

NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 25

SEPTEMBER 1991



New Zealand Botanical Society

President: Dr Eric Godley
Secretary/Treasurer: Anthony Wright
Committee: Sarah Beadel, Wendy Nelson, Colin Webb, Carol West
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Private Bag
AUCKLAND 1

Subscriptions

The 1991 ordinary and institutional subs are \$12. The 1991 student sub, available to full-time students, is \$6.

Back issues of the *Newsletter* are available at \$2.50 each - from Number 1 (August 1985) to Number 24 (June 1991). Since 1986 the *Newsletter* has appeared quarterly in March, June, September and December.

New subscriptions are always welcome and these, together with back issue orders, should be sent to the Secretary/Treasurer (address above).

Subscriptions are due by 28 February of each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next year's subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

Deadline for next issue

The deadline for the December 1991 issue (Number 26) is 26 November 1991.

Please forward contributions to:
Dr Wendy Nelson, Editor
NZ Botanical Society Newsletter
C/- National Museum
PO Box 467
WELLINGTON

Cover Illustration

Pseudopanax gilliesii (Araliaceae). Drawn by Lesley Alexander from specimens collected on the northern side of the Whangaroa Harbour. Lesley is completing a BA Hons Graphic Design at Middlesex Polytechnic, England, specialising in scientific illustration. The four year course teaches medical, botanical and zoological illustration, and Lesley recently completed a 12 week period in New Zealand gaining work experience - 6 weeks at Auckland Museum and 6 weeks at DSIR Plant Protection (Mt Albert). Scale bar 1 cm. See article on p. 10 (Anthony Wright).

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N E W S L E T T E R
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CONTENTS

News

New Zealand Botanical Society

Joint NZBS - ASS Conference Final Circular	2
Notice of General Meeting	2
Call for nominations	2

Regional Bot Soc News

Auckland	2
Rotorua	3
Wanganui	3
Wellington	4
Nelson	4
Otago	5
Wakatipu	5

Other News

Hinewai Reserve on Banks Peninsula - A Major Expansion	6
Loder Cup 1991	6
Changes at Auckland Museum	7
Part-time assistant herbarium curator required	7

Notes and Reports

Current Research

Whence "Ti Tawhiti"?	7
Study of Vegetation Changes on Grazing Leases in South Westland	10

Fieldwork

Population counts for <i>Pseudopanax gilliesii</i>	10
--	----

Biography

Biographical Notes (3): H. J. & G. A. Matthews	11
--	----

Publications

Vegetation of New Zealand	13
Horticulture in New Zealand	13
NZ Orchids	14
ENVIRONZ	14
Checklist of <i>Phormium</i> Cultivars	14

Announcements

Wellington Botanical Society Jubilee Award	15
--	----

Forthcoming Meetings/Conferences

People, Plants and Conservation - The Role of Botanic Gardens into the 21st Century	16
Southern Temperate Ecosystems: Origin and Diversification	16

Conference/Meeting Reviews

Threatened Plant Symposium	17
Australasian Society for Phycology and Aquatic Botany	20

Miscellaneous

Jersey Cabbages	20
---------------------------	----

Letters to the Editor

Death By Any Other Name	20
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NEWS

New Zealand Botanical Society News

■ **Joint NZBS - ASBS Conference Final Circular**

The Final Circular containing a Registration Form for the Joint New Zealand Botanical Society / Australian Systematic Botany Society Conference titled "Systematic and Ecological Relationships of South Pacific Floras" has now been published. The Conference and associated events will be held at the University of Auckland from 22-27 November 1991.

A full programme of scientific and social events and field trips is offered. Members wishing to receive a copy of the Final Circular with detailed information on the programme should write to the NZBS Secretary. Registrations close 30 September 1991.

■ **Notice of General Meeting**

Notice is hereby given of a General Meeting of the members of the New Zealand Botanical Society to be held at 4 pm on Tuesday 26 November 1991 at the University of Auckland Conference Centre, 22 Symonds Street, Auckland.

As yet there are no items for an Agenda, but this meeting will provide the first opportunity since the Society's Inaugural General Meeting in November 1988 for review of progress to date and discussion of future directions.

■ **Call for nominations**

Nominations are called for the following positions of Officers and Committee of the New Zealand Botanical Society for 1992:

- President
- Secretary/Treasurer
- 3 Committee Members.

Nominations opened 1 September 1991 and close on 20 November 1991. Nominations shall be made in writing to the Secretary, and shall be signed by the Proposer, the Seconder, and by the Nominee to indicate their acceptance of nomination.

If necessary, ballot papers for a postal election will be circulated with your December Newsletter.

Anthony Wright, Secretary, New Zealand Botanical Society, c/- Auckland Institute and Museum, Private Bay, Auckland 1.

Regional Bot Soc News

■ **Auckland Botanical Society**

Programme, mid-September to December 1991:

Wednesday 2 October: Workshop of monocot families.

Saturday 19 October: Mt Donald McLean to Whatipu, Waitakere Range (joint Auckland, Waikato and Rotorua Bot. Soc. field trip).

Wednesday 6 November: Rangitoto Island (Speaker - Andrea Julian).

Tuesday 26 November: Auck. Bot. Soc. hosts a social evening/dinner for Aust. Systematics Society/NZ Bot. Soc. conference participants.

Sunday 24 November: Rangitoto Island or repeat of 19 October field trip to Mt Donald McLean/Whatipu, with Conference participants.

Sandra Jones, Secretary, Auckland Botanical Society, 14 Park Road, Titirangi, Auckland 7 (phone 09 817-6102)

■ Rotorua Botanical Society

Rot.Bot.Soc. had a good turnout for the Easter trip to Te Araroa near East Cape. A diverse range of sites was botanised from sand dunes, coastal wetlands, lowland to sub-montane forest (didn't reach the top) to the East Cape cliffs supporting *Plantago spathulata* subsp. *picta*.

Our April trip took us on an absolutely glorious, calm day across to Motiti Island where remnant coastal vegetation was botanised. We crossed the natural causeway at low tide to the small Taumaihi Island and the fit ones scrambled through the flax and shrubs to be rewarded by finding *Euphorbia glauca*.

In May John Nicholls led a trip to podocarp forest, beech pockets, regenerating forest and scrub, and frost flats on the western margin of Whirinaki Conservation Park. After completing a species list for the frost flat the group moved through the succession of shrubland to forest. A disturbing observation was the damage caused by removal of totara for cultural use and the ongoing effect this had on the surrounding forest (wind throw etc).

The Rot.Bot.Soc. A.G.M. was held in June with the election of Barry Spring-Rice as president, Sarah Beadel as secretary, Beverley Clarkson treasurer, Bruce Clarkson Newsletter editor and other committee members John Nicholls, Chris Ecroyd, Dale Williams, Willie Shaw, Mark Smale and Robyn Irving.

A very successful fern workshop was led by John Smith-Dodsworth in July at the FRI herbarium fern identification using keys in John's book followed by a slide presentation.

Our most recent trip was to the Carrie Gibbons Reserve, Pongakawa by Lin Gibbons with assistance from his brother Frank. This was an interesting patch of lowland forest which hasn't been grazed for years and therefore has a thick ground cover and seedling regrowth. This was a relaxing day particularly enjoyed by 3 little girls who did a lot of walking in the bush, then lots of playing in puddles and sand.

Rot.Bot.Soc. Newsletter No.22 articles:

"The 1991 Annual Expedition: Western Ruahine Range & Environs" - Mark Smale.

"Torehape Field Trip" - Robyn Irving.

"Fieldtrip to Lake Rotomahana" - Clive Howard-Williams

"Forest Composition Changes Over 25 Years on Mt Pureora" - Dale S. Williams

"Further Plant Records from the Gisborne Land District" - Bruce & Beverley Clarkson.

"Lowland Ribbonwood : A Postscript" - John Nicholls.

The book "Botany of Rotorua" - Bruce D. Clarkson, Mark C. Smale, Chris E. Ecroyd (compilers) is now completed and available. This is an attractive and informative publication that all contributors and Rotorua Botanical Society can feel very proud of. Its contents come under the chapter headings of Physical Factors; History of the Vegetation; Native Forest; Exotic Forest; Pasture; Naturalised Vegetation of Roadsides, Waste Places and Urban Areas; Agnatic Vegetation; Lakeshore Vegetation; Mires; Vegetation of Thermal Areas; Micro-algae of Thermal Areas; A Century of Change on Mt Tarawera; Threatened and Local Native Plants; Coastal Plants Inland; Mosses and Liverworts; Fungi; Traditional Uses of Wild Plants.

For further information contact: Rot.Bot.Soc. Publications Officer, F.R.I., Private Bag 3020, Rotorua.
Contact for Rot.Bot.Soc.:

S. Beadel, Secretary R.B.S., Okere Road, R.D.4, Rotorua

■ Wanganui Museum Botanical Group

At the Annual General Meeting held on 2nd July 1991. The following were re-elected: President Ian Bell; Secretary Joan Lidell, 15 Moore Avenue, Wanganui.

Our meetings are held on the first Tuesday in the month starting at 7.30pm in the Regional Museum Classroom.

Coming events:

Sunday 29 September: Outing to Lake Rotoiti, a local hill-top lake.

Tuesday 1st October: Talk by Dr Margot Forde from "Grasslands DSIR" on "Genetic Conservation".

Saturday 2 November: An afternoon visiting some members' gardens.

Tuesday 5 November: Talk by John Barkla, DoC, on Stewart Island.

Weekend 9-10 November: At Taupo to visit some interesting places including Iwitahi.

Tuesday 3 December: Xmas party with botanical entertainment.

Saturday 7 December: Join Wellington Bot. Soc. for a day trip to the Makeno Reserve in the upper Rangitikei River Valley OR Weekend December 6-9 - at same venue.

Alf King, 180 No.2 Line, RD 2, Wanganui

■ Wellington Botanical Society

Programme: September - November

Saturday 7 September: Field Trip - Hector Library, National Museum. Leader - Patrick Brownsey.

Monday 16 September: "Tundra to Tropics; Wetlands to Waterless Lands" - Gill Rapson.

Saturday 5 October: Field Trip - Otaki Forks - Waiotauru. Leader - Margaret Aitken.

Monday 21 October: "Japan - some impressions of vegetation and some thoughts on conservation" - Paul Blaschke.

Saturday 2 November: Field Trip - Te Kopahau Stream. Leader - Barbara Mitcalfe.

Monday 18 November: "Wellington Botanic Garden" - Mike Oates.

Friday-Monday 6-9 December: Field Trip - Makino and Te Rangipai Scenic Reserves. Leader - Colin Ogle.

Carol West, Secretary, 9 Mamari Street, Rongotai, Wellington 3 (04) 878-398

■ Nelson Botanical Society

Winter is a time to keep closer to home to make the most of the short days. The highlights of the last few months have been a ferns course, a visit to local gardens and visits to coastal areas.

The ferns course was preceded by an evening talk in June by Bill and Nancy Malcolm who gave an introduction to the microscopic aspects of ferns and their classification in their inimitable way.

Over 20 people participated and learnt the rudiments of fern identification in the field. The first day course was held at the Brook Reservoir where they were introduced to about 20 species in their natural habitats. On the second day the trip to Hira Forest encompassed an area containing over 60 species covering almost the whole range of the important groups. By the end of the second day in the field several of the course participants were fully conversant with the fern key and course booklet.

The visit to Eileen Heatherbell in June provided a rare opportunity to see a wide range of rare plants from all over the country. They included such locals as *Pittosporum dallii* from the Cobb and several species of broom including *Carmichaelia williamsii*, from the North Island, (in full flower); the small *C. monroi* and *C. enysii* and; the Marlborough brooms, *Chordospartium stevensonii*, *C. muritai* and *Notospartium carmichaeliae*. The fragrant *Pittosporum pimeleoides* proved a particular favourite and *Rubus parvus* provided ground cover under a mixed grove of trees.

The place is beautifully landscaped with several rockeries - one with a magnificent 6-ton block of marble as a focal point. Rockery plants included a wide range of local alpine.

Many plants were from far afield. Among them were *Pisonia brunoniana*, *Elatostema rugosum*, *Streblus banksii* and *Cordylina pumilio* from the North Island, two from the Chatham Islands - *Pseudopanax chathamicus* and *Meliclytus chathamicus*, and *Myoporum laetum* var. *decumbens*, from the Poor Knights. *Myoporum debile* was doing well and has to be continually cut back. A special treasure was *Elingamita johnsonii* from the Three Kings.

The highlight of the Rabbit Island trip in May was the Hunter-Brown picnic area. This is dominated by a young reverting stand of totara (*Podocarpus totara*) on a former pa site. It has a dense and diverse understorey of plants with bird carried seed such as barberry (*Berberis glaucophylla*), red matipo (*Myrsine australis*), five finger (*Pseudopanax arboreus*) and the odd matai (*Prumnopitys taxifolia*). Only 3 ferns were found, *Asplenium flaccidum*, *Phymatosorus diversifolius* and *Pyrrosia eleagnifolia*, all growing close together. Along the shore there were numerous swamp ribbonwood (*Plagianthus divaricatus*) and close to the road edge the uncommon native grass (*Zoysia minima*).

The July trip to Hori Bay proved particularly rich in ferns and for those who attended the ferns course the previous week it provided many opportunities to revise.

On the uphill track we passed a lonely karaka (*Corynocarpus laevigatus*), a sure sign of past maori use of the area. At the edge of the taller kanuka (*Kunzea ericoides*) we confronted a whole series of fern hybrids.

Asplenium flaccidum was particularly abundant on the ground and appeared to be hybridising with *A. hookerianum*, *A. bulbiferum* and *A. polyodon*.

Further on, as expected, we encountered large patches of two tiny winter flowering orchids *Pterostylis alobula* and *Acianthus sinclairii*. Later Mike Crawford spotted *Dryomanthus adversus* up a pukatea (*Laurelia novae-zelandiae*).

Quite a few species were added to the list including hinau (*Elaeocarpus dentatus*, abundant as seedlings), karamu (*Coprosma lucida*, quite common in low scrub as seedlings) and *Dicksonia fibrosa*. After lunch we walked the shore to the sea arches and noted *Peperomia urvilleanum*, here near its southern limit, and two hot rock ferns (*Cheilanthes distans* and the recently described *Pellaea caldirupium*). Other typical coastal plants noted were *Linum monogynum*, taupata (*Coprosma repens*), and akeraho (*Olearia paniculata*).

Coming Field Trips:

September - Maitai Caves

October - Mistletoe Bay

Labour Weekend - Waima River

November - Scutellia Hunt Roding/Hackett

December - Mt Starvel

Graeme Jane, 136 Cleveland Terrace, Nelson

■ Otago Botanical Society

Thursday 12 September: Prof. Doug Campbell "From *Glossopteris* to Coconuts: Fossil plants of New Zealand in the Geology Department Museum". Demonstration and talk on material held in the Museum. In the University Geology Department (second building on the right through the old Archway Building, ie behind the Clocktower Building), 7.30pm.

Field Trips -

Saturday 14 September: Prof. GTS Baylis' garden. Geoff will give us a guided tour of his extremely interesting garden. Meet at 367 High Street, at 9.30am. The trip will disband about midday.

For the following two trips: Meeting place - Union Street (between Gt King and Cumberland Streets). Transport - Bring a car if you can, but there should be enough spaces for those without their own transport.

Saturday 12 October: Rabbit Island (in Blueskin Bay). Led by Christ Stewart, DoC. A short boat trip from Doctors Point. We will help remove some weeds, and then examine the excellent saltmarsh community. Meet in Union Street at 12.15pm. Bring plastic shopping bags, small axes and clippers.

Saturday 16 November: Mopanui - kanuka regeneration, upland shrubland, old pasture, historic dairy farms. Led by Jill Hamel and Brian Patrick. The trip will examine forest remnants and regenerating kanuka on a 300 acre block running from Mopanui trig down to Purakanui Railway Station. A short climb of 30 minutes from the road to Mopanui trig. Meet in Union Street at 1pm.

Dr J. Bastow Wilson, Botany Dept, Otago University, PO Box 56, Dunedin

■ Wakatipu Botanical Group

We have formed a Wakatipu Botanical Group in Queenstown after a very successful public meeting to gauge interest, in April. 23 people turned up and membership is now 37. Interest has remained high during the early meetings, held on the first Thursday each month. Plant identification with live material, short talks on botanical subjects and short slide shows have occupied these evenings so far. Our next meeting is on 8 August when Brian Rance is to talk on the flora of the sub antarctic islands.

Due to the time of the year field trips have been confined to Sunday afternoons (3) along local tracks. Even so two ferns *Hymenophyllum peltatum* and *Asplenium lyallii* have been added to our Wakatipu Lake flora list.

Early indications are that the group will thrive as there is much enthusiasm and a good age range. We would welcome any out-of-town botanists and others as guest speakers if they are coming this way or passing through at any time.

Neill Simpson, PO Box 478, Queenstown phone (03) 442-2035 (home) or (03) 442-7933 (work)

Other News

■ Hinewai Reserve on Banks Peninsula - A Major Expansion

The Maurice White Native Forest Trust has succeeded in purchasing 870 hectares of Otanerito Station for \$340,000, and will manage the land in conjunction with the adjacent Hinewai Reserve of 109 hectares which the Trust bought exactly 4 years ago, in 1987.

Otanerito came on the market after a commercial forestry proposal for the station fell through.

Hugh Wilson manages Hinewai Reserve, and comments that for the first time on Banks Peninsula a whole sequence of vegetation from 800m + summits almost to sea level would be conserved. This will represent the largest reserve in Canterbury outside the National Parks and Lewis Pass Scenic Reserve. Large stands of native vegetation remain, ranging from snow tussock and *Dracophyllum* down through montane forests of beech and podocarp/hardwood forest to lowland rainforest remnants, including some centuries old kahikatea. As well as regenerating kanuka and mixed hardwood forest, there are large areas of gorse from which browsing animals, fire and spray will be actively excluded. Several rare species of flora and fauna inhabit the reserved area, including *Celmisia mackaui* and the jewelled gecko *Heteropholis gemmeus*. The reserve will safeguard the type locality of many species collected by Raoul in 1840, such as *Chionochloa rigida*, *Brachyglottis lagopus*, *B.sciadophila*, *Coprosma robusta*, *Celmisia mackaui*, *Discaria toumatou*, *Elaeocarpus hookerianus*, *Griselinia littoralis*, *Gunnera monoica*, *Hebe lavaudiana*, *H. strictissima*, *Hoheria angustifolia*, *Lophomyrtus obcordata*, *Olearia avicenniaefolia*, *Raoulia subsericea*, etc. Some native bird species are well represented, especially bellbirds, brown creepers, woodpigeons, tomtits and riflemen. Also, several rare invertebrates are recorded.

The Trust was able to purchase this land by drawing on its own resources in combination with a \$125,000 Government contribution through the Native Forest Heritage Fund, donations from individuals and societies, and some very generous interest-free loans.

The current shortfall for the purchase stands at \$90,000. So fundraising continues. Anyone who would like to contribute may send donations to:

Maurice White Native Forest Trust
P O Box 29-203
Christchurch

with cheques made out to the Maurice White Native Forest Trust, or write for more information to the Trust, or to:

Hugh Wilson, Hinewai Reserve, RD 3, Akaroa

■ Loder Cup 1991

The Loder Cup for 1991 has been awarded to Mr Reg Janes, a long-standing member of Tauranga Branch of Forest and Bird and member of the National Council of RFBPS for 25 years. Mr Janes has made a valuable contribution to conservation of New Zealand native plants by encouraging young people to plant native trees and through conserving local areas of native forests. Mr Janes has supplied thousands of native trees to many groups for revegetation work.

The New Zealand Botanical Society was represented on the Loder Cup Committee for the first time this year. The existing members of the Loder Cup Committee welcomed the participation of NZ Botanical Society.

Carol West, NZBS representative on Loder Cup Committee

■ Changes at Auckland Museum

The Council of the Auckland Institute & Museum has decided to proceed with a major redevelopment of the Museum over the next five years. Museum President Bill Laxon describes the \$38.5 million project as an ambitious but essential one, which will guarantee the future of the Museum as a major local and national attraction.

A key part of the plan is to lease suitable storage space for the bulk of the collections away from the Museum. This will enable the entire rear section of the Museum to be redeveloped with a range of exciting, modern and highly interactive displays and attractions, some of which will be aimed specifically at children. The original 1929 building will be fully restored to be a "museum of a classical museum". The off-site storage facility will enable greatly improved care to be provided for the Museum's priceless collections which are currently suffering from chronic space shortages. It will also allow much better public access to these reserve collections (such as the herbarium) for education, study and research.

Developments of this magnitude require substantial organisational changes to the Museum. Curator of Botany, Anthony Wright, has been appointed leader of the Project Team responsible for all aspects of Collection Management and Planning for the entire holdings of the Museum. Anthony has also been appointed to the new position of Acting Manager of the Natural History Division of the Museum, with responsibility for staff and collections in the Botany, Conservation, Entomology, Geology, Land Vertebrates, Marine Biology and Marine Invertebrates Departments.

Although Anthony Wright continues as Curator of Botany, he will obviously be spending considerably less time in that role. The Museum will be providing additional staffing assistance to allow the Botany Department to continue to meet basic functions such as loans and specimen processing. The Museum regrets that there are likely to be delays in other areas of botanical service over the next 12-18 months.

Stuart Park, Director, Auckland Institute & Museum, Private Bag, Auckland 1

■ Part-time assistant herbarium curator required

The Auckland Institute and Museum Herbarium (AK) has a vacancy for an assistant curator to service aspects of public enquiries, specimen preparation and collection management as required by the Curator.

The appointee will require a reasonable knowledge of the New Zealand flora, and preferably some skills and experience in aspects of herbarium management and electronic databasing.

The position is temporary, for approximately a twelve month period (with the possibility of an extension to eighteen months). Up to a maximum of 25 hours work per week is offered, to be performed on a regular daily basis from Monday to Friday. Remuneration will be pro rata within the range \$37,067 - \$43,103 per annum.

Applications from suitably qualified people are now invited. Please forward a letter of application and curriculum vitae to the undersigned by 27 September 1991. Auckland Museum is an Equal Employment Opportunity Employer.

Anthony Wright, Curator of Botany, Auckland Institute & Museum, Private Bag, Auckland 1

NOTES AND REPORTS

Current Research

■ Whence "Ti Tawhiti"?

In December 1989 issue of The New Zealand Botanical Society Newsletter Ross Beever posed the question "Whence *Cordyline* 'Kirkii'" and asked if anyone could shed more light onto the origins of the plant and the name. By a very fortunate coincidence the light now shineth on this plant revealing that it has a most venerable and interesting history.

Late in 1990 Peter Heenan was potting up offshoots from a plant of *Cordyline* 'Kirkii' obtained from his parents garden at Maori Hill in Dunedin. I happened to be walking through the potting area as Peter was doing this, and knowing my interest in the ethnobotany of cabbage trees, he drew attention to two distinctive features of this plant. These were its short stature and its ability to readily produce adventitious shoots from the rootstock. He also pointed out too that the origin of the plant and its name were uncertain. About this time I had recently read Elsdon Best's account of Maori agriculture which includes a chapter on the various uses Maori made of different species and varieties of *Cordyline*. This prompted a reply to Peter that perhaps this was one of the mysterious ti of the Maori which Best refers to in his account.

When I visited the Duncan and Davies nursery at Waitara in February 1991 my attention was again drawn to *Cordyline* 'Kirkii'. A block of the cultivar being raised for sale was pointed out by Jim Rumball who is the manager for research and development for the nursery. Jim indicated another very interesting characteristic of the plant by saying that in his long experience with the nursery he had never seen *Cordyline* 'Kirkii' flower. This provided another prompt back to the mysterious ti described by Best. On returning to Lincoln Peter and I had a much closer look at the *Cordyline* 'Kirkii' plants he had in the Botany Institute Experimental Garden. By this time Peter had written an article for Horticulture in New Zealand in which the cultivar name 'Kirkii' was changed to 'Thomas Kirk', as the Latinised name is invalid under the International Code of Nomenclature for Cultivated Plants. The indication that the plant had a link with Thomas Kirk also prompted us to have a closer look at Kirk's interests in *Cordyline*.

In short, our research of historical records, and our comparison of the morphological description of *Cordyline* 'Thomas Kirk' with those of the mysterious ti variety of Maori given in Best, point to the plant being ti tawhiti, also called ti para and ti kowhiti in different tribal areas of the North Island. The full details of this research are recorded in DSIR Land Resources Technical Record 45 with the title "The connection between 'Ti Tawhiti' a Maori crop plant, and the ornamental cultivar *Cordyline* 'Thomas Kirk'." A paper emphasising the ornamental characteristics of the plant, titled "*Cordyline* 'Ti Tawhiti' and its relationship to *Cordyline* 'Thomas Kirk'", has been prepared for Horticulture in New Zealand.

The best description of ti tawhiti from the 19th century was provided by Colenso who grew the plant in his garden in Napier. He considered the plant to be sufficiently distinctive to be regarded as a species and gave it the provisional name *Cordyline edulis*. Colenso mentions that he sent a specimen of the plant to Hooker in England, but our enquiry to Kew led to a reply from Mrs Jill Cowley that the specimen could not be located. Because of some variations between the descriptions of ti tawhiti given in Best it was disappointing that this specimen could not be found. Peter and I then directed our attention to the New Zealand herbarium collections, and it was Peter who made the exciting discovery of a specimen bearing the "native name Titawhiti" in the Auckland War Memorial collection. The single leaf preserved on this specimen has characteristics that match those of living specimens of *Cordyline* 'Thomas Kirk'.

While we can now answer the question "Whence *Cordyline* 'Kirkii'?" with the reply "It cometh from ti tawhiti", we are still left with the even more interesting question of "Whence ti tawhiti?". Maori tradition is that it was brought to Aotearoa-New Zealand on the Aotea canoe. The name can be translated as "the ti from a distant place" or "the ti from tahiti". Its non flowering, also characteristic of kumara and taro grown in New Zealand, is suggestive of a tropical origin. However there is no plant presently grown in tropical Polynesia that can be immediately linked to ti tawhiti.

If ti tawhiti could be persuaded to flower, more of the mystery that surrounds this interesting plant would be removed. A discussion on the plant that took place at a meeting of the New Zealand Institute late last century indicated that a specimen taken to Sydney had grown to produce a blue flower! If ti tawhiti is concealing a blue flower then certainly it is a distinct, probably undescribed species. It also seems very likely that it should be added to the list of the six other plants, kumara, taro, hue, ufi, ti pore, and aute, known to have been successfully introduced to Aotearoa-New Zealand by Maori in their ancient voyages from tropical Polynesia.

Warwick Harris and **Peter Heenan**, Botany Institute, DSIR Land Resources, Lincoln, Private Bag, Christchurch



Cordylone
from a plant at Horohoro
said to have come from
Kapiti Island - native name
Titawhite. H. Matthews

HERB. T. F. CHEESEMAN.	
LOCALITY—	
COLLECTOR—	
AUCKLAND MUSEUM, NEW ZEALAND.	

HERBARIUM No. 3152

■ Study of Vegetation Changes on Grazing Leases in South Westland

Dozens of enclosure plots have been set up in the high country to monitor the effects of deer on native vegetation, but surprisingly few monitor the effects of domestic animals. When the Department of Conservation inherited Forest Service and Lands & Survey grazing leases in the valleys of South Westland, it also inherited a potential conflict between the expectations of leaseholders that their traditional grazing rights would continue, and the belief of conservationists that native vegetation on DOC land should not be exposed to damage by cattle.

This made it imperative to objectively compare the effects of protection and continuing grazing. As a result of field inspections carried out in 1987, DOC decided to begin long-term monitoring, as a project conducted co-operatively by Westland Conservancy, DOC Science & Research Directorate, and what was then Botany Division, DSIR (and is now part of DSIR Land Resources and will be part of the National Institute for Land Environments!).

Three enclosures were built in the late summer of 1989, two on the Waitangitaona River flats to include seral forest and adjoining grassland, and one in the Cook Valley to include swamp and wet forest. Permanent transects were marked and recorded in all these enclosures, and matching control transects were set up outside. In subsequent years, further enclosures were built and transects set up in the Cook and Jackson Valleys; at least one more enclosure will be built during the coming summer.

A couple of transects in each paired enclosure and control have been remeasured each summer, to get an early indication of trends, and to indicate how often full measurements should be done - about four years seems to be the answer. To date, changes have been generally slow, but are probably accelerating. The exception is on moist, grassy river flats, where enclosure quickly resulted in a flush of introduced grasses. These have suppressed small native herbs, such as *Hydrocotyle* spp., *Nertera setulosa* and *Pratia angulata*, that had been favoured by grazing.

We believe that this project should continue indefinitely, both for its scientific potential, and for demonstration purposes. While some trends may become clear within a few years, other trends, for instance the reaction of podocarp seedlings to presence or absence of grazing, may take decades before becoming fully evident. While the number of enclosures already represent a considerable load for maintenance and monitoring, it is proving useful to have the study spread over a variety of vegetation types. A need for some duplication among sites was proved by the total destruction of part of an enclosure and control during a massive flood in the Waitangitaona Valley this year. Scientists involved in the project this year were:

Susan Timmins (DOC Science & Research, Wellington), **Chris Woolmore** (DOC Conservancy, Franz Josef), and **Rowan Buxton** and **Peter Wardle** (DSIR Land Resources)

Fieldwork

■ Population counts for *Pseudopanax gilliesii*

This issue's cover plant, *Pseudopanax gilliesii*, is a narrow range endemic apparently confined to the northern side of the Whangaroa Harbour (east of Kaitaia, northern New Zealand). It is listed as Endangered in Wilson and Given's "Threatened Plants of New Zealand" (DSIR, 1989).

During a brief botanical reconnaissance of selected areas of native vegetation on the north Whangaroa from 23-27 September 1990, Lisa Forester of DoC Northland Conservancy and I took the opportunity to make some population counts for this rare araliad. These are given below with grid references from NZMS 260 Sheet P04 Whangaroa. Size classes were differentiated as follows: seedlings less than 50 cm high; saplings greater than 50 cm high but not yet mature; adults of reproductive age and size, generally in canopy.

764852 to 764859 (along track from end of Campbell Rd through Ranfurly Bay Scenic Reserve towards Lane Cove Hut). Spread out over c. 1 km of trackside; 3 adults; 9 saplings; 9 seedlings. Despite evidence of cattle presence there was no sign of browsing of the *Pseudopanax gilliesii*.

780872 to 780874 (200 m transect from coast into valley east of the Dukes's Nose). 6 adults; 13 saplings; 1 seedling.

779872 (8 x 4 m area in small saddle between Duke's Nose and large rock outcrop to south). 4 adults; 16 saplings; 10 seedlings. Looking along the base of the west-facing bluffs forming the Duke's Nose, 7 major *Pseudopanax gilliesii* canopies could be counted in an area 4 x 20 cm. Passing under this stretch of canopy, seedlings and saplings were too numerous to count in the time available to us.

779873 (in small gut on summit of Duke's Nose). 1 adult; 4 saplings.

784857 to 782858 to 781856 (along c. 500 m of ridges between prominent kauri-covered knolls). 18 adults; 35 saplings; 33 seedlings.

Scattered plants of all size classes were commonly encountered wherever we botanised west of line between the end of Campbell Rd (763850) and the mouth of Sherman Stream (763870). The species would appear to be secure in this area of c. 6 km².

Other points of interest were:

- (i) on climbs from the coast, plants were encountered from c. 10 m above sea level, but always became more common with increasing elevation;
- (ii) despite obvious possum browsing of mangroves on the harbour margins, no sign of possum browsing of *Pseudopanax gilliesii* was observed;
- (iii) many vigorous, healthy adults in ridgetop canopies exhibited substantial insect damage to young foliage;
- (iv) very few fruit (one or two individual fruit on each of only three plants) and no flowers were observed.

Finally, we have a possible explanation for the curious mixture of unifoliate and trifoliate leaves which requires more rigorous testing. The two types of leaves appear to be produced in alternate flushes, with unifoliate leaves associated with flowering and fruit production (as in the specimen used for the cover illustration of this Newsletter).

Anthony Wright, Botany Department, Auckland Institute & Museum, Private Bag, Auckland 1.

BIOGRAPHY

■ Biographical Notes (3): Henry John Matthews (1859-1909) and Grace Annie Matthews (c. 1874-1967).

Henry Matthews was born in Dunedin on 19 September, 1859 (1). He was the sixth child and youngest son of George and Eliza Matthews who had arrived at Port Chalmers with their first three children on 26 March, 1850 (2,3). They were emigrants on the *Lady Nugent*, a voyage described by Charlotte Godley on her way to the Canterbury settlement with her husband (4).

George Matthews, born in Aberdeenshire and an experienced horticulturist, established a seed and nursery business in Moray Place in 1850. He later added the large Hawthorn Hill Nursery in Mornington and built his house there. He died in 1884 by which time Henry had taken over management of the business (c. 1880). The eldest son, James Alexander, had other inclinations, becoming night printer of the Otago Daily Times, and grandfather of Denis Glover, a printer and poet (3).

Under Henry's management, and with an enthusiastic foreman, John McIntyre, native plants became a feature of the Hawthorn Hill Nursery. Attractive catalogues were produced, plants exported, a rockery built for alpinists with soil brought from Flagstaff, and Otago explored for novelties (3). Thus Petrie wrote of *Celmisia lindsayi*: "I have also seen numerous living plants of this species brought by Mr Henry Matthews of Dunedin, from the neighbourhood of Lake Harris" (Tr 1896). This is the first reference to Matthews in the Transactions of the New Zealand Institute (Tr); the second refers to his record of *Cordyline indivisa* from Dusky Sound (Tr 1897). In February, 1895, Matthews went further afield as a member of the scientific party which accompanied the Governor of New Zealand, the Earl of Glasgow, on his inspection of the southern islands. They visited Stewart, Auckland, Campbell, Antipodes, and Chatham Islands (5). Cockayne wrote that Matthews "made a very extensive collection of plants from the various islands, and, I understand, succeeded in sending a large number to the Royal Botanic Gardens, Kew, in excellent condition. Moreover, he has cultivated for many years a large percentage of the Southern Island's plants, a matter by no means easy" (Tr 1904).

By this time the buildings in Moray Place had been let, and the Hawthorn Nursery reduced by the sale of sections (3). I do not know when the business was wound up, but in 1896 at the age of 36, Matthews began a new life. On 19 August he was appointed Forester to the Department of Lands and Survey (6: 1897). He was selected by Sir John McKenzie, Minister of Lands in the Seddon Government, and MP for Waihemo. And on 14 October he married Grace Annie Gordon, then aged 22 and born in Hampshire, England (1). She was a niece of William Martin, another pioneer Otago nurseryman, and grandfather of William Martin (1886-1975) teacher and botanist (3).

Matthews' remarkable achievement in establishing a network of nurseries and their attendant plantations is recorded in his annual reports (6). His first nurseries were at Eweburn on the Maniototo Plain (1896), Tapanui (1897) and Rotorua (1898). In 1900 he became Chief Forester, and in 1901 at the Waiotapu plantation he began using prison labour. "The men have expressed their appreciation of the change from the dismal walls of a prison to the practically free and open life they are now enjoying". In 1903, he wrote: "Instructions have been received to prepare a treatise on Forestry for the use of settlers, which work is well in hand, although frequent interruptions by ordinary duties are not conducive to satisfactory results." The manual was completed early in 1904, and published in 1905 by the Government Printer as the very useful "Tree Culture in New Zealand". The Preface states that "the plates throughout this work have been reproduced from photographs taken by Mrs H.J. Matthews." A few of these 63 plates had earlier appeared in the Annual Reports for 1904 and 1905 over the name Grace Matthews; and a photo in Kauri forest (6: 1905) shows that she accompanied her husband as far afield as North Auckland. She also supplied several excellent photographs of specimen native trees for the Department's report on "Forestry in New Zealand" (6: 1909); and she collected plants (Tr 1907: 447).

During his travels Matthews collected specimens and information for Petrie, Cheeseman, and Cockayne. He was commemorated by Petrie in *Poa matthewsii* (Tr 1902), *Gentiana matthewsii* (Tr 1912), *Epilobium matthewsii* (Tr 1921) and *Senecio matthewsii* (Tr 1924); by Hackel in *Festuca ovina* subsp. *matthewsii* (Tr 1903); by Cheeseman in *Hebe matthewsii* and *Ranunculus matthewsii* (7); and by Cockayne in *Wahlenbergia matthewsii* (Tr 1915). There are numerous locality records from throughout New Zealand by Matthews in papers by Cheeseman (Tr 1907, 1908, 1910, 1911) and Cockayne (Tr 1907).

Cockayne was the closest in age to Matthews - only four years older - and they had much in common including considerable experience in horticulture. On 2 September, 1905, Matthews sent information to Cockayne about *Gaya ribifolia* (Tr 1907) and had already written about *Celmisia lindsayi* (Tr 1906). Then in October, 1905, in company with Mr and Mrs H.J. Matthews, Cockayne "had the great pleasure of again visiting Mount Fyffe (near Kalkoura) and ascending as before by the Kowhai Spur to a height of about 1067m" (Tr 1906). In January, 1906, Matthews and Cockayne visited the Island Bay habitat of *Hebe macroura* (Tr 1907). In March, 1906, in a letter to Goebel, Cockayne mentioned his idea of becoming Government Botanist and the attendant advantage of being able to travel everywhere in New Zealand and not any longer at his own expense (8). It would seem very likely that the example of Matthews and discussions between them on their field trips led to this idea.

Early in April, 1909, Matthews felt so unwell at Rotorua, that he went to Auckland for medical advice (6: 1909). Here he died on 28 April, and on 4 May, was buried in the Northern Cemetery, Dunedin (1). He was only 49. In the thirteen years before his death he had established 7 nurseries: Eweburn, Hanmer Springs, Tapanui, Ruatangata, Rotorua, Starborough, and Kurow, which had raised 63,576,448 trees, timber and ornamental; and he had established 14 plantations: Conical Hills, Dusky Hill, Gimmerburn, Naseby, Raincliffs, Hanmer Springs, Dumgree, Whakarewarewa, Waiotapu, Kaingaroa Plains, Puhipuhi, Waitaki, Waiatahuna, as well as Domains and Reserves (6: 1909).

In dedicating *Gentiana matthewsii* Petrie wrote: "His premature death is a great loss to the science he loved so well. The magnificent alpine garden that he established at his home in Dunedin was one of the sights of the Dominion. Many of its treasures are still in cultivation in the Dunedin Botanical Gardens, which the taste and talent of Mr Tannock have made so attractive and instructive" (Tr 1912).

After her husband's death Grace Matthews returned to England where she died in Guildford in 1967. After the death of Mrs Eliza Matthews in 1911, the family home at Hawthorn Hill passed into the hands of Dr Irwin Hunter (3); and Cheeseman (9) when describing *Nothopanax macintyrei* wrote: "Described from specimens taken from a young tree cultivated in Dr Hunter's garden at Dunedin, and originally collected by the late Mr H.J. Matthews in some locality in the south of Westland. I have pleasure in associating with it the name of Mr Macintyre (sic) formerly chief gardener to the late Mr H.J. Matthews, and for many years a most successful cultivator of New Zealand plants."

H.J. Matthews was not related to Richard Henry Matthews (1835-1912) of Kaitaia (*Corybas*, *Myosotis*, *Thelymitra*) or Henry Blencoe Matthews (1861-1934) of Kaitaia and Auckland (*Dracophyllum*, *Pittosporum*, *Pterostylis*); and Gow (3) wrote: "By a coincidence the name of Matthews is very well known in New Zealand gardening today, but there is no family connection: indeed the male line of the Dunedin Matthews family has now died out".

(1) Registrar-General; (2) *Otago News*, 30 March, 1850; (3) *William Matthews* by Ruth Gow in *The Advance Guard*, Series 1, *Otago Daily Times*, Dunedin, 1973, (with portrait of H.J. Matthews) on which is based: *Henry John Matthews, New Zealand's First Forester* by P. Brent Gow *Annual Journal*, Roy. NZ Inst. Hort. 1986-87; (4) *Letters from Early New Zealand 1850-53*, Whitcombe and Tombs, 1951; (5) E.J. Godley *NZJBot.* 1989; (6) *Annual Reports of the Dept. of Lands and Survey in Appendices to the Journal of the House of Representatives*; (7) *Manual of the New Zealand Flora*, 1906; (8) A.D. Thomson, *NZJBot.* 1976; (9) *Manual of the New Zealand Flora*, 1925.

E.J. Godley, Research Associate, DSIR Land Resources, Christchurch

PUBLICATIONS

■ **Vegetation of New Zealand**

Launched in the last week of August was Peter Wardle's comprehensive and generously illustrated account "Vegetation of New Zealand". The volume begins by considering the origins and ecological features of the native flora, discussing factors which shape the vegetation, such as landscape, climate, historical events and human impact. Each of the major categories of vegetation are then described, including communities of both native and naturalised plants and the vegetation of outlying islands. Concluding chapters summarise ecophysiological aspects of the vegetation and discuss recent ecological processes such as disturbance, regeneration, invasion and succession.

This is a major work and will be of interest to professional and amateur botanists, ecologists and conservationists. "Vegetation of New Zealand" is available at a 20% discount (\$256 inclusive of GST and p. & p.) from:

Publication Sales, DSIR Land Resources, Private Bag, Christchurch

■ **Horticulture in New Zealand**

This is the *Journal of the Royal New Zealand Institute of Horticulture*, and the summer 1991 issue is now available at a cost of \$12.95 per copy.

It contains the following articles of interest to botanists:

The Eastwoodhill Arboretum - A study of a major botanical resource and its horticultural potential by Mrs M.B. MacKay, Massey University.

Cordylina Cultivar Names - three new combinations by Peter Heenan, Botany Institute.

A Cultivar Checklist for the New Zealand Species of Cordylina by Peter Heenan, Botany Institute.

(Note: An expanded version of this has been published in A5 booklet form, available at \$8.00 per copy.)

Hebe Breeding at the Auckland Regional Botanic Gardens by Jack Hobbs, Auckland Regional Botanical Gardens. Not only is the programme described, but details are provided of 12 Hebe cultivars raised at the Botanic Gardens.

Rodger McCarthy, Executive Officer, Royal New Zealand Institute of Horticulture (Inc), PO Box 12, Lincoln University, Canterbury

■ **The New Zealand orchids: natural history and cultivation**

A New Zealand Native Orchid Group publication, edited by Ian St George and Doug McCrae. \$16 includes post and packing. Write to:

E.D. Hatch, 25 Tane Road, Laingholm, Auckland

■ **ENVIRONZ New Zealand's environment magazine**

ENVIRONZ is a bi-monthly magazine dedicated to the New Zealand environment.

Subscriptions are vital to the success of ENVIRONZ magazine .

The magazine aims to provide important information and a variety of viewpoints, encouraging positive participation for a "greener" New Zealand.

It has been suggested by a subscriber that an alphabetical index of the issues covered would be helpful. We intend to do this at the end of each year.

A Students Section is a forum for students to contribute both written and visual material. This section will have regular competitions e.g. photography, short stories, posters, etc.

There is a Business Profile Section in which we review new products and developments in "green" business, as well as a consumer report analysing the economic and environmental impact of a particular product choice e.g. solar heating versus electricity.

We also intend to distribute information on coming events as well as book reviews (on environmental topics). Any member that would like to be on our mailing list should fax (AK 4190580) or send their contact details to:

ENVIRONZ, PO Box 36-400, Auckland

■ **Checklist of *Phormium* Cultivars**

The Royal New Zealand Institute of Horticulture Nomenclature Committee is responsible for producing checklists of cultivars of native plants. Recently completed is a Checklist of *Phormium* Cultivars.

The checklist has been compiled by Peter Heenan, Botany Institute DSIR Land Resources, and includes information on the original place the cultivar name was published, a description (where available), any synonyms, and additional notes such as who introduced or selected the cultivar.

Over 380 cultivars of *Phormium* or New Zealand flax are listed; of these 197 are cultivars that have been selected and named by the Maori for their fibre which was used for weaving clothing, matting, containers and cordage; the remainder have been selected for ornamental horticulture and are chosen for their leaf form and/or colour.

The *Phormium* checklist provides useful information on the correct naming of *Phormium* cultivars and is essential for those people who work with flax, whether they be Maori cultural and weaving groups or gardeners and nursery workers.

Trade price for 2 copies plus = \$6.00 each (GST incl.) (Cheque must be included with order.) Send your orders to:

Royal New Zealand Institute of Horticulture, PO Box 12, Lincoln University, Canterbury

ANNOUNCEMENTS

■ Wellington Botanical Society Jubilee Award

Wellington Botanical Society now invites applications for an award of up to \$1000 to encourage and assist appropriate people to further the knowledge of the New Zealand indigenous flora, and to commemorate the Jubilee of the Society.

PURPOSE OF THE AWARD

The Award is open to anyone working in New Zealand and will be granted for:

field work; artistic endeavour; publication; research; the propagation or cultivation of New Zealand native plants for educational purposes; or other projects which promote the better understanding of the New Zealand indigenous flora and vegetation.

The interpretation of these conditions will be flexible except that the main criterion shall be the furtherance of knowledge or promotion of the intrinsic value of the New Zealand indigenous flora and vegetation.

The Award may be used to defray costs such as travel, accommodation, materials, or publication.

APPLICATIONS FOR THE AWARD

Applications should be made in typescript to the Secretary of the Wellington Botanical Society, 9 Mamari Street, Rongotai, Wellington 3, by 10 October 1991.

There is no prescribed application form but the following information should be provided:

the applicant's name, mailing address, telephone number, and any relevant position held;
a summary statement of the applicant's accomplishments in the field of botany (no more than one page);

the name, address, telephone number, and designation of a referee who is familiar with these accomplishments;

an outline and timetable of the proposed project for which the Award is sought; and
a proposed budget for the project.

SELECTION

The Award will be made to one or more applicants selected by a subcommittee nominated by the general committee of the Wellington Botanical Society. An Award will not be made if suitable applications are not received. The decision of the subcommittee will be final, and no discussion or correspondence will be entered into. Current members of the subcommittee are not eligible to apply.

The Award will be made, and applicants informed of the results in writing, by 10 November 1991.

Successful applicants will be required to provide, at an agreed time, a short report on what they have achieved and an account of their expenditure of Award Funds.

The names of Award recipients, the value of the Award, and synopsis of the project provided by the recipients will be published in the Annual Report of the Wellington Botanical Society.

Carol West, 9 Mamari Street, Rongotai, Wellington

FORTHCOMING MEETINGS/CONFERENCES

■ People, Plants and Conservation - The Role of Botanic Gardens into the 21st Century.

The 1992 annual conference of the Royal New Zealand Institute of Horticulture is being held in Wellington 19-22 March 1992 and will focus on botanic gardens, as part of the centenary of City Council management of the Wellington Botanic Garden.

The botanic garden system in New Zealand is different from other countries in that there is no national botanic garden funded by central government. Botanic gardens are administered by municipal authorities and funded from rates. None are attached to scientific institutions and only one employs a full-time botanist. This has resulted in uncoordinated development in such areas as plant collections, educational material, record keeping and so on.

This conference will look at the critical issues facing botanic gardens and other plant collections in New Zealand, and their future roles. It will also look at ways in which gardens can work more closely together within New Zealand and what international contributions they can make, especially in the field of plant conservation.

The Keynote speaker will be Dr Roy Taylor, Director of the Chicago Botanic Garden.

Conference themes include:

- education and interpretation
- public participation
- conservation and ethnobotany
- managing collections
- computerising plant records

There will be workshops on the main themes and field trips to public and private plant collections in the Wellington area.

The conference will be a first for New Zealand, and will appeal to all those involved in, the management of plant collections and nurseries, as well as educators and botanists with an interest in the work of botanic gardens.

For more information please contact:

Centre for Continuing Education, Victoria University, Box 600, Wellington, phone (04) 475-8677, fax (04) 475-8676

■ Southern Temperate Ecosystems: Origin and Diversification (Incorporating the second *Nothofagus* Symposium)

A new organisation, called "Southern Connection", was formed at a meeting held at Honolulu in May 1991 as part of the Pacific Science Congress. This "Southern Temperate Ecosystems" conference is a direct result of that meeting. It is anticipated that there will be a strong contingent of overseas scientists attending, particularly from South America and New Zealand. There are plans for pre- and post-congress field trips in Tasmania and New Zealand.

The conference, to be held at the University of Tasmania January 18-23 1993, will incorporate the second *Nothofagus* Symposium (the first was held in Argentina in 1987), but there will be other sessions involving various aspects of southern temperate ecosystems, including systematics, biogeography, ecology and evolution.

The Ecological Society of Australia and the Palaeobotanical and Palynological Association of Australasia will also be associated with this conference, but full details are not yet available.

If you wish to receive further information regarding this conference, please write to:

Dr Robert S. Hill, Department of Plant Science, University of Tasmania, GPO Box 252C, Hobart, Tasmania, Australia 7001

CONFERENCE/MEETING REVIEWS

■ Threatened Plant Symposium

From 1-3 July of this year a threatened plant symposium was held at Kiwi Ranch, Kaitoke (Upper Hutt) to discuss recent developments in threatened plant conservation. The symposium, convened jointly by the Department of Conservation (DoC) and DSIR Land Resources was the first of its kind in New Zealand and will, hopefully, set a precedent for future plant conservation meetings.

Forty-seven amateur and professional botanists, DoC staff and plant propagators attended the three-day gathering. The purposes of the workshop were:

1. To establish dialogue between public and private agencies or individuals involved in research, management, cultivation and promotion of New Zealand's threatened plants.
2. To establish mechanisms for co-ordinating future work on threatened plants and setting and reviewing priorities for threatened plant programmes by scientists, managers, propagators and plant advocates.
3. To highlight the considerable effort and achievements that have been made to date in our knowledge and management of threatened plants in New Zealand.

TOPICS COVERED AND RECOMMENDATIONS

1. The New Zealand Threatened Plant Species List

The threatened plant species list first initiated by Dr David Given in 1976 has long been recognised as the primary database for threatened plant conservation and research in this country. While acknowledging the tremendous contribution made by David in the last fifteen years it was felt that a mechanism was required for refinement of the list by a much wider group of "botanists". Specific problems encountered with the present list were:

- (a) The size of the list (368 species or varieties) - a criticism derived from DoC management and from the more conservative botanical audience.
- (b) The use of IUCN categories of threat and, more specifically, the definition and use of "local", a ranking not used by the IUCN but advocated by David Given.
- (c) The review procedure. Currently the list is updated by more or less *ad hoc* submissions from a relatively small field of expertise and dissemination of the list poor. Updates have been somewhat erratic, leading to some confusion over species threat status.
The participants agreed that the list should be subject to a wider audience for annual review and that the most appropriate parent body to conduct such an exercise was the New Zealand Botanical Society.

The following recommendations were made:

- (i) That the review of species status and publication of the list be carried out by a National Committee appointed by the New Zealand Botanical Society.
- (ii) That the committee comprise a maximum of five representatives (including one DoC representative) whose role is to review the threatened plant list on an annual basis and make appropriate revisions based on public submissions.
- (iii) That the corrected list be published in the New Zealand Botanical Society Newsletter.
- (iv) That the committee use the IUCN categories of threat.
- (v) That the New Zealand Botanical Society approach the Department of Conservation asking DoC to meet agreed costs for servicing the committee.
- (vi) Provide advice to DoC when required.

Ideally, the members of the committee will comprise two North Island and two South Island nominees and a DoC convenor. This would help to obtain a wider spread of regional botanical expertise. It will be the convenor's role to:

- (i) Provide notice of the impending meeting of the review committee and call for submissions on the list, i.e. suggested additions, deletions, status changes etc.
- (ii) Convene the meeting.

- (iii) Coordinate publication of an annual report in the New Zealand Botanical Society Newsletter.

The role of the four nominees will be to:

- (i) Act as a regional co-ordinator for their area by active interaction with the botanical community.
- (ii) Collate records of threatened plant species for their area as these become available.
- (iii) Present the records and provide advice on any changes to the current list.

It was stressed that the decisions reached by the committee should be final until the next revision.

The participants agreed that the committee should act as an independent body from its supporting agencies and that the members of the committee should be appointed by the New Zealand Botanical Society Committee preferably by the end of November 1991.

2. Species priority ranking systems

Papers were presented by Janice Molloy (Protected Species Policy Division (PSPD) DoC) and Dr David Norton (University of Canterbury) on priority ranking systems. DoC has established a ranking system which categorises taxa into a number of priority groupings. All threatened species (flora and fauna) are ranked using criteria grouped under the headings distinctiveness, population features, vulnerability, potential and values. Research priorities and management decisions made by DoC are based on this list.

David Norton presented a paper which considered a multivariate approach to priority ranking. The system ranked species within clusters, a cluster representing a particular type of threat or growth strategy. It was pointed out that such a system enabled a more precise ranking of threatened species and assisted in the designation of appropriate IUCN threat rankings for indeterminate species. Discussion followed in which the participants chose to support the DoC species priority ranking system.

3. Species recovery plans

Alan Saunders (Manager, Threatened Species Unit, DoC) explained the purposes and functions of recovery plans in threatened species management. The lack of recovery plans for many threatened plants was addressed.

Participants saw the need for recovery plans and recognised the species priority ranking system as a valuable tool in determining which species require plans.

4. Cultural significance of threatened plants

Geoff Walls (DoC, Hawkes Bay) gave an appraisal of the Maori values placed on plants. He emphasised the importance of plant varieties which could not readily be explained by conventional taxonomy. Graeme Platt (Platt's Nurseries, Albany) gave a hard hitting account of the loss of the distinctive New Zealand flora. In Graeme's view any indigenous species not reproducing successfully constituted a threatened species. He saw a need for an open policy on the cultivation of our New Zealand flora to help safeguard wild plant populations.

5. Review of plant legislation and DoC collecting policies

Allison Davis (PSPD, DoC) convened a series of workshops on these topics. The workshop recommended that only threatened plant species (as defined by IUCN criteria) should be given statutory protection. However, the differences between plants and animals needed recognition, i.e. many plant species can be readily cultivated, or produced from seed plant tissues. A collection permit policy should emphasise a minimum impact on the plant species in the wild. The removal of whole plants (unless necessary for specific research or systematic study) should be prohibited. Some groups such as terrestrial orchids, some mistletoes and the root parasite *Dactyloctenium aegyptium* should not be collected unless part of an approved research programme. The workshop recommended that DoC adopt a system of blanket permits for plant collecting by *bona fide* botanists and horticulturists, with a provision for reporting back information on the types of species collected and the localities involved. Criteria for determining a client's suitability for such a permit would be determined by DoC in consultation with the relevant institutions before such a system was put in place.

6. Threatened plant research

Research on threatened plants was discussed from both the DoC and outside institution view points, with Dr Richard Sadleir (Director, Science and Research, DoC) and Dr Bruce Clarkson (DSIR Land Resources) presenting their views. DoC research into threatened plants is still in its infancy, so case studies of specific projects was considered premature, therefore discussion centred on the disparity between funding for animal and plant programmes. Bruce Clarkson pointed out that unless some redress was given to this imbalance much plant expertise would be lost from the public sector.

The following recommendations were made:

- (i) That DoC recognise that there is currently an imbalance in funding plant research relative to animal (particularly avifauna) research. If additional funding is not forthcoming, then some reallocation of funds should be considered.
- (ii) That there is currently some confusion over the funding role between DoC and FoRST. DoC should be funding applied research on the DoC estate whereas FoRST funds high profile, economic and strategic research. Much research proposed by botanists has both a strategic benefit and is also programmed to answer applied questions. Better clarification of the funding relationships between DoC and FoRST is needed.
- (iii) DoC and external research agencies need to forge closer links between researchers and management staff. New levels of co-operation will enhance the cause of plant conservation.
- (iv) DoC should utilise better their own plant nurseries and encourage these to conduct plant research rather than compete externally with non-government funded nurseries.
- (v) The cause of plant research will be greatly boosted by active promotion and marketing. All botanists need to promote plant conservation by increasing the number of popular articles, press releases, public meetings and associated lectures. Botanists should be actively seeking sponsorship for higher profile research programmes. Increased funding for plants will not occur unless there is a greater political awareness of plant conservation issues.
- (vi) The importance of systematics and herbaria must be advocated. Approximately 10% of our vascular plants are undescribed, and many of these are local endemics and therefore potentially threatened. It was acknowledged that "tag names" for undescribed taxa were often meaningless to the DoC field officer or public. For various reasons people accept specific names more easily than tag names, and therefore efforts to describe new taxa need to be improved. Unfortunately, taxonomy under present funding levels is a dying art. The present number of active taxonomists is small and simply unable to cope with the number of new discoveries being made. Herbaria, although a national resource, are poorly supported by DoC. This is largely because many DoC staff are ignorant about NZ herbarium resources. It was agreed that Dr Patrick Brownsey (National Museum) and Peter de Lange (Science and Research, DoC) should prepare a discussion paper on our herbarium resources and their use for dissemination to interested individuals and organisations.

CONCLUSIONS

The symposium concluded with a summary of the proceedings presented by David Given. It was stressed that the sharing of knowledge and aspirations, and making of new contacts would encourage a better co-ordinated team approach to plant conservation in the future. The gathering was a positive step towards achieving this goal. The participants recommended that DoC organise a threatened plant conference in 2 years' time to build on the current resolutions, update progress with issues, and enable participants to contribute papers on threatened plant management and research.

Peter J de Lange, Science and Research, **Graeme Taylor**, Threatened Species Unit, Department of Conservation, PO Box 10-420, Wellington

■ Australasian Society for Phycology and Aquatic Botany

In July ASPAB met in Adelaide over three days for its annual conference. The range of papers offered reflected the wide interests of members with sessions on:

1. the biology and ecology of wetland plants and ecosystems
2. the taxonomy of algae
3. the biology of algae
4. the ecology of algae
5. coastal pollution
6. aquaculture

The meeting proved very interesting covering freshwater and marine systems, macro- and micro-algae as well as aquatic macrophytes from diverse habitats. The New Zealand membership in this Society is not particularly strong. If you would like more information about this recent conference or the Society please contact:

Wendy Nelson, National Museum, PO Box 467, Wellington

MISCELLANEOUS

■ Jersey Cabbages

Jersey is celebrated for its Cabbages, and for their tall, tree-like character, a peculiarity partly owing to the custom of the peasantry in removing lower leaves - almost daily - to feed their cows. Thus a cabbage-garden in Jersey has somewhat the appearance of a little grove of Palms; so that in walking between them you literally walk under their foliage, which forms a crown at the top; and such stems are not unfrequently ten and twelve, and more, feet long, quite erect, and straight, and are made use of for a great variety of purposes. Planted closely, as living fences, they keep out fowls and small animals; sheds are thatched with them; they serve as stakes for Kidney-beans, Peas, etc., and the stouter ones as cross-spars for the purpose of upholding the thatch or roof of the smaller classes of farm-buildings, cottages, etc., and, if kept dry, are said to last upwards of half a century. Our friend Mr. Samuel Curtis, a resident in the island, informs us that he has seen a stalk that measured sixteen feet in length, and that one that had grown up under the protection of a cider Apple-tree had its spring shoots at the top occupied by a magpie's nest! The stems are now much used for making walking-sticks ("Jersey Canes"). Stalks eleven feet high, and very good-looking and firm walking-canes, are deposited in the Kew Museum of Economic Botany.

From: Journal of Botany and Kew Garden Miscellany Volume 8, 1856.

LETTERS TO THE EDITOR

■ Death by any other name

It was good to see Dr Andy Thomson's observations on dying cabbage trees recorded in the last newsletter (24:9-11), but I must protest at his suggestion that the disorder is better named *Cordylina* dieback, rather than sudden decline. My protest rests primarily on the principle of priority. While there is no "Code" for disease names, it is nevertheless in the interests of all that names do not proliferate. Thus I suggest that *Cordylina* dieback is an unnecessary synonym of *Cordylina* sudden decline, the name given to the disorder by Rees-George et al. (*NZJ Botany* 28:363-366, 1990).

What is the difference between decline and dieback anyway? In perusing the botanical literature, I can find few consistencies in usage patterns. Some forest pathologists such as P D Manion ("Tree disease concepts", Prentice-Hall, New Jersey, 1981) distinguish abiotic, biotic, and decline diseases. Declines in this context are defined as diseases which result from an interacting set of factors rather than from a single causal agent. Examples cited by Manion include maple decline and birch dieback! While this definition may at first sight seem straightforward, it is in reality difficult, particularly at the initial stages of an

investigation, to decide whether any particular syndrome is caused by one or more agents. And, as Manion admits, some of his so-called declines will in time be shown to be primarily the result of a single biotic agent.

In the more general plant pathology literature only two classes of diseases are distinguished, abiotic (often termed disorders) and biotic. The term dieback is widely used to describe apical death of shoots, which can result from many causes including fungal, bacterial or viral attack, and mineral or water deficiencies. The term decline is used in reference to progressive ill-thrift of plants, often characterised by dieback of branches and sometimes death of the plant. In this literature, the terms dieback and decline both often feature in the common names applied to specific diseases, such as pear decline, caused by a mycoplasma-like organism (MLO), and citrus dieback or quick decline, caused by the tristeza virus.

Both dieback and decline are also widely used by forest ecologists, often interchangeably, in reference to stands of unthrifty and dying trees. In this context D. Mueller-Dombois has championed the view that, at least in some cases, the syndrome is not a reflection of abiotic or biotic disease, but of "natural" synchronous senescence (cohort senescence) of even-aged stands (Bioscience 37:575-583, 1987). This author has attempted, with some success, to capture the term dieback to apply to this latter situation.

Returning to *Cordyline* sudden decline, it could be a decline in Manion's sense, although the symptomology suggests involvement of a virulent pathogen. It certainly is a decline, albeit a rapid decline, in the broad plant pathology sense, in that the trees show tip dieback and eventually decline to death. It is probably not a decline in the forest ecologist's sense, in that the disorder affects trees of a wide age range, in a diversity of habitats and often not in discrete stands.

In due course, when the cause of *Cordyline* sudden decline is better understood, it may be appropriate to rename it. Meantime, I suggest sticking with the original name.

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