, a splendid achievement. We look forward to receiving further information on these Dunedin activities in the future.

The Northern regions have suggested we prepare a booklet on New Zealand's notable gardens (including 19th Century ones) and would like to see a co-ordinator be appointed for the project. From discussions here in Wellington it would seem there is general acceptance for such an R.N.Z.I.H. compiled booklet and suggest meanwhile that each district takes the immediate responsibility for compiling relevant material with the idea of later national publication.

Now a few words on the Australian Garden History Conference held in Launceston, Tasmania on the weekend of November 7-10. Four large buses collected 180 registered attenders from hotels, taking them to the Chairlift at Cataract Gorge. Two by two we glided over the lake at the bottom of this gorge, over banks of rhododendrons which included *R. fragrantissima*, to enter the Garden for registration, lunch, and a formal welcome by the Mayor of Launceston. It was a spectacular entry and welcome for any Conference. Discussion papers were held between 9 a.m. - 10.30 p.m. each day, followed by morning and afternoon garden visits with lunch, a champagne one, at another garden venue. There was time for a quick clean up before pre-dinner drinks and an examination of an extensive range of books for sale. Yours truly bought three which included Cottage Gardens in Australia by Peter Cuppley - a book applicable to early New Zealand gardens. A book display like this could be a suggestion for our Conferences especially as it was a lucrative one for the bookseller.

Tasmania, and Launceston in particular, has a wealth of old properties, many established in the 1830s and it was a privilege to visit them especially where some were in the same family ownership as when first established. The majority of the homes themselves carried a National Trust Registration. The gardens were dominated by plants originally from the northern hemisphere - lilacs, snowball trees, ceanothus, azaleas, old roses, many iris species, oaks etc. and invariably a perimeter planting of conifers. Few Australian natives were used possibly due to the very cold winters. The countryside was extremely green with rows of hawthorn predominating and many old mature *Pinus radiata*. The latter drew my attention particularly when owners thought that they were established between 1845-1855.

My subsequent research in Hobart supports an 1855-57 introduction of the species from Britain to the Royal Hobart Botanic Garden with subsequent seed distribution from these trees ten years later to the Melbourne Botanic Garden. This would perhaps indicate an 1860s distribution of radiata plants or seeds in the Launceston area, a date more consistent with New Zealand trees of a similar age.

It was interesting to discover that, like the Wellington Botanic Garden, the Hobart one was originally a Royal Society Garden. There are many similarities in their history. The relationship of early Australasian Botanic Gardens with Kew and the 'Home Office' is now receiving attention from those of us researching these gardens and here I must mention John Adams' present line of research focussed around the Sydney Botanic Garden and the earliest period in the Auckland Domain history. As we learn more of the work of these early Gardens we realise that they were created under difficulties by men known to each other and few in numbers, by men who had the drive and initiative to encourage plant collections and investigate the flora, not only of their new country, but from other newly discovered nearby South Pacific countries. Tasmania was no exception and as Hobart was the fueling port to vessels sailing around the Cape of Good Hope that town played an important part in the distribution of plant material in the early years of last century.

Finally, the Garden History Committee needs items for future bulletin newsletters so please put pen to paper. It is not possible for us to seek out and review Garden History subjects published elsewhere so your co-operation in informing our members of the work in your area is welcome.

A BRAVE NEW WORLD

HORTICULTURISTS SHOULD DROP THE OLD FASHIONED DEFINITION OF AMENITY HORTICULTURE AND PICK UP THE ENVIRONMENTAL TAG SAYS STEVE DOWBIGGIN

Steve Dowbiggin is principal of Capel Manor Institute of Horticulture and Field Studies, Waltham Cross, Hertfordshire England.

Amenity horticulture is a term which has become increasingly difficult to define. It suggests the care of traditional parks and gardens, with an emphasis on decorative horticultural techniques; but nowadays it should also include a great deal more.

We now tend to associate amenity horticulture with leisure and recreation provision. This tendency has been encouraged by the formation of the Institute of Leisure and Amenity Management and the merging of interest of local authority parks departments with their 'big brothers' recreation and leisure. Amenity horticulture in its narrow, old-fashioned definition, has slipped into the background; and some parks departments, in reaction have become even more traditional in their outlook.

What we need is a whole new concept of horticulture which will allow the amenity sector to expand so as to encompass all aspects of recreational horticulture.

What areas would this 'brave new amenity world' encompass? Obviously, decorative horticulture, but also specialist areas of sports turf provision, arboriculture and management, together with supervision of those employed in these areas.

EXPANSION

The expanding areas of educating and encouraging the general public to use plants in their gardens through better interpretation of existing parks and gardens should also be included, along with the support and horticultural training of those in the plant retail trade.

Finally, there is the other growing 'service' industry, that of providing guidance and support for public enjoyment of open spaces and countryside.

Often the maintenance and enhancement of natural features is as hard, if not harder to manage, than traditional floral decorative features. The features to be observed in such natural environments are not as obvious as those of a colourful bedding scheme or planted border and therefore the public needs more help in order to appreciate them.

The first attempt at a new name for amenity horticulture was recreational horticulture. This was not successful, because the public image of recreation is often centred around sport

and physical activity, so the name misses many of the relaxing and sympathetic qualities of horticulture.

The second and much better suggestion was environmental horticulture. This means more to people and excites their interest. The definition of environmental horticulture is 'the maintenance, management, use and interpretation of the environment' which promises far more than traditional amenity horticulture.

Let's explore the various proposed functions of environmental horticulture in detail, for each covers a very wide area.

The maintenance function includes all of the traditional aspects of maintenance horticulture. Whether people are involved in maintaining botanic gardens, private gardens, woodlands, open spaces, sports fields, urban parks or whatever, these places are all being maintained for public use and enjoyment.

Obviously the specific training of each of the craftsmen and craftswomen of each sector would have to be job-specific and few people would be able to transfer between sectors. However, they would be faced with the same basic task, all having to consider public access, use and enjoyment of their facility.

The management function includes not only the management and supervision of those employed in this industry, but also the investigation of public needs and the associated planning required to modify facilities to meet those needs.

Such managers would be able to move freely between sector interests because they should rely on others to provide the technical and practical support they require to co-ordinate activities and developments which satisfy public needs.

The use and interpretation function is probably the most exciting part of the new concept of environmental horticulture. The front-line activity of this developing industry must be to educate the public in the use and interpretation of the environment.

While there have been valiant efforts in this area in the past, it is my opinion that major initiatives are still needed. Such initiatives have started at junior and primary schools where environmental education continues to be an important component of the curriculum. After that it often dies completely, smothered by pressures to obtain pure science or industrially based qualifications.

IGNORANCE

Therefore the public is largely ignorant of how to use and enjoy its open space and countryside effectively; and frustrated by their ignorance, people end up not using the facilities at all.

Whether or not the concept of environmental horticulture is adopted there will still be the urgent need to educate the public, and through such education we can help millions more people to discover the beauties and enjoyment awaiting them.

not only in their local park or gardens, but also in the whole natural environment which surrounds them.

Through environmental horticulture all horticulturists can unite and lead the public to a greater awareness and enjoyment of the natural world in which they live. It would be very exciting if the Institute of Horticulture would raise its banner and offer to take on the concept of environment horticulture. Then through the Institute we could all unite to influence the maintenance, management, use and interpretation of our environment.

NURSERY CATALOGUES

Have you ever wondered what kind of plants were sold in New Zealand last century, pre World War Two, last year?

Well horticulturalists do, especially those involved in the plant breeding industry.

When a plant was first released in New Zealand or hybridized is sometimes only available by checking nursery catalogues published at that time.

To help plant breeders and plant historians the D.S.I.R. Library at the Mt. Albert Research Centre has set up a Nursery Catalogue Collection.

Catalogues already held date from the early 1880's to the present day. At present we are specialising in New Zealand material, but we also cover Australia, Great Britain, U.S.A. and Europe.

We would like to fill in the many gaps in our collection, but to do so we need your help. Please search out any unwanted catalogues from past visits to a nursery and send them to me where I will place them in the collection.

We particularly require New Zealand catalogues from 1850-1986.

Marleene Boyd
Information and Serials Librarian
Mt. Albert Research Centre Library
D.S.I.R.
Private Bag
AUCKLAND,
NEW ZEALAND.

POHUTUKAWA — THE NEW ZEALAND CHRISTMAS TREE

by Alan Jolliffe

The Pohutukawa is one of New Zealand's best known trees. It has been drawn, photographed, admired, talked about and written about throughout the years. First the Maoris and in later years the Pakeha have recognised the Pohutukawa as a very important tree.

Flowering at Christmas time each year and covering itself with bright dark crimson flowers, it is no wonder it has been called New Zealand's Christmas tree.

The flowering of the Pohutukawa has been described by many people as "perhaps the most magnificent plant in the New Zealand flora" and "one of the floral delights when at Christmas its whole broad crown is a solid mass of red flowers". Anyone who has seen a large tree in full flower must be impressed. If not impressed by the display, one must be impressed by the thousands and thousands of flowers that cover each tree.

If you are a little late seeing the tree in full flower, then you will see another spectacle. Millions of dark red stamen carpeting the ground. A sight to behold.

The flowers are not flowers in the traditional sense - examine one. It is about 75mm across, comprises three smaller flowers and has no petals. Protruding from a little cup at the base are masses of bright red stamen. It is the brilliantly coloured stamen, each about 25mm long that produce all the colour. Trees have been known to flower heavily one year and lightly the next.

Each little cup brims over with copious amounts of nectar and the birds and bees will come to feast; notably Tuis and Bell-birds. The bees collect the nectar and take it to their hives to provide honey. Rata honey is renown for its strong flavour.

Standing proudly, the Pohutukawa tree is easily recognised. Its short stout trunk supports many strong spreading branches and it will form a large rounded tree up to 18m high.

It is abundant along coastlines, and in coastal forests of Three Kings Island off the North Island. Also found around Lake Taupo and other lakes of the Volcanic Plateau. It ranges in altitude from sea level to 700 metres. The coastal environment is tough and in some exposed rocky places it may be dwarfed by the elements to a tree only 1m high. Many have been planted in other locations around New Zealand and specimens can be found almost anywhere.

One of its characteristics is to produce bunches of dark red fibrous roots or rootlets which hang down but don't reach the

ground.

On rocky places trees have established footholds in impossible places and can cling to the sides of cliffs. Their long twisted roots attach themselves to the rocky cliff wall. Hanging from the cliffs, branches often dip into the sea and mussels have been known to attach themselves to the branches.

Adult leaves are easily recognised as the underside of each is densely covered with small white hairs (resembling a white fur) called tomentum. The leathery leaves are 30-125mm long and 30-50mm wide and dark green above. Leaves are attached to the branches by small petioles opposite each other and are spotted with oil glands.

The timber of the Pohutukawa is dark red in colour, dense, heavy and compact and very durable. Its tortuous habit of growth made it valuable for ship timbers and it was used extensively for ship building in the early days of settlement in New Zealand. The timber is very durable in salt water. It makes excellent firewood.

Legend and stories abound about the Pokutukawa. It has been said that it was the "flowering of the Pohutukawa which welcomed the Maori to New Zealand".

Maori legend also says that "Spirits of the dead travelled northward along the mountain ranges until they came to the ridge of wild rocks running out to sea in the extreme north known as Cape Reinga. They came to a giant Pohutukawa reputed to be over 800 years old, with a great limb over-hanging the rocks and ocean. To this branch the spirits hung for some



METROSIDEROS EXCELSA
N.M. ADAMS

time reluctant to leave the upper world. At length, through a sea weed fringed cavern they plunged into the gloomy depths of Po. But time changes all things. So many were killed in the wars of Hongi that the great branch became bent downwards by the number of spirits who thronged it." When Mr Cheesman visited this tree in 1895 the tree was still there but the branch broken off with only its whitened stump left. This branch was said to be the last earthly land hold for the spirit when it leapt off the world into the Reinga (underworld).

Cowan, in "The Maoris of New Zealand" wrote that "On the southern side of Lake Rotoiti stands two large and ancient Pohutukawa famous in the forest and nature-lore of the lake people. If these Pohutukawa started to flower on the lowest branches first and so gradually burst into blossom from the bottom up, it was an omen of a warm and pleasant season - as well as a fruitful and abundant year for crops. But if on the contrary, the buds burst first at the top and the tree flowers downwards, it is a sign of a cold and inclement season - disastrous year for crops."

When the Pohutukawa is in bloom the Sea Eggs (Irchins) are fat and so it is a good time to collect this delicacy.

New Zealand's largest Pohutukawa - Te Waho Rerekoha grows at Te Ara roa, has a height of 20 metres and a spread of 39 metres and is reputed to be over 300 years old.

Botanically the Pohutukawa is called *Metrosideros excelsa*. For some time its botanical name was *Metrosideros tomentosa* a reference to the dense white hairs - tomentum - on the underside of the leaves and on the flower buds. However, it was originally named *Metrosideros excelsa* in 1788. The botanists Banks and Solander first noted this tree in 1769.

Metra means middle and *sideros* means iron, which is a reference to the hardness of the heartwood. *Excelsa* means high elevated or outstanding, a reference to the flowering habit.

Pohutukawa is said to mean "spray sprinkled", a reference to the habitat of the tree and the fact that it is often sprinkled with sea spray.

There are 11 species of *Metrosideros* in New Zealand with other species in Polynesia. New Zealand has the only climbing species of which the best known is the Rata. *Metrosideros* belongs to the myrtle family which is dominated by the large genus *Eucalyptus*.

The Pohutukawa is easily grown from seed and from cuttings, tolerates high winds and most soil types. It will not tolerate heavy frosts until well established.

It can be planted in groups as a specimen tree or as an avenue. Wherever it is planted it will grow well into a large tree which will dominate its position. Group plantings in parks and open spaces can provide fantastic landscape features, especially at Christmas time. It has been grown as a bonsai, tub or patio plant, and as a hedge.

A yellow flowered form was discovered in 1840 on Motiti Island, near Cape Runaway in the Bay of Islands, by a Mr Potts, known as *Metrosideros excelsa* 'Aurea'. A variegated form with creamy yellow margin also exists and is known as *Metrosideros excelsa* 'Variegata'.

This poem aptly describes the Pohutukawa:

"From crest and crevice, tortuously flung
Those monstrous iron-hearted myrtles hung -
Stiff snaky writhing trunks and roots that clave
And crawled to any hold the ramparts gave."

(Domett)

A RARE MIGRANT FROM ARGENTINA

Taranaki's notable trees

by Brian Scanlan

(Reprinted from *Taranaki Herald* 12 Nov. 1985)

Put a ring around New Plymouth's Leach St.-Hobson St. intersection, point of greatest change in recent times.

Inside this ring is a reminder of the past, a centenarian tree, the largest of its species in New Zealand.

It is the ombu tree (*Phytolacca dioica*), a rare migrant from the pampas of Argentina.

Who planted it is uncertain, but the history of the region suggests James Mitchinson had a hand in it.

He arrived in New Plymouth from Scotland in 1860-61 and established a nursery on 18 acres (7.2 hectares) in the Hobson St.-Watson St. area.

Not only did his nursery become a tourist attraction, young men who influenced Taranaki horticulture were trained there.

The ombu tree must have intrigued Mitchinson as it does horticulturists today.

Una Van Der Spuy gives it a paragraph in her *Gardening with Trees*, printed in South Africa in 1978. She says it is "evergreen or partly deciduous" with massive emerging roots and grows best where frosts are not severe.

The writer, W.H. Hudson, fits the ombu into the folklore of Argentina. He was born in 1841 of American parents about 16km from Buenos Aires where the land has billiard-table flatness.

During his first 27 years he studied the natural life of the plains, the hard-riding gauchos, the cattle and sheep resting from the hot sun in the shade of trees.

With rare sensitivity, he became in England a writer described by John Galsworthy as possessing "a supreme gift of disclosing not only the thing he sees but the spirit of his vision."

In *Far Away and Long Ago* published in London in 1918 when he was 77, Hudson told how his family home had been named *Los Veinte-cinco Ombues* - 25 gigantic ombus standing wide apart in a row about 400 metres long.

He continued: "The ombu is a very singular tree indeed, and being the only representative of tree vegetation, natural to the soil, on these great level plains, and having also many curious superstitions connected with it, it is a romance in itself.

"It belongs to the rare *Phytolacca* family and has an immense girth - forty or fifty feet in some cases; at the same time the wood is so soft and spongy that it can be cut into with a knife, and is utterly unfit for firewood, for when cut up it refuses to dry, but simply rots away like a ripe watermelon.

"It also grows slowly, and its leaves, which are large, glossy and deep green, like laurel leaves, are poisonous; and because of its uselessness it will probably become extinct, like the graceful pampas grass in the same region...

"The antiquated and handsome ombu had its uses; it served as a gigantic landmark to the traveller on the great monotonous plains, and also afforded refreshing shade to man and beast in summer; while the native doctor or herbalist would sometimes pluck a leaf for a patient requiring a very violent remedy for his disorder.

"Our trees were about a century old and very large, and as they stood on an elevation, they could be easily seen at a distance of ten miles."

Of the Argentinian superstitions surrounding the ombu tree, Hudson chose one for the theme of his short story *El Ombu*: "Sorrow and at last ruin comes upon the house on whose roof the shadow of the ombu tree falls."

New Zealand's leading tree historian, S.W. (Bob) Burstall, is the authority who declares New Plymouth's ombu is the largest in the land.

A larger ombu grew at Tauranga, but was bulldozed off a school site about 26 years ago.

It is reassuring to know that New Plymouth's curious tree cannot have the same fate. It is registered under the city council's district scheme as protected.

LODER CUP AWARD 1986

The Loder Cup Award for 1986 has been made to Mr Roderick Syme of Hawera.

This Award is made annually by the Minister of Agriculture to encourage the protection and cultivation of the native flora of New Zealand. The Cup was presented for competition within New Zealand by the late Gerald Loder, later Lord Wakehurst of England, the first award being made in 1929. It has been made annually since then without a break.

Mr Syme, who is aged 86 years, has shown a life-long desire to encourage interest in and knowledge of New Zealand native plants, their conservation, propagation and use for shelter and amenity planting. For more than forty years Mr Syme was a specialist teacher of nature study, science and horticulture with the Taranaki Education Board. Within the schools of this Board he instigated the forestry in schools programme and the Boys' and Girls' Clubs scheme, both of which activities later spread throughout the country. The school forestry project, begun in 1921, centred around the raising of seedling trees in school nurseries and the scheme was soon taken up in all Education Board districts. Its value was recognised by both the Education Department and the then State Forest Service. Many of the trees grown in school nurseries were established in school plantations, but most were taken home by the pupils for planting small wood-lots on farms. These wood-lots formed the beginning of the farm forestry movement. It was not long before the emphasis moved away from exotics to the planting of native plants. In the Centennial Year of 1940, more than 8,000 native trees were planted and tended by the children of over thirty Taranaki schools. Today these school plantings bear testimony to Mr Syme's dedication to the planting and care of native trees and shrubs.

Mr Syme's enthusiasm and energy also extended out into Local Body affairs. For fifteen years he served as chairman of the Parks and Reserves Committee of the Hawera Borough Council. During this period Council works projects included the Turuturu Mokai Historic Reserve, Te Nqutu-O-te-Manu Historic Reserve, Naumai Park, hospital grounds, Pouawai Reserve, King Edward Park, homes for the elderly, the establishment of an alpine garden at Dawson Falls in Edmont National Park and a planting at the Park entrance on the Dawson Falls road. A plantation of native trees at the Turuturu Mokai Reserve is now producing seedlings for the extended planting of native plants in other schools and public areas throughout the district.

Mr Syme's paper, six years ago, on native plants for shelter, given at a Farm Forestry seminar in Hawera, brought the increased realisation that shelter plants other than Boxthorn were possible in South Taranaki's harsh coastal areas.

During his long years Mr Syme has given numerous talks and set up many displays to promote a greater appreciation of the native flora of our land. His help and advice are still regularly sought and readily given. Mr Syme's own home garden,

now mature, is a mecca for horticulturists and native plant enthusiasts. It is open to the public for philanthropic purposes from time to time.

Mr Syme served on the Egmont National Park Board 1945-54, the Tongariro National Park Board 1948-54, and the National Parks Authority 1954-74. He was accorded the M.B.E. in 1955 in recognition of his services to agricultural education and mountaineering. He is an Associate of Honour of the Royal N.Z. Institute of Horticulture.

Throughout his long life of service to the community of school children and citizens of the Taranki province, as well as further afield, Mr Syme has not failed to promote an increasing love for and appreciation of the native plants of our land in such a way that it is very fitting that he should now be

OLD PLANTS FOR OLD GARDENS

A growing number of Australian gardeners have in the past few years shown an increased interest and fascination with the garden history of our country.

They are collecting old fashioned garden plants, once grown by grandparents and great-grandparents, from old nurseries, roadsides, cemeteries and derelict gardens.

Nurserymen are now specialising in the old-fashioned flowers, and period garden designs are being used to embellish nineteenth century modernised homes which are becoming increasingly prized by home owners.

Herb gardens are again becoming fashionable not only for their old world charm but culinary value.

Australia is, perhaps, the only country to have provided government funds to assist study of old gardens which are now accepted as a legitimate part of our cultural history.

A national Garden History Society was founded in Melbourne in March, 1980 and the proceedings of the First Garden History Conference have just been published.

This paper bound book of 79 pages with numerous black and white photographs will delight gardeners of all ages and contains articles by leading landscape architects, garden historians and plantsmen.

There are numerous references to South Australian gardens as well as others, particularly in the eastern states and Tasmania where a majority of historic gardens exist.

The book costs \$5.00 from the National Trust of Victoria which published the work.

The past few years has also seen the formation of a society called "Heritage Roses in Australia," an informal group with a newsletter dealing with old-fashioned roses and associated plants.

The membership has grown in a spectacular way, and old rose enthusiasts organise visits to each others gardens where prized plants are exchanged.

Old roses possess flower colors, flower shapes and fragrance which are still unsurpassed by most modern roses.

We in South Australia are fortunate in having some of the finest old rose collections in the southern hemisphere, and Deane Ross of Bedford Park, sells many of these treasures from his well-known rose nursery.

Mr Ross has just published "Shrub Roses in Australia," a paperback 72-page catalogue of the old roses and others which he has grown. It is well worth buying even if you grow only one or two roses.

He deals with all the major old rose groups, the rugosas, chinas, gallicas, damasks, albas, centifolias, mosses, noisettes, bourbons, teas and hybrid perpetuals.

Each rose has a brief description and some a good photograph, but the book will also bring pleasure in the poetry of the old rose names - Belle Amour, Great Maiden's Blush, Tricolore de Flandre, Mrs Wakefield, Christie-Miller or Prince Camille de Rohan.

This catalogue is written in the tradition of the now classic "Shrub Rose Manual," of Sunningdale Nurseries, by Graham Stuart Thomas. Full marks Mr Ross, and obtainable from his nursery for \$3.00.

- Dr Brian Morley,
Director,
Adelaide Botanic Garden.

*From "Your Garden" Australia,
August 1981.*



ROYAL NEW ZEALAND INSTITUTE of HORTICULTURE

*Conference and AGM at Bryant Hall - University of Waikato,
Knighion Road, Hamilton.*

Friday May 15 to Monday May 18th

PROGRAMME (A detailed programme will be provided on Registration)

Theme of Conference

HORTICULTURE — THE MERGING of TOWN and COUNTRY

FRIDAY 15th May

- 10.00 am — National Executive Meeting Bryant Hall; Lounge
- 5.00 - 6.00 Registration — Bryant Hall; Buttery
- 6.00 - 7.00 Social Hour — Buttery
- 7.00 - 8.30 Dinner — Bryant Hall
- 8.30 - 10.00 Welcome, Addresses & Graduation Ceremony

SATURDAY 16th May

- 9.00 - 1.00 Annual General Meeting Room L1
- 1.00 - 2.00 Lunch
- 2.00 - 5.00 Informal
 1. Golf 9 - 18 holes
 2. Mystery Tour
 3. River Cruise
- 6.00 - 8.30 Institute Dinner
- 9.00 - 10.00 Banks Lecture, Room L1

SUNDAY 17th May

- 9.00 - 12.00 Workshops.
 1. Garden history
 2. Alpine & specialist plants
 3. Cut flowers and foliage production
 4. Amenity Horticulture
 5. Fruit and Vegetable Horticulture
 6. Other
- 12.00 - 1.00 Lunch — Bryant Hall
- 1.00 - 4.30 Field trips
- 4.30 - 5.30 Happy hour
- 6.00 - 7.00 Dinner

MONDAY 18th May

- 9.00 - 10.00 Concept of the Hamilton Gardens
- 10.30 - 12.30 Tour of Hamilton Gardens
- 12.30 — Lunch at Hamilton Gardens & Farewell

BOOKING DETAILS

Accommodation is in single rooms in Bryant Hall. Meals, Meeting etc. are at Bryant Hall except where advised and all attending are required to pay registration fee whether staying in or out.

Final date for registering 12th April 1987.

CONFERENCE FEE

Includes incidental expenses, morning and afternoon teas, bus/boat on Saturday, workshops and tour on Sunday.	\$60
Welcome and Dinner, Friday 15th May Presentation of Diplomas and Certificates to graduates. A display of books, crafts etc. is arranged in the buttry.	\$15
Accommodation. Bed and Breakfast This is a charge payable on arrival to Bryant Hall. Please indicate on booking form days required.	\$34 (per night)
Institute Dinner. Saturday 16th May Casual meals as arranged on booking form.	\$25

Charges include GST.

Informal	1. Golf 9 - 18 holes	
	2. Mystery Tour	Costs included
	3. River Cruise	in fee

Banks Lecture. Dr Laurie Barber.

'An Historical perspective of Horticulture in the Waikato' Dr Barber is a well known Waikato Historian. His address will span the development of Horticulture in the Waikato from pre-European settlement through to the present.

Sunday 17th May Workshops or Area of Interest

1. Garden history
2. Cut flower & foliage production
3. Alpine and specialist plants
4. Amenity horticulture
5. Fruit and vegetable horticulture
6. Other — specify.

The arranging of workshops will depend on interest ie. number registering.

Tours will be arranged around workshops so please specify first and second choices in both workshop and tour.

Note: It is essential to fill buses.

Retain this portion and
 record your booking details.
 Send **BOOKING FORM** duly
 completed with cheque (AGM
 conference/ac) to:

Conference Secretary
 F. Dorofaeff
 Box 4185
 HAMILTON

BOOKING FORM

Name
 Block letters Mr/Mrs/Miss

Address

CONFERENCE FEE \$60
 Friday 15th May
 Lunch \$10
 Dinner \$15
 Accom. required
 Please tick

CONFERENCE FEE \$60
 Friday 15th May
 Lunch \$10
 Dinner \$15
 Accom. required
 Please tick

Saturday 16th May
 Lunch \$10
 Dinner \$25
 Accom. required
 Please tick
 Informal
 List preferences
 1, 2, 3, etc.

Saturday 16th May
 Lunch \$10
 Dinner \$25
 Accom. required
 Please tick
 Informal

Sunday 17th May
 Area of interest
 List preferences
 1, 2, 3, etc.
 Lunch \$10
 Dinner \$14
 Accom. required
 Please tick

Sunday 17th May
 Area of interest No charge
 Informal

 Lunch \$10
 Dinner \$14
 Accom. required
 Please tick

Monday 18th May
 Lunch \$6
 Total sent _____

Monday 18th May
 Lunch \$6
 Total enclosed _____

Note: Cross out meals not required ie. Monday.



GROWING RARE AND ENDANGERED PLANTS

From the: *Otago District Council Newsletter*
October 1986.

During the Banks Lecture David Givan referred to the need for a Noah's Ark approach to save endangered plants from extinction. We have responded by forming a group of Otago R.N.Z.I.H. members willing to grow endangered plants.

We hope we can make a positive contribution by:-

1. Keeping basic records of the plants and those growing them - Alison Evans has agreed to start this register.
2. Because the plants will be grown in a variety of micro-climates by several different growers their chances of survival are increased.
3. Involving our members in doing something practical for plant conservation.

STARTING OFF

We obtained a collection of endangered New Zealand native plants from Mr Graeme Paterson of Timaru by buying six plants of each of the following at \$2.50 per plant. We hope to place all these plants:

PLANTS

Aciphylla traversii
Carex elingamita
Carmichaelia appressa
Chordospartium stevensonii
Cotula rotundata
Cotula calcarea
Hebe albicans
Hebe speciosa
Helichrysum dimorphum
Teucrium parviflorum
Pittosporum michiei
Pseudopanax ferox
Myosotis colensoi
Gunnera hamiltonii

All plants come with documentation on their origin, propagation and subsequent distribution copies go with each plant.

A CASE HISTORY IN HEBE

Hebe colensoi var. *glauca*

by Derrick Rooney

Hebe colensoi var. *glauca* is a small, very attractive, free-flowering native shrub which has become quite popular in New Zealand in recent years and is now being propagated by several nurseries.

A plant of unknown origin, *Hebe colensoi* 'Glaucø' has apparently been cultivated in Britain for a good many years, as it was listed in Hilliers nursery catalogue as long ago as 1927, and may have been grown there for more than 100 years. Though its continued popularity for so long a time leaves no room for doubt about its quality as a garden plant, questions have been raised, it appears with justification, about the validity of its name.

The questions have been asked only recently because, oddly enough, the plant was not cultivated in New Zealand, as far as I can ascertain until it was imported from Britain in the 1970s. It is not described in the "Flora of New Zealand", and not mentioned in any published books dealing with the cultivation of New Zealand plants.

So what is it? An inspired guess, based on botanic-garden records, a search of the scientific literature on hebes, and conversations with hebe growers, might be that it is a hybrid, possibly natural but more likely of garden origin, which originated in England from seed sent there from New Zealand. Whatever the truth of this, one thing is certain: this plant has no valid claim to the name by which it has been known for many years.

The earliest mention of *Hebe colensoi* var. *glauca* that I have been able to find in New Zealand was in a paper read to the Philosophical Institute of Canterbury by Dr Leonard Cockayne and Dr H.H. Allan on December 2, 1925, and subsequently published in the Transactions of the New Zealand Institute (vol. 57, 1927, p. 28). *H. colensoi* var. *glauca*, they noted, was the name by which *Veronica glaucophylla* was known "in most nursery gardens". The Authors' "*Veronica glaucophylla*" was "a shrub Cockayne brought into his garden and used as a type".

They noted that Cockayne saw many similar shrubs growing in the same locality and habitat in the Craigieburn Range, in Central Canterbury, "but whether that type was a species or a hybrid we have not the least idea. Hebes of a similar character grow abundantly in the shrubland on the mountains near Hanmer but they form a polymorphic group. There are certainly present crosses between a glaucous-leaved hebe and *H. traversii*, but it cannot be said, with our present-day knowledge, that this plant is *Veronica glaucophylla*."

This may sound confusing, but bear in mind two things:

1. at that time *Hebe traversii* was a name used for plants in the *H. odora* group and the plant which now carries the name of Travers was known as "*Veronica leiophylla*"; and
2. in 1927 (as indeed is still the case in 1986) many hebes had not been studied properly in the field, and, while Cockayne and Allan were in the process of transferring the species into *Hebe* from older genus *Veronica*, they left in *Veronica* all the "species" which, in their opinion, required further study.

Cockayne and Allan placed "*Veronica glaucophylla*" next to "*V. darwiniana*", with the comment that "Cheeseman (in his "Manual of the New Zealand Flora", 1906) did not hesitate to unite all these glaucous-leaved hebes, together with *V. darwiniana*, into an aggregate species, but this procedure is an exact example of that artificial taxonomy which we decry."

That seems to put us in a botanical Scotch broth (or is it a Yorkshire pudding?)

Veronica darwiniana was a Colenso species, named in 1893 on the basis of specimens collected "on the hills in the interior" of Hawkes Bay. In her revision of the hebes for Allan's "Flora of New Zealand, Vol 1" (1961), Dr Lucy Moore noted that no specimens matching Colenso's *V. darwiniana* had been collected in recent times, and that Colenso's description was apparently based in part on South Island plants including the species now known as *Hebe glaucophylla*.

Back to 1928. Allan at that time (in "New Zealand Trees and Shrubs and How to Identify Them") lumped *Hebe glaucophylla* in with *H. rupicola*, a Nelson species - clearly an error. Resolving the confusion in her revision, Dr Moore restricted the name "glaucophylla" to the Canterbury-Marlborough plants with no leaf-bud sinus and with grey, pubescent stems and pubescent ovaries and capsules. She revived Hooker's 1864 epithet "colensoi" for the North Island species with glabrous branchlets and capsules, and a narrow leaf-bud sinus. She made no mention of a *Hebe colensoi* var. *glauca*.

All is not lost, however. Armed with these revisions we go back to the 1925 paper by Cockayne and Allan, and find that the reference to *Veronica colensoi* var. *glauca* of nursery gardens is of *V. glaucophylla* "or a near relative". Suddenly, we're a long way up the right garden path.

Insight blossoms when we find another Cockayne paper, dated 1929. Accepting his garden plant as the type specimen of *Hebe glaucophylla*, he comments: "A plant identical, or nearly so, is common in New Zealand gardens under the name *Veronica colensoi* var. *glauca* - a name given to it, but never published, by J.B. Armstrong nearly 50 years ago!" Apparently Armstrong's plant, or seed from it, was among a basket of hebes sent from the Christchurch Botanic Gardens, where he was a director.

According to information supplied by Mr L.J. Metcalf, a former curator of the Christchurch gardens, plants and seeds were

sent from Christchurch in the 1870s to many other gardens in New Zealand, and seeds were exchanged with leading gardens and botanical institutions overseas, including Kew Gardens, London.

The current *Hebe colensoi* 'Glauca' of horticulture may well have arisen from one of these seed lots. Mr Metcalf writes: "If seed of Armstrong's *v. colensoi* var. *glauca* was sent to England from the Christchurch Botanic Gardens it was very likely hybridised before it left the gardens, because when hebes are grown as a collection they hybridise quite freely. I believe that many English cultivars have arisen in this manner. Seeds from a garden collection of hebes have been sent overseas and have produced some interesting results when germinated."

Where does this leave us? Well, we now know that:

- * *Hebe colensoi* of some nurseries is in fact *H. glaucophylla*.
- * Some cultivated plants of *Hebe glaucophylla* are hybrids, possibly including hybrids with *H. pinguifolia* where the two grow in the same locality.
- * *Hebe pinguifolia* as described by Dr Moore has branchlets variously, though never closely and finely, pubescent, and has no sinus in the leaf-bud. It is a low, cushiony shrub seldom growing more than 30cm high.
- * *Hebe glaucophylla* has finely pubescent branchlets and no leaf-bud sinus, according to Dr Moore's description. It is a taller species, growing to 1m.
- * *Hebe colensoi* has glabrous branchlets and a narrow leaf-bud sinus. It grows about 60cm high, and has a distinctive horizontal branching habit.
- * *Hebe colensoi* 'Glauca' of commerce is low growing, and has finely pubescent branchlets, narrow glaucous leaves, and no leaf-bud sinus. Its leaves resemble those of *H. pinguifolia* in being slightly dishd, but are narrower. Its growth habit is slightly procumbent.

Clearly, *Hebe colensoi* 'Glauca' does not fit within the range of variation of any recognised New Zealand species, and when all these points are considered together it does not seem unreasonable to conclude that while *Hebe colensoi* 'Glauca' of commerce is probably not the original plant of Armstrong and Cockayne, it is very close to it, and may well be its direct offspring. The most likely parents are *H. glaucophylla* and *H. pinguifolia*.

What should we call it? That's the 64-dollar question.

Clearly, we can't go on labelling it "colensoi" or "colensoi var. Glauca," because *H. colensoi* is something quite different. We cannot call it "pinguifolia 'Glauca'" because it doesn't fit in that species, either.

Hebe 'Glauca' would be an appropriate name, but according to Mr Metcalf, who is keeper of the International Register of

Hebe cultivars, this name has already been used for two catalogued cultivars: *carnosula* 'Glauca' (Gauntlett, 1910); and *cupressoides* 'Glauca' (Treseder, Devon).

An option left open is to name the plant for one of the two famous New Zealand scientists and plantsmen who were probably associated with its origins. The name of J.B. Armstrong is well commemorated in *Hebe armstrongii*, one of New Zealand's rare wild species which is both widespread and popular in cultivation. Cockayne, also, is commemorated in a hebe species (*H. cockayneana*) but this is a little-known Nelson plant which is not in cultivation. A more adequate tribute to this great New Zealand botanist is long overdue in the genus hebe which he did so much to classify and popularise, and I propose that in future *Hebe colensoi* 'Glauca' of commerce be known as *Hebe* 'Leonard Cockayne', both to achieve this and to recognise the hybrid origin of a popular plant. The change of name would be doubly appropriate in view of the circumstantial evidence that the cultivar originated from seed collected in Christchurch, where Cockayne was based for much of his career as a scientist.

A coincidental sidelight is that the Christchurch Botanic Gardens, where the seed may have originated, was also instrumental in bringing the plant back to New Zealand from England. *Hebe* 'colensoi Glauca' was among 15 hebe cultivars imported by the gardens in 1974, when Mr Metcalf was curator.

STUDENT SECTION

EDITORIAL

After a late start to summer weather this season, the hot, dry days lately have been ideal for holidaying. Already the first month of 1987 is over but nevertheless it is still appropriate to wish everyone a happy and prosperous New Year.

I would like to extend a welcome to new student members and trust that you find this section of the magazine helpful. If you have any new ideas don't hesitate to drop a line to me.

To those who sat examinations, I hope the results were pleasing and will now enable you to prepare for the study ahead. Remember to support your local District Council events. These are planned for your benefit and your support means further interesting trips can be arranged.

The summer months bring about the maturing of many fruit and vegetables. Berryfruit and stonefruit make delicious fresh eating at this time of the year. The importance of shelter in the growing of these crops cannot be over-emphasised and in this Bulletin the article on the use of natural shelter demonstrates this fact. On the ornamental side, many floral displays are evident including many herbaceous perennials, summer annuals, roses, hydrangeas and fuchsias. Although we humans often don't like to plan too far ahead, many plants will already have begun the process of innate dormancy in readiness for the unfavourable season in the months ahead.

The warm summer season also brings about an increase in the abundance of fauna. The interaction of flora and fauna is ubiquitous in nature, but there are some examples more outstanding than others. Take for example the Monarch butterfly, *Danaus plexippus*, the adult form of which is prevalent from Spring through to Autumn. The Monarch, (or 'Wanderer' as it is otherwise known with regard to its migratory feats), is a native of North America and was first recorded in New Zealand in 1840. It is quite unique because the food supply for this beautiful creature is obtained solely through members of the Asclepiadaceae family, especially the swan plant or milkweed, *Asclepias fruticosa*. The distinctive creamy white, yellow and black striped larvae feed upon this plant. Indeed, the establishment of these plants in gardens throughout New Zealand has greatly increased the population and distribution of the Monarch. This is a classic example of a host-specific relationship.

I look forward to hearing from you in the months ahead.

Kind regards,

Nick Owers.

THE N.D.H. THESIS — A PERSONAL VIEW

by Graham Mackie

My thesis, entitled "The establishment of Native Plants in Northland" was completed in September 1985, and was the final task in my prerequisite requirement for attaining the National Diploma in Horticulture in Nursery Management.

The thesis covered aspects of a trial that was carried out to determine the optimum time for planting trees in Northland. It also delved into other related topics including:

- open ground versus containerised plants
- cultural aspects of native plants
- making recommendations concerning planting and maintenance of plants in this region.

In retrospect, I feel it was a very worthwhile exercise in personal application, but as the results indicated the content and presentation of this thesis leaves considerable room for improvement. It was difficult for me to theorise or rationalise basic ideas that I had about when, where and how to plant trees: I am a practical person who makes decisions concerning cultural matters when planting trees, or in the day to day running of my nursery, on nothing more substantial than a hunch or a feeling that a job needs doing.

This approach does not lend itself well to the particular demands required to write a thesis, or for that matter, to run an efficient, profitable business.

I don't profess to have a solution for like-minded people who may be embarking on an N.D.H. thesis to make it easier to convey ideas and feelings about plants into an orderly script that is able to be deciphered by the Examining Board.

I would like to drop a few hints that may help in getting started.

1. Be prepared for the worst; you will probably face at least three mental breakdowns in due course of completion of the thesis if my experience is any guide!! Be sure of your objectives and goals before you begin writing any final scripts.
2. If possible, set aside a regular time for study in a place where you will not be interrupted. The room should be light and airy with a good sized table to spread out books, pads, cups of coffee etc.
3. Keep the overall concept in mind. Don't allow insignificant details to become insurmountable hurdles that prevent you from crossing the winning post with completed script in hand. Move on when things become stale so that progress overall remains steady.
4. Yes - you will need to find a very special person who will

attempt to edit and type that jumble of notes and make the whole shibang a presentable document. GOOD LUCK.

THE STORY OF BEES *Apis mellifera* AND HONEY

(Taken from a New Zealand Honey Marketing Authority
Pamphlet)

PART TWO OF A TWO PART ARTICLE

WORKER BEES

These have stings at the end of their bodies which they use only in defence of the hive or to defend themselves. The sting is only 2.1mm long and is barbed like a fish hook, so that once the bee pushes it into a surface such as human skin, it is "hooked". In trying to pull the sting out the bee tears the sting away from its own body and thereby dies soon afterwards.

WORK

Work is the paramount duty of the worker bee from the time it is hatched. They provide their own air conditioning by fanning their wings at the entrance of the hive and inside of the combs to keep an even temperature in the summer. In winter, they cling together as a cluster keeping each other warm. Those bees nearest to the comb consume honey and convert it to heat and energy, slowly moving to the outside of the cluster, whilst those on the outside move inwards for food and to create warmth, thus maintaining a temperature of about 34 degrees celsius at all times. In hot weather, workers fly to a stream or pond to fetch water, which they bring back to the hive to help the cooling process.

NURSE BEES

These bees have to feed and look after the nursery where young larvae or baby bees are developing, thoroughly clean out brood cells in the wax frames ready to receive eggs from the queen, and store pollen and bee bread into the combs for later feeding. When they are three weeks old in the busy season of the year, when flowers and shrubs are secreting nectar, they go forth on flights to gather precious cargoes of nectar to turn into nature's sweetest and health-giving food, honey.

HONEY

Honey is still something of a mystery to the world's cleverest scientists, and though man has tried to copy the bee and make honey commercially, he has never succeeded. Chemists can tell us the composition of honey, but they have never been able to copy it exactly. Whilst it is too involved to describe to you in details the process by which bees make honey, suffice it is to say that the workers scour the paddocks and plains visiting the flowers from each of which they gather minute drops of nectar through their long seven-pronged tongue. The nectar is stored in a special honey sac in the bee's body and taken back to the hive where other waiting bees store the nectar to ripen in their wonderful wax six sided cells. Each cell slopes slightly backwards to help retain the liquid honey, and has walls only .07mm thick. When nectar is plentiful, the bees make every effort to gather as much as possible for they know that the time will arrive when supplies are scarce. In eight weeks of gathering nectar a single worker bee collects only enough to make one teaspoonful of honey! Many workers fly so many trips to the flowers that their wings become frayed and they can no longer be airborne. In fact, they work themselves to death.

Honey is the most important function of the bee from the food point of view in producing nature's finest sweet, but we must always remember that their other great service to mankind is pollination. In gathering pollen from the flowers they fertilise and cross-fertilise the stigma of the flowers thus ensuring fertile seeds which will grow next year. Whilst other insects perform a pollination service, it must be emphasised that without bees there would not be sufficient food for humans to eat because pollination would not be sufficient to ensure adequate crops.

New Zealand honey is considered to be among the best in the world. On the world market it commands a higher price than any other imported honey, such is its excellence of flavour and texture.

Honey varies in colour from white (from pohutukawa, *Metrosideros excelsa*, flowers, thistle, *Cirsium* spp., or clover, *Trifolium* spp.) to dark amber (as from manuka, *Leptospermum scoparium*). When first extracted from the comb by the beekeeper it is liquid and runny. By a natural process the honey hardens, although treatment by controlled heat will make honey stay the consistency of thick cream. If the honey in your cupboard is hard and you would like it to be liquid, stand the jar in water heated to approximately 66 degrees celsius. Thick or thin, liquid or solid, honey is still the same wonderful food. Some people prefer honey in the comb just as the bees store it in their hive, and this is called "comb honey". For ease of application as a spread, most honey is 'extracted' from the combs by the beekeeper.

HONEY AS A FOOD

It is not only pleasant and delightful to eat, but many medical authorities claim it has properties contributing to health and energy. It is assimilated into the bloodstream very quickly and can be digested with ease.

BEE SWAX

This is produced by worker bees after eating large quantities of honey. Wax develops on the abdomen or stomach of the bees as little plates. These plates or segments are scraped off with her legs, chewed into soft pellets and used to make perfect six-sided honey comb cells.

BEEES ARE CLEAN

Bees do not forage from decaying matter as do wasps. If an intruder, such as a mouse, enters the hive they will sting it to death. Since it is too large for them to move bodily out of the hive, they cover the body with propolis (a gum gathered from tree buds) completely encasing the corpse like an Egyptian mummy so that it cannot smell or pollute the hive.

DRONES

Drones have no stings and cannot feed themselves, and are fed by workers. When winter approaches and there is no longer any use for drones to mate with a virgin queen, the workers bite off the male's wings and drag the drones outside of the hive to die. Otherwise, the drones would consume valuable food in the colder weather and reduce the possibility of the colony's survival. Here is an object lesson for us all. We must work to eat.

FLORAL SOURCE

By careful examination, expert honey graders can tell the exact flowers from which the honey was gathered and the container can be labelled 'Buttercup', 'Rewa Rewa', 'White Clover' or the particular source.

BEEKEEPERS

In 1984 there were over 6,800 beekeepers in New Zealand who kept 277,000 colonies producing 6,500 tonnes of honey annually. If there are 60,000 bees in each colony what is the total number of "domesticated" bees? How many kilos of honey is there in 6,500 tonnes? If you can work out this sum, you could find the average yield of honey from each hive.

SHELTER FOR HORTICULTURAL CROPS

REQUIREMENTS AND ESTABLISHMENT

(Taken from Ministry of Agriculture & Fisheries Ag Link Series)

The information given applies particularly to Canterbury but with suitable adjustments it has nation-wide application.

Shelter is essential for horticultural crops. As the value of the crop increases, the need for wind protection increases. Reasonable wind protection is usually provided for sensitive crops such as pipfruit, stonefruit and berryfruit, but the productivity of many other crops will also benefit from effective shelter.

To be of value, an effective shelter belt must more than compensate for both the production lost from the space occupied by the shelter, and the cost of establishing and maintaining that shelter.

THE NEED FOR SHELTER

Wind can directly, or indirectly, damage plants.

DIRECT DAMAGE

Mechanical damage caused to stems, leaves, flowers or fruit is by far the most significant in terms of growth and yield reduction, and lowering of the quality of horticultural produce. In addition to the uprooting of plants and limb breakage, continual abrasion decreases fruit size and increases the incidence of russetting and disease. The life of polythene structures is also prolonged by reducing wind, overcoming the abrasion which occurs where the film is in contact with the supporting structure.

INDIRECT DAMAGE

Evapotranspiration rate: Wind not only increases the loss of water from the soil necessitating more frequent irrigation, but because the plant is placed under moisture stress, the stomata close and the rate of photosynthesis is lowered, reducing plant growth and subsequent yields.

Cooling effect of wind: Low temperatures during blossoming retard bud growth and restrict the growth of the pollen tube, preventing fertilisation. In addition, cool winds depress bee activity; bees prefer to work in warm conditions and travel further in light winds. The warmer conditions created by adequate shelter prolong the growing season, and crops are often earlier. There are potential fuel savings with heated glasshouses if they are suitably sheltered, because cool winds remove much of the heat produced.

Other factors: With suitable shelter, soil erosion is reduced, sprinkler irrigation is more effective, and the efficiency and time available for spraying is increased. Aesthetically, a well sheltered block provides a more pleasant working environment. A mixed shelter belt may also provide food for honey bees during periods when the crop is not flowering and provide sanctuary for predacious birds and insects.

DISADVANTAGES

Disadvantages of shelter are that insect pests may be harboured in the trees, and the shelter may be an alternate host for many of the crop diseases. The shelter will compete with the crop for water and nutrients, and crop growth may be checked by the retention of excessive moisture and the shading effect of the shelter. The cost of establishment and maintenance must also be considered.

However, the benefits of shelter on crop productivity far outweigh any disadvantages.

SHELTER DIMENSIONS

A good shelter belt requires adequate height, permeability and length.

Height: Wind reduction is directly proportional to the height of the shelter belt. A shelter belt deflects the wind upwards, causing a reduction of windspeed on the leeward side. The original windspeed develops again at a distance from the belt of about 40 times the height. (See Fig. 1)

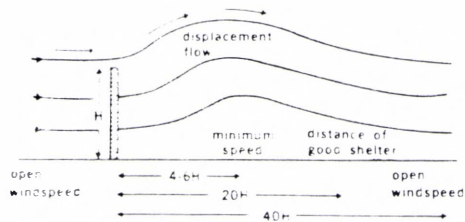


Fig. 1: Wind flow through a permeable shelter belt.

Good wind shelter is provided to a distance of 10-15 times the height. This is the best figure to use in estimating the protected area. For example, a shelter belt 10m high will give wind protection of 100m to 150m from the shelter belt, depending on the susceptibility of the crop.

Length: The length of the shelter belt is important in maintaining a reasonable degree of shelter when the wind veers from a direction normal to the belt. An increase in wind speed occurs round the ends of the shelter belt. (See Fig. 2)

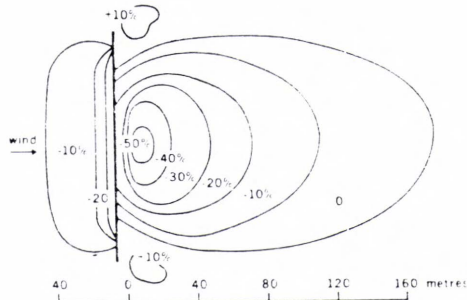


Fig 2 Reduction of wind by a shelter belt: 4.6 m high: Readings taken 3.7 m above ground

Where the wind strikes the shelter belt at right angles, the length should be 24 times the height.

PERMEABILITY

A shelter belt should act as a wind filter and not as a solid barrier. A permeability of 40-50% provides the smoothest airflow and maximum area of protection. Many existing shelter belts in Canterbury are too dense, and will not protect as large an area as a good permeable belt. Wind turbulence on the leeward side may occur, causing damage to the crop. (See Fig. 3)

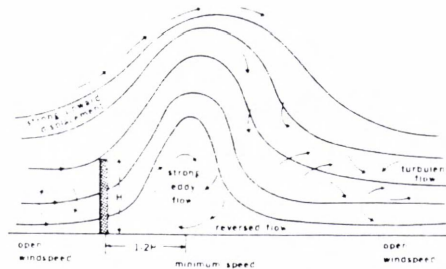


Fig. 3 Wind flow over a dense barrier with little permeability

The desired density can be obtained by:

- a) Selecting trees of low natural density, for example, eucalypts, *Eucalyptus* spp. and poplars, *Populus* spp.
- b) Increasing the spacing between trees.
- c) Increasing or decreasing the number of rows in trees in a windbreak.
- d) Silviculture - pruning, trimming and topping.
- e) Trimming may have to be done more than once a year to maintain the desired permeability.

The shelter must be continuous. If spaces exist either at the base or along the length of the shelter, the wind will funnel through with increased speed, so there is the likelihood of greater damage.

Some ventilation is required however, especially for wind pollinated crops such as walnuts, *Juglans* spp., and hazels, *Corylus* spp. Ventilation reduces humidity, which may otherwise increase the incidence of fungal disease, and reduces the risk of frost damage.

With established orchard trees, that portion of wind deflected over the shelter belt tends to be retained at the height of the orchard trees, effectively providing mutual protection. This highlights the need for some air flow below the trees. A dense shelter belt is only justified if it is necessary to prevent cold air draining into the orchard which would pond among the trees and increase the risk of frost damage.

SHELTER SITING

The siting of a shelter belt is determined primarily by the prevailing winds and the type of wind experienced. In Canterbury, easterly winds prevail in late spring and summer, and south-westerlies in winter.

The easterly, although not a strong wind, has a cooling effect. Shelter should be low to prevent shading. Evergreen shelter from the north-west should be broken, consisting of large, wide-spread trees away from the crop, to break the force of the intermittent nor'wester. Dense shelter would cause turbulence and too much shading.

Shelter from south-westerlies should be high, close to crop, of the right permeability and evergreen. Shading will not be a problem.

SUMMARY OF REQUIREMENTS

To gain the greatest benefit from shelter, forward planning is essential.

Windbreaks should be sited, as near as possible, directly across the harmful wind to give maximum protection. The recommended interval between windbreaks should not exceed 15 times the ultimate height of the windward shelter.

Windbreaks should be as long as possible and continuous. Gaps must be avoided.

Windbreaks established alongside power or telephone lines should be at least 6m from the line on the downward side, and at least 40m away from high voltage transmission lines.

Windbreaks should be at least 4m from water races to allow easy access for cleaning.

Windbreaks should be both functional and aesthetically pleasing. Compromises may be necessary between the need for shelter and, for example, the retention of pleasing views. The shelter, where possible, should harmonise with the existing features of the landscape.

SHELTER DESIGN

Shelter establishment nearly always involves a certain amount of land loss. Improper design can increase land loss by causing shading, frost pockets and competition by the shelter trees with the crop for water and nutrients.

For small areas (up to 2ha) peripheral shelter only may be enough. Such shelter should use larger trees that will protect the whole crop without competing for light, water and nutrients.

For larger plantings, internal windbreaks, that can be trimmed and topped, will be necessary. Less demanding and vigorous shelter trees should be used. If trees are kept to 10m, belts can be spaced 100-150m apart to give excellent shelter with the minimum use of land.

Deciduous shelterbelts minimise shade in winter and are more resistant to winter gales than evergreens, because more air passes through them when the leaves have fallen. However, in order to protect the vulnerable blossoming period of the tree crops, they must leaf out early enough to protect blossoms.

Single row shelterbelts minimise land loss, but require a high standard of planting and after-care to ensure uniformity of height and density. Any tree failures must be immediately replaced.

However, in exposed areas, single row boundary shelter is subject to damage by windthrow. A second row of slower growing trees on the windward side of the shelter can greatly diminish this effect. Decreasing the density of the windbreak, either by using species of low natural density or silviculture increases stability.

Wider spacings between trees decreases density and ensures a larger, more balanced rooting pattern. Deep cultivation prior to planting improves stability on soils with a hard pan or compacted subsoil.

Stock-proof fences are essential; at no stage should stock have access to shelterbelts. To prevent stock from eating out the growing points and to allow the full and proper development of the shelter, the minimum distance from a fence to a row of trees is 2m; the recommended distance at least 2.5m. With a two row windbreak, the recommended spacing between rows is at least 2m.

SHELTER SPECIES

The ideal shelter species would be cheap, easy to establish fast growing to a desirable height, have a compact habit, be well anchored but without an excessive rootsprad, would maintain the desired density with the minimum of attention and would not harbour pests or diseases. Most species meet only a few of these shortcomings. Although much depends on personal preference the selection of trees should be made on the basis of what grows best in the local area, i.e., to suit local soils and climate.

PLANTING AND ESTABLISHMENT

Shelter belts should be established some years before the crop. If the shelter is to be effective, as much care must be taken in its establishment as with the crop.

The efficiency of a shelter belt depends on the uniformity of the established trees. A 100% survival rate is essential, together with continuity of height and growth rates.

Prior to planting, deep ripping is desirable, especially on soil types with compacted subsoils and hard pans, because it permits deeper rooting and greater stability. Fertilisers help the trees establish more quickly but must be well worked into the soil. The site must be free of weeds, especially perennials. Shelter trees suffer as much from weed competition as do horticultural crops. A broad spectrum residual herbicide should be applied before planting, either as a continuous strip or as spot applications around each individual planting position. In either case, the width of application should not be less than 1m.

Alternatively, trees can be planted through a polythene mulch. The initial cost is considerably greater than bare ground, but weed competition and desiccation are less likely to be a problem, and the rate of growth is often accelerated.

Planting is one of the most important operations in the establishment of shelter and warrants all the care and attention possible.

Good quality trees for windbreaks must be well hardened-off. Seedlings should have a good root to shoot ratio (in the order of 1:2 to 1:3). The root system should have a high percentage of young fibrous roots. The trees should be of a consistent size and quality.

If grass grub, *Costelytra zealandica*, or porina, *Wiseana cervinata*, are likely to be a problem, diazinon prills should be sprinkled in the planting hole before covering the roots with soil. Trickle irrigation is recommended, especially on lighter soils. It eliminates hand watering, helps ensure a 100% strike of trees, and reduces the time from planting to the establishment of an effective shelter.

SHELTER MANAGEMENT

Weed control: The first two years following planting are the most critical. Fast initial growth not only gives earlier shelter, but tends also to keep trees growing rapidly. Weeds will compete with the young trees, so regular herbicide sprays should be applied until the trees are established.

Approximately 70-80% weed control is considered necessary to provide satisfactory conditions for growth in new plantings. The chemical treatment chosen will depend on the tolerance of the tree species to the given chemical, the weed species, soil texture and available equipment. The safety of herbicide applications will depend upon:

- a) Ensuring herbicides are not applied to foliage.
- b) The chemical remains on the soil surface above the root zone of the trees.
- c) The chemical is applied at the exact recommended rate.

Paraquat, at 1.1-2.2kg active ingredient/ha will control annual weeds and suppress the top growth of perennial weeds with repeated application. It has, however, no residual effect. When mixed with simazine, seasonal control of annual weeds is obtained, if the land treated is not cultivated. Alternative chemicals are dichlobenil, linuron or trifluralin.

Silviculture: Trimming should start when the trees are 3m high and/or the belt is 1m thick, to keep the belt narrow, porous and windfirm, prevent the base opening up and upgrade the timber in species from which a timber crop may eventually be taken. It is desirable to trim little and often; it is easier, quicker and reduces the likelihood of die-back.

If trees have been double planted to obtain quick shelter, each alternate tree must be removed once they have reached 5-10m high, allowing better development of the remaining trees and good permeability of the final shelter belt.

The horizontal root spread of shelter trees can be restricted by deep cultivation using a ripper alongside the shelter belt. This should be done every one or two years, alternately on each side.

Old shelter belts become a liability and should be replaced as soon as possible.

ARTIFICIAL SHELTER

An alternative to live shelter is a windbreak of woven plastic mesh. The material is easy to erect to full height, occupies little space, does not compete with the crop for either nutrients or light and does not harbour pests or diseases.

A 45-50% permeable mesh is desirable; at 60% permeability there is no significant decrease in wind velocity, but at 30-35% permeability excessive turbulence is created. Because plastic mesh offers little streamline interference, wind flow through the material is uniform, and provides the largest area of protection.

HEBE AS GARDEN PLANTS

In the New Zealand flora there are about eighty species of *Hebe* and most are endemic to New Zealand; they belong to the snap-dragon family Scrophulariaceae. The native species grows throughout the country from sea level to sub-alpine regions. Different species occur in different areas and the species exhibit a great variety of forms extending from small trees and woody shrubs to cushion-like plants. Leaves vary according to species from 10cm to scale-like on plants which have the appearance of dwarf conifers. Hybridism is common between some species and some hybridising has been carried out in England and France.

Garden Use

As garden plants, hebes can be divided into three groups; flowering, attractive foliage and whipcords. Many hebes will tolerate a wide range of soils and situations, thriving in good well-drained soil. They are very suitable for exposed positions and will tolerate salt winds; some are frost tender. They are excellent plants to use in rock, pebble and bark gardens; larger forms are good shrub border plants. Many good cultivars have been collected as chance hybrids in the wild and in gardens.

Cultivation

Cultivars are readily propagated from semi-ripe tip cuttings of new seasons growth. Species will grow readily from seed collected and sown as soon as it is ripe. Seed collected from hybrids will not come true. Many species will grow for years without any attention but to maintain a neat bushy habit, flowering forms should be pruned immediately after flowering; shorten the flowering wood to approximately one third of its length using secateurs rather than trimming with hedge clippers. Some cultivars will respond well to clipping and will make a low hedge 1 - 1.5m, e.g. Lavender Lace and *H. speciosa* mauve hybrid. On acid soils they will benefit from a light application of dolomite lime in late autumn. In spring, apply a light dressing (50g/m²) of general purpose fertiliser. After five or six years some of the larger forms become woody and should be replaced. A well-drained, open sunny situation with good air circulation is required by hebes grown for their foliage. These conditions will also reduce infections of fungous diseases on susceptible species such as *H. carnea* and *H. speciosa* hybrids.

Downy mildew is prevalent during wet weather in spring - use Maneb or Zineb at 3 weekly intervals. Septoria leaf spot infects *H. speciosa* during wet humid weather - spray with Benlate or Saprol. Caterpillar and scale can be controlled with Carbaryl or Orthene combined with fungicides.

Auckland Regional Authority

Regional Parks Department

A RANGE OF HEBE CULTIVARS AVAILABLE			
FLOWERING SPECIES & CULTIVARS		FOLIAGE SPECIES & CULTIVARS	
	Flowering Time	Flower Colour	Foliage Colour
Large Over 1m	H. 'Lavender Lace'	pale lavender	<i>H. dieffenbachii</i>
	H. 'Lewisii'	white with mauve base	
	<i>H. x speciosa</i> (mauve)	mauve	
Medium .5-1m	H. 'Blue Gem'	blue	<i>H. albicans</i>
	H. 'Inspiration'	deep lav	H. 'MacEwanii'
	H. 'Midsummer Beauty'	pale mauve	<i>H. venustula</i>
	<i>H. townsonii</i>	white	H. 'Waikiki'
	H. 'Wairua Beauty'	mauve tint	
Dwarf up to .5m	<i>H. diosmifolia</i>	white	H. 'Sutherlandii'
	H. 'Hartii'	pale mauve	H. 'Waireka'

INTERNATIONAL PLANT PROPAGATORS SOCIETY (N.Z. REGION)

STUDENT PROJECT AWARD

The New Zealand Region of the IPPS has established an award which is designed to encourage young people to carry out research projects in the fields of plant propagation and production. The award is open to people aged 28 years or under who are actively involved in plant propagation and/or production either as students or as nursery workers. Applicants do not have to be IPPS members.

THE AWARD

The winner of the award will be invited to an Annual Conference of the International Plant Propagators Society with all travel, accommodation and conference expenses paid. The awardee will be required to present a paper based on their work to the conference and will be presented with a scroll commemorating the award.

THE RESEARCH PROJECT

Award applications should be submitted in the form of a written report and can be based on:

1. Research undertaken as part of a formal educational course
or
2. Research undertaken through a place of work in the industry.

The project should be relevant to the general field of plant propagation and production. Research projects in allied subjects such as pest and disease control will be suitable only if their relevance to the field of plant propagation/production is clearly established. The project need not be of an advanced nature; comparisons of commercially available propagation trays for example would be regarded as satisfactory to the aims of the award.

ADMINISTRATION OF THE AWARD

The award is to be administered by a Student Award Committee consisting of three IPPS members of whom a least one is a staff member of an educational institution and one a grower.

Entries for the first award close on 1 May 1987. Further details and application forms can be obtained from:

Mike Oates,
Department of Horticulture
NZTCI
Private Bag
LOWER HUTT.

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