

NEW ZEALAND BOTANICAL SOCIETY  
**NEWSLETTER**

NUMBER 30

DECEMBER 1992



## New Zealand Botanical Society

President: Dr Eric Godley  
Secretary/Treasurer: Anthony Wright

Committee: Sarah Beadel, Ewen Cameron, Colin Webb, Carol West  
Address: New Zealand Botanical Society  
C/- Auckland Institute & Museum  
Private Bag 92018  
AUCKLAND

## Subscriptions

The 1993 ordinary and institutional subs are \$14 (reduced to \$10 if paid by the due date on the subscription invoice). The 1993 student sub, available to full-time students, is \$7 (reduced to \$5 if paid by the due date on the subscription invoice).

Back issues of the *Newsletter* are available at \$2.50 each - from Number 1 (August 1985) to Number 30 (December 1992). 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 March 1993 issue (Number 31) is 26 February 1993.

Please forward contributions to: Bruce & Beverley Clarkson, Editors  
NZ Botanical Society Newsletter  
7 Lynwood Place  
HAMILTON

## Cover illustration

*Asplenium pauperequitum* (Aspleniaceae). Drawn by **Lesley Alexander** from specimens and photographs taken on the Poor Knights Islands. 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 completed a twelve week work experience block in New Zealand last year, during which she drew *Pseudopanax gilliesii* (featured on the cover of *Newsletter* No. 25) and the two fern studies used in this issue. Scale bar 1 cm. See further illustration and article on p. 12 (Anthony Wright).

NEW ZEALAND BOTANICAL SOCIETY  
**N E W S L E T T E R**  
NUMBER 30                      DECEMBER 1992

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## NEWS

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### New Zealand Botanical Society News

#### ■ From the Secretary

Nominations for 1993 Officers and Committee positions for the New Zealand Botanical Society received by the closing date of 20 November 1992 were:

President	Dr Eric Godley
Secretary/Treasurer	Anthony Wright
Committee	Sarah Beadel, Colin Webb, Carol West

As the number of nominations equalled the number of vacancies there was no need for a ballot and the above are declared elected.

#### Newsletter Editors for 1993

The Committee was pleased to appoint Bev and Bruce Clarkson as joint Editors of the Society's *Newsletter* for 1993. Their contact address is:

Bruce & Beverley Clarkson  
NZ Botanical Society Newsletter  
7 Lynwood Place  
HAMILTON

With this appointment, Bev and Bruce become members of the NZBS Committee *ex officio*. Please support them in their endeavours to maintain a newsy and informative *Newsletter*.

This present *Newsletter* is the last to be edited by Ewen Cameron. I know all members will join me in thanking Ewen for a year of excellent service.

#### Subscriptions for 1993

Subscriptions for next year (if you pay promptly!) remain unchanged, as indeed they have since the inception of the Society. Ordinary subscriptions are \$14 (reducible to \$10 if paid by the due date); student subs are \$7 (reducible to \$5 if paid by the due date). An invoice for 1993 subscriptions accompanies this issue of the *Newsletter*.

#### ■ New Zealand Threatened Indigenous Vascular Plant List

A reminder that the Society's National Threatened Plant List Committee will meet for the first time in February 1993 to update the current list, and that submissions to the Committee are due by 31 January 1993. For further information refer to the last *Newsletter*, No. 29, pp. 2-5; submissions should be sent to:

Peter J de Lange  
Convenor, Threatened Plant Committee  
Science and Research Division  
Department of Conservation  
P O Box 10-420  
WELLINGTON

**Anthony Wright**, Secretary/Treasurer, New Zealand Botanical Society, C/- Auckland Institute & Museum, Private Bag 92018, Auckland

### Regional Bot Soc News

#### ■ Auckland Botanical Society

##### Programme, December 1992 - March 1993

The Society takes a break over the summer, so the next field trip is scheduled for late February and the first evening meeting for 1993 will be the AGM in March.

20 February - Field trip to the native forest remnants in Woodhill Forest, followed by a BBQ at a member's home (Leader: Ewen Cameron)

3 March - Evening meeting: AGM, followed by a talk on "Garden escapes in Auckland" by Alan Esler

20 March - Field trip to the Noises Islands in the Hauraki Gulf (Leader: Ewen Cameron).

#### ABS Newsletter

The secretary has back issues of the *Newsletter* (the forerunner of the *Journal*), going back as far as the early 1970s. A full list is available on request. These are offered free, excluding postage.

#### ABS Bulletins

No. 21 "Adventive Flora of the Waitakere Range" by J. Mackinder

This bulletin is intended to be companion volume to R.O. Gardner's "Native vascular flora of the Waitakere Range, Auckland". 447 adventive plants are recorded. (\$2 including p&p)

No. 22 "A Vegetative key to New Zealand genera of trees and shrubs growing naturally in Northern New Zealand" by J.A. Rattenbury.

This key has taken many years to develop and is designed to be used in conjunction with Poole & Adams "Trees & Shrubs of New Zealand". Northern New Zealand is defined as the area north of the Waikato River. (\$2 including p&p)

The Bulletins are available from the ABS Editor, Jack Mackinder, 741 Scenic Drive, Henderson, Auckland.

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

#### ■ Canterbury Botanical Society

##### Upcoming events

3-10 January - field trip to Wanaka, based on ski-club lodge at Albertown, to visit Treble Cone and Cardrona ski fields, and the Pisa Range.

5 February - evening meeting "The genus *Raoulia*" by Jo Hammond-Ward.

**Ron Close**, Canterbury Botanical Society, P O Box 8212, Christchurch

#### ■ Nelson Botanical Society

The September field trip to Delaware Bay was quite a relaxed coastal walk for the 25 keen botsoccers. In the morning we grasped the benefit of the tide to walk the coast towards Hori Bay. The coastal bank along the foreshore contained *Linum monogynum* in flower and further back typical coastal forest of titoki (*Alectryon excelsus*), wharangi (*Melicope ternata*), mahoe (*Melicytus ramiflorus*) and the odd karaka (*Corynocarpus laevigatus*). There were also several adventive pohutukawa (*Metrosideros excelsa*), which appeared to have spread from nearby planted ones. In quite dense tawa (*Beilschmiedia tawa*) forest in one bay, a pigeonwood (*Hedycarya arborea*) titoki sub canopy, shared a dense understorey with bamboo rice grass (*Microlaena polynoda*) up to two metres tall - quite unusual for Nelson.

In the afternoon we visited the tawa stand behind the house. The tawa was quite dense with few other plants on the lower terrace but in the gully there were huge pukatea (*Laurelia novae-zelandiae*). The find of the day was a small creeping grass, *Oplismenus imbecillis*, a first record for eastern Nelson.

On a pleasant October day the group ventured along the Abel Tasman Coast to Stilwell Bay. The coast track was a treasure trove for the orchid hunters. The last of the winter flowering *Pterostylis alobula* was being replaced by spring flowering *P. banksii*, *P. graminea* and the occasional *P. foliata*. The delicate flowers of *Acianthus reniformis* also drew the photographers amongst us. At Stilwell Bay large flowers of *Corybas rivularis* proved a delight.

For those interested in ferns there was a great variety, including the three small hymenophyllums (*H. peltatum*, *H. cupressiforme* and *H. revolutum*). Down near the shore the uncommon tiny *Trichomanes endlicherianum* formed a mossy covering on dry rocks. For those interested in larger things a wide range of shrubs were in flower including lemonwood (*Pittosporum eugenioides*), rangiora (*Brachyglottis repanda*), heketara (*Olearia rani*) and much clematis.

Well, as always in Labour Weekend weather was at best mediocre, but nearly 20 of us crammed into the luxurious shearers' quarters at Titirangi. Saturday started foul but progressively cleared so we ventured out close to base. Close to quarters a male pigeonwood (*Hedycarya arborea*) strongly perfumed the air

in full bloom. Also along the stream supplejack (*Ripogonum scandens*) flowers were within reach and stood alongside ripe fruits. Here kohekohe (*Dysoxylum spectabile*) was heavily browsed by possums around the periphery of its crown. The brief foray along the shore revealed a few plants of interest. After lunch we ventured to the patch of lush healthy kohekohe forest behind the homestead.

Sunday promised well so we drove to Anakoha Bay and walked the road back to the summit. As we prepared to begin our walk we found an abundance of an unusual *Pterostylis*, probably the rather uncommon *P. foliata*. The road walk offered many opportunities to see high into tree crown at eye level. There were many cascades of *Clematis paniculata* (mostly male) and all three of the common tree orchids (*Earina mucronata*, *E. autumnalis* and *Dendrobium cunninghamii*). The forest progressively changed from lowland podocarp to upland beech forest and about halfway up the magnificent mountain cabbage tree (*Cordyline indivisia*) became common at the roadside.

Monday started fine and clear but rain soon arrived. Along most of the track the cryptic *Alseuosmia pusilla* was quite common and in open ground near the summit we saw abundant *Celmisia rutlandii* and *C. hieracifolia*. The bleak weather did not allow much time to dally and study but enough was seen to warrant a visit in better weather.

#### Coming Field Trips

20 December - Mt Arthur provided snow etc. permit, else Doubles

17 January - Red Hill

14 February - Ellis Basin

#### Camps

Christmas/New Year - Rainbow-Dip Flat

Anniversary - Upper Takaka-Hoary Head.

**Graeme Jane**, 136 Cleveland Terrace, Nelson

#### ■ Rotorua Botanical Society News

In September Cathy Jones led a trip to Oruatua Reserve on the margin of Lake Taupo. This was an opportunity to compile a species list for the reserve as well as look at seral vegetation along the waters edge.

Bruce Clarkson led a trip to Paengaroa Scenic Reserve, Taihape in November as a follow up to the divaricating shrubs workshop held in July. Twenty five plus people turned up (from far and wide) to take part in this "field-trip with a difference". This included carrying out some quantitative sampling in an attempt to understand the diversity patterns of divaricate shrubs. Measurements were taken (after coaching) along a transect stretching from the river edge, across the flat and up a hill. This was designed to pass along a species richness gradient (showing more divaricate species close to the river).

*Newsletter No. 26* (Aug 1992) includes:

"Vegetation and flora of Motuotau Island, Bay of Plenty" - Bruce D. Clarkson and Barry Spring-Rice.

"Coromandel field trip: 17-20 April 1992" - Beverley Clarkson and John Smith-Dodsworth.

"Additions to plant list in Botanical features of islands near the west coast of the Coromandel Peninsula, New Zealand. Esler, A.E. 1987: *NZ J Bot* (16) 25-44." - John Smith-Dodsworth.

"Lake Rotohokahoka field trip: 14 June 1992" - Beverley Clarkson.

"Vegetation and flora of Lake Pupuharau and environs, Kawerua" - Sarah Beadel.

Upcoming events:

12-13 December: Iwitahi orchids - Bruce Irwin

30 January - 1 February (Auckland Anniversary weekend): Waitaanga Forest, near Ohura (East Taranaki)  
- Barry Spring-Rice.

14 February: Ngapuketurua, Kaimanawa - Roger Crabtree.

**Sarah Beadel**, Secretary, Rotorua Botanical Society, Okere Road, R D 4, Rotorua

## ■ Wellington Botanical Society

### 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 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 studies 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 by 10 March 1993. 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 be made, and applicants informed of the results in writing, by 10 April 1993. 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.

### Upcoming events:

28 December - 8 January: field trip to Mt Peel, Mt Somers and Mt Dobson

15-(18)-19 January (Anniversary Weekend): field trip to Taranaki

6 February: workbee at Te Marua Reserve

15 February: evening meeting "Ecology of tawa in the central North Island" by Carol West

6 March: field trip to Titahi Bay

15 March: evening meeting "South Westland - an ecologist's paradise" by Kath Dickinson.

**Carol West**, Secretary, Wellington Botanical Society, 9 Mamari Street, Rongotai, Wellington 3

## ■ NZ Native Orchid Group

### Journal No. 43 includes:

A list of NZ orchid names, including changes since *Flora of NZ Vol II* (1970).

"Some success at cultivation of native orchids - and a dilemma" by K. Wilson.

"A brief history of *Corybas cheesemanii*" by I. St George.

Conservation policy - from Australasian Orchid Society.

**Ian St George**, Editor, 22 Orchard Street, Wadestown, Wellington

## Other News

### ■ *New Zealand Journal of Botany* - new editor appointment

SIR Publishing has announced the appointment of Frances (Fran) Kell to the position of Editor of *New Zealand Journal of Botany* from 2 November 1992.

Fran first worked in botany as a science technician at FRI Rotorua, mainly in mycology, for five years. After a period of child-raising and community involvement, she went to Victoria University as a mature student. She obtained her BSc in botany with "A" grades in most of her courses, and was awarded a UGC Senior Scholarship for her honours year. She gained first class honours, and was awarded a UGC post-graduate scholarship to carry out PhD research. Her PhD thesis on aspects of regeneration ecology of *Prumnopitys ferruginea* (miro) was submitted in November, and she is currently awaiting the decision on the award of the degree.

Fran is a member of a number of scientific societies and has published a number of scientific papers and others of interest to the science educational market.

Fran was employed as a scientist by MAF Technology for 18 months until June 1992. In that time she worked on the effects of organic fertiliser on crops and soils, and non-chemical methods of weed control. Fran has a broad knowledge of the many branches of botany plus writing and editing abilities, and welcomes this opportunity to combine the two areas as scientific editor of the *NZ Journal of Botany*. She is keen to maintain the broad regional scope of the *Journal*, and welcomes papers on all aspects of botany (including the newer disciplines) of the Pacific - from Australia to South America - and Antarctica, from authors working anywhere in the world.

**Brian Bradshaw**, Manager, SIR Publishing, P O Box 399, Wellington

*After five years as editor of the New Zealand Journal of Botany, Dr Carol West resigned in September. She now has a one year contract with the Department of Conservation as a botanist with a major responsibility for weeds. I am sure members will join with me in wishing Carol all the best in her new job and thank her for her professional editing of the Journal.*

#### **Editor**

#### **■ Pioneering botanist awarded Massey Medal**

Pioneering botanist Ella Campbell will be the third recipient of the prestigious Massey Medal in a special ceremony to be held 1 September at Wharerata. First awarded in 1990, the Medal recognises special contributions to learning, service to the University and the community.

Dr Campbell was born and educated in Dunedin, graduating with an MA First Class Honours in Botany (1934) before being appointed botany lecturer first at Victoria University College and then at Otago University. In 1945 Dr Campbell moved to the then Massey Agricultural College, and took up teaching BAgrSc, Dip Hort, Dip Farming and later science students. She was the first woman lecturer on campus.

Through her reputation as a world authority on aspects of New Zealand botany, Dr Campbell has also attracted many eminent botanists to Massey University. However Dr Campbell does not regret spending the bulk of her time teaching and said it has been extremely satisfying to see past students become eminent scientists throughout the world.

Dr Campbell was Senior Lecturer in Botany when she retired in 1976 after 31 years at Massey University. That year was a landmark year as she was also made a fellow of the Royal New Zealand Institute of Horticulture and was awarded a Doctor of Science from Otago University. However in her "retirement" she has continued full-time with her research and comes to Massey University every day. Dr Campbell has made significant contributions in this time to research in botany including liverwort biochemistry and systematics, fungal associations of leafless orchids, and peat bogs of northern New Zealand.

She also had a long involvement with women's hockey. Captaining the Otago Women's Hockey Team and the New Zealand University Team earned her three university "blues". She later started women's hockey at Massey and for many years was President of the Manawatu Women's Hockey Association.





Dr Campbell also speaks German; as many of the earlier texts were in German she had to learn the language to be able to study - a hurdle few contemporary students have to scale.

With over 80 publications to her name and a life time's experience of international travel, Dr Campbell isn't slowing down. She said that at 82 she is the "baby" of an international group of friends still working.

**Massey University, August 1992**

■ **Charles Fleming Award for environmental achievement**

Congratulations to Dr Ian Atkinson, Senior Ecologist at Landcare Research, Lower Hutt on receiving the Charles Fleming Award for environmental achievement in recognition of his outstanding contribution to New Zealand and international ecology and conservation for many decades.

Editor

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## NOTES AND REPORTS

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### Herbarium Reports

■ **Auckland Institute and Museum Herbarium (AK), Annual Report for period 1 July 1991 to 30 June 1992**

Staffing

In August 1991 Anthony Wright was appointed Acting Manager Natural History Collections, and following that became increasingly involved with the Museum Development Project, leaving a serious shortfall in curatorial input within the Botany Department. As a result, Ewen Cameron was recruited in October as temporary assistant curator. Mr Cameron took leave from his position as herbarium curator in the School of Biological Sciences at the University of Auckland. In November Antoinette Nielsen was employed as half-time data entry operator in the herbarium. These two appointments allowed the Botany Department to maintain its work programme.

Collection Management

10900 of the backlog of pre-1989 specimens were coded and entered onto AKILLES; these were mainly mosses and lichens completed by temporary staff on Lottery Board funding. The AKILLES electronic database now comprises 47502 records, which means almost one quarter of the collection has been entered onto the database in the three years since the inception of the databasing project. The reboxing and relabelling of the non-native vascular plant collection to relieve overcrowding was completed, involving 2560 boxes holding some 90,000 specimens. The 4620 new herbarium accessions came from a variety of sources: past and new gifted herbaria (e.g. J. K. Bartlett and Auckland Regional Authority Hunua Forest herbaria), staff collections, ongoing exchange programmes with other herbaria and donated specimens from amateur and professional New Zealand botanists.

The very large number of incoming loans (2521 specimens) primarily reflects the studies of two researchers based at the Museum: Dr Barbara Parris who is preparing a world-wide monograph of the fern family Grammitidaceae and Bruce Salmon who has started a review of the taxonomy and distribution of New Zealand sundew (*Drosera*) species.

Jack Mackinder has continued basic maintenance of the herbarium AKILLES database and has given assistance to Forest Research Institute and Waikato University herbarium staff who have installed or are about to install the system in their institutions. Mr Mackinder has also accessioned many of the new herbarium specimens and serviced all loan requests.

Once again the herbarium has benefitted from temporary or part-time staff on Lottery Board funding; Marcel Smits during study breaks has labelled the entire backlog of New Zealand lichen specimens and checked several thousand moss records prior to their databasing; Antoinette Nielsen, working part time since November, has entered thousands of specimens onto AKILLES; Rhys Gardner, part time, has coded backlog vascular plant specimens for entry onto AKILLES; Warren Buckingham spent six weeks curating

backlog lichen specimens and Margit de Man completed entering data for backlog specimens of native orchids and part of the fern collection.

All the mounting of new specimens has been undertaken during the weekly voluntary attendances of Joan Dow, Chris Mackinder, Meryl Wright and more recently Kay Haslett. Rhys Gardner has continued voluntarily to incorporate the new vascular plant specimens into the herbarium and to assist with difficult plant identifications. Wendy Patterson, since April, has twice weekly voluntarily assisted in proof reading new AKILLES-generated moss labels.

#### Fieldwork

Fieldwork and collection of herbarium specimens were carried out on 5-10 day expeditions to Tangihua Ranges (organised by the University of Auckland), Marlborough Sounds (Offshore Islands Research Group), Whangaroa (Auckland Botanical Society), Tongariro (University) as well as the regular monthly field trips of the Auckland Botanical Society. Ewen Cameron carried out two one-day field trips to southern Woodhill Forest and Whangapoua Estuary on Great Barrier Island for the Department of Conservation. In October and November Dr Rhys Gardner carried out field work and collected 277 vascular plant specimens on Waya Island in Fiji while contributing to a dictionary of the Western Fijian language.

#### Conferences/Workshops

A highlight of the year was the inaugural joint NZ Botanical Society/Australian Systematic Botany Society Conference held at the University of Auckland in November 1991. As chair of the organising committee, Anthony Wright coordinated and organised two field trips, a two day workshop, three days of conference papers and a range of social events and publications. The 9th annual meeting of New Zealand herbarium curators was held in the Museum Council Room the day after the conference. Mr Wright chaired the meeting and is chair of the New Zealand Herbarium Network for 1991-1992. With a total of 18 participants, it was the largest meeting of this group to date.

In July 1991 Anthony Wright attended a three day Department of Conservation sponsored Threatened Plant Workshop in Upper Hutt and gave a key-note address. Since the meeting, Mr Wright has been appointed to the New Zealand Botanical Society's National Threatened Plant List Committee.

In April Anthony Wright attended the 10th meeting of the Australasian Lichenologists Association at Hobart. It was an excellent opportunity for him to meet for the first time several Australian lichenologists with whom he has corresponded for many years. A highlight of the meeting was a field trip to south-west Tasmanian rainforest and sub-alpine areas.

#### Public programmes and activities

Lectures and talks were given to the third year Botany students at the University of Auckland, the Auckland and Waikato Botanical Societies, Forest & Bird Kiwi Conservation Club, an Auckland Landscape group and Normal Intermediate School.

Thirty horticultural students from Carrington Polytech and six grounds staff of the Auckland Domain visited the Botany Department on separate occasions to learn about preparation of plant specimens and the management and use of the herbarium in general.

Numerous public enquiries were answered and assistance given to various community and government organisations, particularly to the Department of Conservation.

#### Overseas visitors

Mr Mats Wedin and Dr Leif Tibell, Uppsala University, Sweden; Dr Barry Conn, National Herbarium of NSW, Sydney; Mr Ian Telford, Australian National Botanic Gardens, Canberra; Mr Bob Makinson, Australian National Botanic Gardens, Canberra, and Mr Edwino Fernando, University of NSW, Sydney.

#### Donated specimens

Mr A. R. Jamieson, Ms L. J. Forester, Drs J. E. and R. E. Beaver, Mr P. J. de Lange, Dr B. W. Hayward, Dr R. O. Gardner, Mr E. D. Hatch and Dr M. G. Goodey.

<u>Statistics</u>	(12 months)	(1990-91 15 months)
Accessions of numbered herbarium sheets		
30 June 1992	206806	
30 June 1991	<u>202186</u>	
Increase	4620	(11529)

Records on AKILLES electronic database		
30 June 1992	47,502	
30 June 1991	31,981	
Increase	15,521	(22,869)
Exchange specimens		
Outwards 142 specimens to 2 herbaria		(724 to 9)
Inwards 307 specimens from 6 herbaria		(1184 from 6)
Loans of specimens		
Outwards 38 [1185 specimens] to 19 herbaria		(53 [3182] to 21)
Inwards 23 [2521 specimens] from 10 herbaria		(18 [1558] from 11)
Total number of specimens out on loan	4856	(4445)

**Anthony Wright**, Curator of Botany, Auckland Institute & Museum, Private Bag 92018, Auckland

■ **Massey University Herbarium (MPN), Department of Plant Biology, School of Biological Sciences Annual Report**

The collection has been added to significantly by the relocation of the specimens, chiefly of agricultural plants, weeds, sedges and rushes, from the former Department of Agronomy into our herbarium. The additional specimens have yet to be accessioned. Our newly appointed herbarium technician, Lynda Dixon, spent several days recently at the Auckland Institute & Museum Herbarium learning herbarium techniques and will spend several days a week until the end of February incorporating new specimens. We are intending to start cataloguing all our existing and new specimens onto the AKILLES database as used by AK.

The main users of our herbarium are undergraduate students doing courses on NZ flora. These students are encouraged to donate their specimens to the herbarium. Students from the Plant Science and Veterinary Science Departments, and the Wanganui Museum Botanical Group, have also used the herbarium this year. Ella Campbell is the principal researcher using the herbarium frequently. This year she received loans from The New York Botanical Garden, The National Herbarium of New South Wales Royal Botanic Gardens, The Tasmanian Herbarium, and the Australian National Botanic Gardens Herbarium.

**Heather Outred**, Herbarium Curator and **Lynda Dixon**, Herbarium Technician, Plant Biology Department, Massey University, Private Bag, Palmerston North

■ **Herbarium of the Museum of New Zealand Te Papa Tongarewa (WELT) Annual Report 1991-1992**

Institutional Changes

The past year has been a particularly messy one with a large number of bureaucratic and organisational changes taking place. However, there is a feeling that the worst may now be behind us and we can look forward to a period of less dramatic change.

With effect from 1 July 1992, we have become the Museum of New Zealand Te Papa Tongarewa with a new Act of Parliament. Our functions remain essentially the same but we are now a more autonomous body controlled by a new Board.

Recently Government announced that construction of the new waterfront building would start next year, and that it would open to the public in about 1998. Botany is one of the sections which will be housed in this building, and a good deal of time has been spent planning the new collection storage areas, workrooms and offices. Time has also been spent on planning the outdoor facilities and planted areas of the new site.

Curatorial Review

The review of Curatorial Departments that took place last year has seen a complete change in the organisation of the old Natural History Division, Cultural Heritage Division and Art Gallery. Natural History is now a single Department of Natural Environment divided into: Collection Management, Collection Curation, Interpretation.

Each of these three divisions has its own Manager, responsible to the Director (Alan Baker), and a staff of 3-10 people.

Collection Managers are now solely responsible for all aspects of specimen preparation, care of collections, access to collections and loans. Fiona Pitt and Jeff Fox are the Collection Managers for Botany, under the Senior Collection Manager, Rick Webber.

Collection Curators are responsible for acquisition, research, information and contributions to Public Programmes (display, education, etc.). Patrick Brownsey is the Manager of this section, responsible for five other Curators including Wendy Nelson.

Interpretation includes a group of three people whose function is to plan and integrate all the display and educational activities of the Department of Natural Environment. The main objective this year is to create a Resource Centre of specimens and information for use by the general public and educational groups.

The most significant result of this Review is that Collection Curators no longer have any responsibility for the collections themselves, but, in theory, have more time to devote to research, acquisitions and Public Programmes.

#### Collection Management

2,720 new acquisitions were added to the collection this year. The majority of these (1,020) were ferns, boosted by the donation of David Glenny's Solomon Islands fern herbarium. Significant numbers of mosses, lichens and seaweeds were also added.

Databasing has continued to concentrate on the Sainsbury moss herbarium. Editing of the data is now almost complete and printing of the new packets about to begin. A package for inter-converting NZMS 1, NZMS 260 and latitude/longitude co-ordinates has been prepared and incorporated into the database.

A new EDP Manager has been appointed to the Museum of New Zealand with a brief to design and implement an institution-wide information system. This is expected to be in place by next year and will incorporate the system currently operating in Botany.

#### Research Projects

##### P.J. Brownsey

- Fern families Dennstaedtiaceae and Aspleniaceae for Flora of Australia
- Atlas of distributions of New Zealand pteridophytes
- Taxonomic studies on *Ophioglossum* and *Tmesipteris* in New Zealand
- List of rare mosses for Department of Conservation.

##### W.A. Nelson

- Synonymic list of marine macroalgae in New Zealand
- Revision of *Porphyra* in New Zealand
- Biology and ecology of *Curdiea*; Culture studies of marine macro-algae.

##### J. Fox

- Annotated checklist of Robert Brown collections held at WELT.

##### N.M. Adams (Research Associate)

- Handbook of New Zealand seaweeds.

##### R.W. Shepherd (Research Associate)

- Introduction of *Pinus radiata* to New Zealand.

##### R. Lewington and B. Polly (Research Associates)

- Mosses and lichens of Wellington region.

##### D.S. Glenny

- Pteridophyte flora of the Solomon Islands.

In addition, two ForST-funded projects are being carried out at the Museum of New Zealand:

##### I. Breitwieser

- Systematics of the New Zealand Compositae.

##### W.A. Nelson and G. Knight

- Elucidation of marine algal life histories using controlled environment growth chambers.

#### Publications

Brownsey, P.J. 1991: New Zealand Ferns and Allied Plants - being a further contribution to making known the botany of New Zealand. (The Lucy Cranwell Lecture 1990). *Auckland Botanical Society Journal* 46: 38-40.

- Elix, J.A., Polly, B., Nelson, W.A. and West, C.J. 1991: Additional lichen records from New Zealand, 5. *Parmelinopsis swinscowii* (Hale) Elix and Hale. *Australasian Lichenological Newsletter* 29: 4.
- Nelson, W.A. and Adams, N.M. 1991: Distribution of the adventive seaweed *Colpomenia bullosa*. *New Zealand Botanical Society Newsletter* 26: 12-13.
- Nelson, W.A., Adams, N.M., and Hay, C.H. 1991: Marine algae of the Chatham Islands. *National Museum of New Zealand Miscellaneous Series* 23: 1-58.
- Nelson, W.A. and Duffy, C.A.J. 1991: *Chnoospora minima* (Phaeophyta) in Port Underwood, Marlborough - a curious new algal record for New Zealand. *New Zealand Journal of Botany* 29: 341-344.
- Nelson, W.A. and Ryan, K.G. 1991: Comparative study of reproductive development in two species of *Gracilaria* (Gracilariales, Rhodophyta). II. Carposporogenesis. *Cryptogamic Botany* 2: 234-241.
- Ryan, K.G. and Nelson, W.A. 1991: Comparative study of reproductive development in two species of *Gracilaria* (Gracilariales, Rhodophyta). I. Spermatiogenesis. *Cryptogamic Botany* 2: 229-233.

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## Plant records

### ■ *Pomaderris hamiltonii* - a new locality

The northern New Zealand endemic shrub, *Pomaderris hamiltonii*, was formerly only known in the wild from the general areas of Warkworth to Omaha Bay and two further colonies on the west coast of the Firth of Thames (Moore 1986, Wilson & Given 1989).

On northern Great Barrier Island, 28 October 1992, I saw occasional flowering shrubs of *P. hamiltonii* scattered along the margin of Mabeys Road from Okiwi School to the start of the track to Te Paparahi (Northern Bush); a distance of over 5 km. There were also four plants 5 minutes walk up the Te Paparahi Track under 6 m tall kanuka. Most plants were growing with *P. kumeraho* which had mainly finished flowering, unlike *P. hamiltonii* which was in full flower. Other main associates were low manuka and *Lycopodium cernuum*.

It is remarkable that *P. hamiltonii* has not been recognised or collected on Great Barrier before now. One explanation is that it may be because botanists have not visited the area when the plants are flowering - when the distinction between *P. hamiltonii* and the very closely related *P. kumeraho* is most obvious (*P. hamiltonii* has open flower heads and pale yellow flowers, *P. kumeraho* has bright yellow flowers in tight clusters). A second explanation is that *P. hamiltonii* may possibly be a new arrival to Great Barrier Island - this can be judged more accurately when its full range on the island is known. A third explanation is that it may be related to the low feral goat numbers in northern Great Barrier over the last five years compared with the high numbers before then. The tallest plants were only 1 m high, which are short compared with over 3 m tall plants along the road margin east of Warkworth.

*P. hamiltonii* is absent from northern Te Paparahi (pers. ob.) but it may well be present in central and southern Great Barrier and should be searched for in these areas. When the full range and population size of *P. hamiltonii* is known on Great Barrier, the present "vulnerable" status for this plant should be reviewed with the possibility of reducing its threatened status, especially as the mainland colonies appear to be increasing (Rodney population) or maintaining themselves (Firth of Thames).

I thank the Department of Conservation for allowing me to collect plant specimens on northern Great Barrier. Voucher specimens are lodged in the Auckland Museum herbarium (AK).

### References

- Moore, L.B. 1986: *Pomaderris* revisited. *Tane* 31: 139-143.
- Wilson, C.M. & Given, D.R. 1989: Threatened plants of New Zealand. Wellington, DSIR Publishing.

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## Research

### ■ Survival Battle for Tiny Fern

So ran the title of a press report on page 9 of the *NZ Herald* newspaper on 17 September 1984. The subject was *Asplenium pauperequitum*, a small and unobtrusive fern which had only been recognised two years previously (by Peter Jackson), and formally named by Patrick Brownsey and Peter in the *NZ Journal of Botany* that same year (vol. 22: 315-321).

*Asplenium pauperequitum* is endemic to Tawhiti Rahi and Aorangi, the two largest islands of the Poor Knights Group which lies 22 km off Tutukaka Harbour on the north-eastern coast of Northland. In the introduction to the original description, Brownsey & Jackson state that this distinctive fern "is locally common with well established populations in several places on the islands".

I visited Aorangi Island later that year with a party of scientists from the Offshore Islands Research Group, and we were surprised to find only a very few, small populations of the fern, most of which exhibited signs of more-or-less severe dieback and insect damage. Salt-damage from violent marine storms was postulated as a cause of the former, while a common introduced scale insect, *Saissetia coffeae* (Walker), was identified as abundant on both mature green fronds and dead brown fronds of the fern.

As a result of these observations, the plant was considered to be at least vulnerable [as recorded in *Threatened Plants of New Zealand* by Wilson and Given (1989)], if not endangered. The Hauraki Gulf Maritime Park Board and the the Department of Conservation have supported several visits to the islands for continued monitoring of the species, and a programme to maintain the species in cultivation on the mainland.

The fern is extremely cryptic in its distribution. It favours two seemingly opposite micro-habitats, both associated with the spectacular inland andesitic bluffs which form such striking landforms on the Poor Knights (and has not, to date, been found directly on the coastal cliffs). Most obvious are plants growing in deep crevices of south-facing bluffs exposed to full light, such as those illustrated in Brownsey & Jackson (1984, fig. 6B) and Wilson & Given (1989, p. 120). More common, however, are plants growing in very low-light crevices right at the base of these bluffs, where trees and shrubs form a dense canopy, and where seepages and low light conditions promote the growth of blue-green algae. This contrasting micro-habitat is illustrated in Brownsey & Jackson's fig. 6A, C and D.

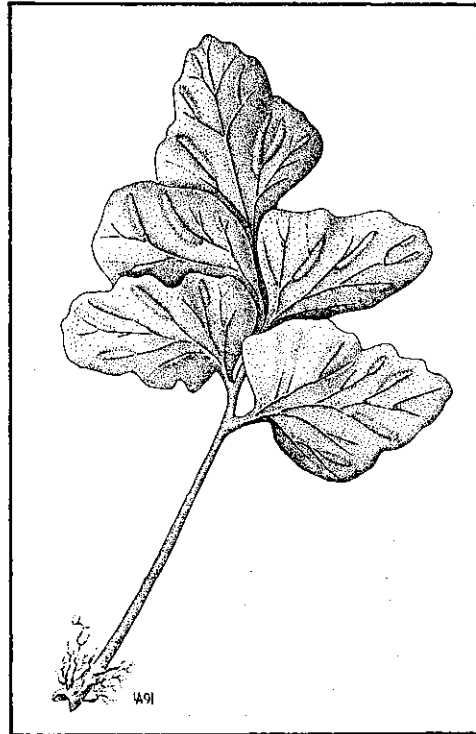
Fieldwork in 1989 and 1990 with Lisa Forester (DoC, Northland) and members of the Offshore Islands Research Group has shown both the recovery of many of the populations exhibiting dieback in the mid-1980s, and several new populations — one of which numbers several hundred plants. And the species is now established in cultivation in Auckland, though it is very slow-growing and tricky to propagate. All-in-all, though, the "survival battle" predicted in the newspaper headline appears to have been won — at least for now!

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### ■ Cabbage Tree Assessment in Bay of Plenty (Waihi to Maketu) 1991

#### Introduction

A survey was undertaken for the Department of Conservation (DoC) in Tauranga. It originated from concern for the cabbage tree population in the district and the apparent dieback of trees. The aim of the survey was to produce an understanding of the number of trees in the district, and their state of health. Our brief was to (i) to count all cabbage trees in the survey area that could be seen from a car, and (ii) to



***Asplenium pauperequitum***  
— underside of fertile frond, natural size

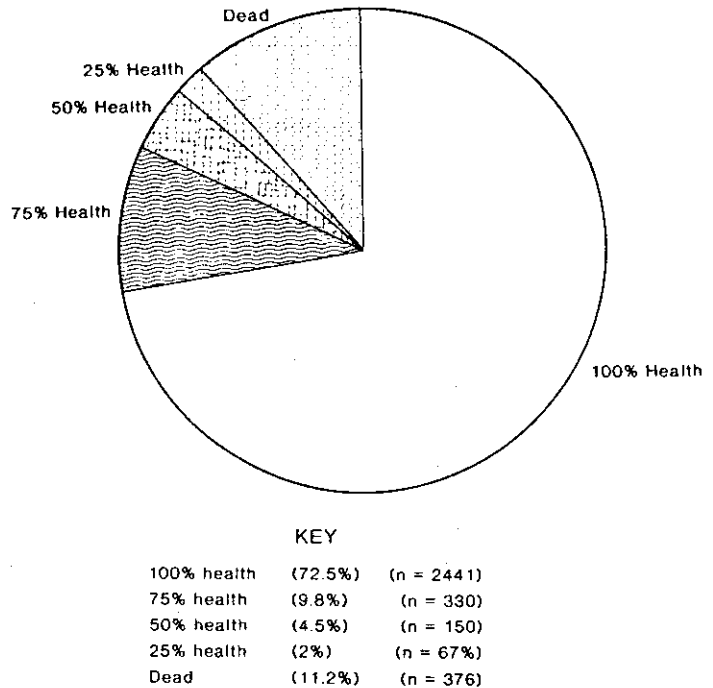
assess the health of those trees, making any observations that might shed light on their wellbeing.

**Methods**

The first consideration was, how to divide the area into suitable grids to enable reasonable progression in recording the trees, and their health. Also to calculate time taken, and mileage covered.

The map found to be most helpful was the "County of Tauranga, Index Maps and Planning Maps". Map scale was: index maps - 1:63,360; planning maps - 1:10,000. This latter rather large map was the most useful for determining our location in the survey area. It was of a size that enabled individual trees to be located and to give an accurate account of progress made.

After initial forays into the field, we noticed that very few trees occur on hilly ground on the approaches to the Kaimai Ranges. Further, counting trees in city and town areas gave no accurate detail because of the artificial nature of the plantings there. Grids of hill and urban areas were avoided as a result.



**Fig. 1: Assessment of cabbage tree health Waihi—Maketu 1991**

Fifty-four grids of the map were completed. Excluded grids were "low tree count", hill country, and urban areas.

Occasionally, with stands of significant size, it was necessary to get permission from a farmer to enter a property to better estimate number and health of the trees, as assessment from the road was impossible.

We were given a list of DoC volunteers with the suggestion that we might get help from those on the list (see Acknowledgements). This assistance increased the speed and coverage of the project immensely. George Strange and his team were responsible for counting and noting trees on five grids. We ourselves eventually counted 43 map grids.

The survey was carried out between January and July 1991. By comparison with recent years the weather was drier, windier, and probably cooler than usual in these months.

The best system we found, was to have three people in the car, one driving and spotting, one just spotting and one recording and aiding in spotting. Binoculars were a great asset for trees far back in paddocks, and where ground was too swampy to get close. Sometimes it was difficult to tell just how many trees were in a group or cluster. The count and health assessment being done by estimating numbers. However, the assessment of comparative health would be consistent. Healthy and unhealthy trees were all counted on the same basis in any area. Once we used a can of iridescent spray marker to tell which trees in a big clump we had counted.

**Results**

Two sets of data were compiled, one, detailing the whole survey area, the other area by zones. See also Table 1 and Figure 1.

The first illustrates that a total of 3,364 cabbage trees counted; 2,441 (73%) of these were healthy, 330 (10%) were assessed at 75% health, 150 (4%) were 50% healthy, 67 (2%) at 25% health (apparently dying), and 376 (11%) were dead.

Data was also collated for the four survey zones:

- (a) Waihi-Katikati  
253 trees; 61% healthy, 5% at 75% health, 9% at 50% health, 8% at 25% health, and 18% (45 trees) were dead.

- (b) Omokoroa-Te Puna-Bethlehem  
274 trees; 85% healthy, 4% at 75% health, 1% at 50% health, 1% at 25% health, and 8% (22 trees) were dead.
- (c) Papamoa-Te Puke  
953 trees; 87% healthy, 1% at 75% health, 2% at 50% health, 2% at 25% health, and 8% (72 trees) were dead.
- (d) Maketu-Pukehina  
1,884 trees; 65% healthy, 16% at 75% health, 6% at 50% health, 1% at 25% health, and 13% (237 trees) were dead.

Tree Health	Survey Area*				Sub Total	Sub Total %
	1	2	3	4		
100%	154	283	832	1,222	2,441	72.5
75%	13	12	11	294	330	9.8
50%	22	3	20	105	150	4.5
25%	19	4	18	26	67	2
0 (Dead)	45	22	72	237	376	11.2
<b>TOTALS</b>	<b>253</b>	<b>274</b>	<b>953</b>	<b>1,884</b>	<b>3,364</b>	<b>100</b>
<b>% Totals</b>	<b>7.52</b>	<b>8.14</b>	<b>28.32</b>	<b>56.0</b>		

\* Survey Area

- 1. Waihi - Katikati
- 2. Omokoroa - Te Puna - Bethlehem
- 3. Papamoa - Te Puke
- 4. Maketu - Pukehina

**Table 1: Summary of cabbage tree health data (1991)**

Data for the individual grid maps, or for other grid groupings are obtainable from the author held at the DoC office in Tauranga.

Trees assessed at 100% health were those showing little or no sign of damage from chewed fronds, or back loss. Those at 75% were showing sign of frond damage, and trunks bare or partly bare of foliage. The 50% count had quite severe damage to fronds and bark and may have had half of the trunks in a clump bare of foliage. Those classed at 25% appeared to be dying.

In some areas dead trees had been cleared making the number of dead trees lower than it might have been.

#### Observations

It seems that the health of a cabbage tree can be assessed by the condition of its trunk bark near the ground. A dead tree has lost most of its bark from up to about 50 centimetres or more from the ground. A declining tree will show a trunk of patchy bark. Some trees had numerous holes chewed into their leaves.

Although *Cordyline australis* grows almost anywhere, its natural habitat is wetland country. They thrive in the marshes and seaway canals of Maketu and Pukehina. Foothill country supports healthy cabbage trees, but not in abundance. Kiwi fruit orchard development has seen the clearance of many stands of cabbage trees that used to inhabit the flat areas on wetland margins. The occasional pile of bulldozed cabbage trees attests to this. Significant numbers of cabbage trees are found in inaccessible swampy valleys in flatland holdings, and in the primary foothills.

With regard to the cabbage tree "dieback" being investigated, we imagine that cabbage trees have to die sometime and that the 11% recorded as dead might not be extreme. Adding the 25% health class only raises the total to 14%. One hill country farmer said he had planted five cabbage trees, all of which died. He could see no obvious cause. From personal knowledge of cabbage trees growing in Palmerston North, the killing of a cabbage tree that is happy where it grows is almost impossible! Creosote, petrol and other toxins notwithstanding. Even if chopped off at ground level, new growth regularly reappears.



This report is very much a "layperson's" effort, yet at the very least, documentation showing where cabbage trees are, and even our estimations of their health, should be useful for further studies.

#### Acknowledgements

Assistance with the field survey was provided by Harold Tuffy, Rachel Fitt, Anne Brittenden, Brian Howell, George Strange and team, and Jae Burnett. W.B. Shaw (Conservancy Advisory Scientist, Department of Conservation, Rotorua) provided useful comments on a draft of this article.

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#### ■ **The big snow of August 1992 - some initial observations on its effects on the vegetation of Hinewai Reserve, Banks Peninsula**

The 980 hectares of Hinewai Reserve range from 20 m above sea level up to 806 m on Stony Bay Peak, and snow is common enough on higher ground. The weather station at my house is at 450 m. In 1991 snow fell here on 11 days and lay in the vicinity (sometimes just as patches in shady places) for a total of 21 days; snow lay on the highest parts of the reserve for 37 days. These figures are similar for the other years we have recorded since the inception of the reserve in 1987. On 23 May 1988 we had a heavy snowfall of about 30 cm at the Hinewai weather station, drifting up to 1 m. I note in the log book for that day that it "caused surprisingly severe and extensive damage to kanuka, beech, mahoe, gorse, fivefinger and pate across Hinewai". A year later it was hard to pick that damage had occurred unless one knew of the specific opened-up bits of canopy and the snapped limbs that the snow had caused.

The winter of 1992 was unusually long and cold. The first snow of the year fell at Hinewai weather station at the beginning of April, and snow fell again repeatedly during May, June, July and August. Between the 7th and 9th July snowfall was particularly thick above about 500 m, causing heavy damage to forest above 600 m but little damage below that level. This was the snow event that sparked off the first big stock rescue in inland Canterbury and was reported as the heaviest fall since 1973. On the 27th July another snowstorm put between 5 and 8 cm at the weather station and settled, although thinly, right down to sea level.

The morning of the 26th August was windless, with steady light rain through the thick mist, becoming heavier. In the afternoon the wind freshened from the SW, increasing steadily and becoming colder. By late evening snow began to settle, blizzard conditions set in for the night, and by morning 10-15 cm of snow lay on the ground. Snow continued all day on the 27th, driving in on a strong south wind and sticking heavily to trees and shrubs which bent low with the prodigious and unaccustomed weight. There was a continual sound of breaking branches and trunks. Snow was falling to sea level but it did not settle below about 100 m. By next morning the snow was 40 cm deep about the weather station. It continued snowing here but the freezing level was rising; at 450 m we were on the thaw line during the 28th and snow did not accumulate to a greater depth. Higher up, however, accumulation steadily continued until the morning of the 31st. Stony Bay Peak then presented an awesome sight - an unbroken blanket of white except for the bush gullies where the whiteness was peppered with grey. Snow depth above 550 m exceeded 1 m, with drifts 3, 4 and 5 m deep. Downvalley, lying snow petered out at about 200 m.

The rain equivalent of the 5 day storm was about 150 mm at the weather station. Despite efforts at scientific objectivity, our initial reaction to the storm's aftermath was heartbreak and dismay. We told ourselves immediately that sporadic heavy snow damage was simply part of the local ecology, and that it would be fascinating to watch subsequent vegetation changes. A botanical colleague insisted (without having seen the damage) that "Hinewai was a reserve, not a garden". But of course we are emotionally involved as well. It was hard to come to terms with decimated canopies, decapitated trunks, snapped limbs, mature trees uprooted, and saplings that we had watched develop for five years, squashed and annihilated.

Interestingly, the species that appeared to have suffered the worst thrashing was gorse, which lay flattened and broken across wide tracts above the 250 m contour, often with sapling fuchsia and kanuka remaining erect above the devastation. Broom stood erect up to about the 600 m contour, in impressive contrast to flattened gorse beside it, but above 600 m both gorse and broom took a hiding. The greatest breakage of native forest occurred along gullies and on forest margins where virtually every tree lost a major proportion of its bulk; hectares of bush looked as if a bomb had gone off above the tree tops.

Native species which showed the greatest susceptibility to snow breakages are as follows, roughly in order of magnitude of damage, starting with the most vulnerable: fuchsia, mahoe, lowland fivefinger, mountain fivefinger, kanuka, red beech, kaikomako, pate, horopito, lancewood, black beech, broadleaf, putaputaweta and narrow-leaved lacebark. Although leafless at the time, trunks and limbs of fuchsia up

to 30 cm diameter snapped like matchsticks; sapling fuchsia was almost unaffected. Putaputaweta bent double like rubber hose before some passed their breaking strain. Some pole red beech 15 m tall and 15-20 cm diameter bent over till their tips touched the ground; some snapped. Lowland ribbonwood of all ages, like fuchsia leafless when the snow fell, was virtually untouched except where whole trees were uprooted and toppled intact. Losses among thin-bark totara were also light. Across hectares of beech forest floor, broken leafy branches were piled on top of each other a metre or more deep, trapping and insulating snow which we uncovered a month later while clearing the tracks. (My carefully cultivated scientific objectivity gave way to blind rage and a gorilla-like frenzy of hurled-aside branches when I found that a lovingly watched sapling of *Cordyline indivisa* had been buried a metre deep under such a mish-mash of broken limbs!). Falling branches crushed many saplings and young tree ferns and (of little ecological significance but adding to the emotional distress of the observers) obliterated long stretches of track and broke signs. Above about 400 m many of the tree ferns had all their fronds broken so that these hung limply down the trunks, an appearance which will be shortlived of course as the next crown of fronds unfurls.

I am writing this seven weeks after the snow fell, with dwindling drifts still daubed across the summits despite the onset of NW winds and spring-like weather at last. Certainly this was an unusual meteorological event. But how unusual? "A fifty year event" has been a common catch-phrase in Canterbury since the snow fell. Colin Burrows, the Christchurch Press on 7th September 1992, documents about 20 "big snows" in Canterbury since 1860, rather more than one every 50 years, although not all of them necessarily affected Banks Peninsula nor dumped snow in the same way (the 1945 fall, for example, saw deep snow to sea level in the Hinewai area, judging from local accounts).

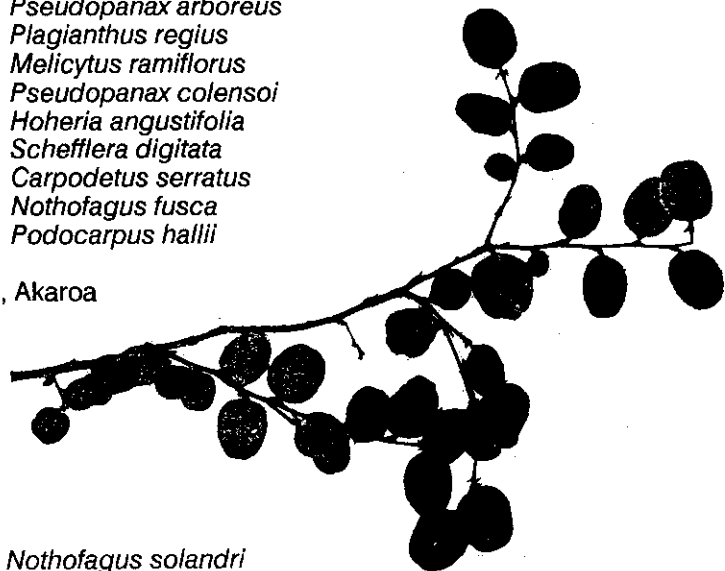
Seven weeks after we first gaped at the damage, we view the event as little else but a rather drastic pruning, one that may alter the course of vegetation change slightly and briefly, but of small ecological significance; a minor perturbation when compared with the effects of a major fire, for example, or a thousand goats!

Our photopoints, vegetation plots, and daily observations on this thoroughly monitored bit of Banks Peninsula should allow an assessment of this judgement in a few years time, when I will pen a sequel to this story.

Botanical names for common names used:

beech	<i>Nothofagus</i> spp.
black beech	<i>Nothofagus solandri</i>
broadleaf	<i>Griselinia littoralis</i>
broom	<i>Cytisus scoparius</i>
fivefinger	<i>Pseudopanax arboreus</i> and <i>P. colensoi</i>
gorse	<i>Ulex europaeus</i>
horopito	<i>Pseudowintera colorata</i>
kaikomako	<i>Pennantia corymbosa</i>
kanuka	<i>Kunzea ericoides</i>
lancewood	<i>Pseudopanax crassifolius</i>
lowland fivefinger	<i>Pseudopanax arboreus</i>
lowland ribbonwood	<i>Plagianthus regius</i>
mahoe	<i>Melicactus ramiflorus</i>
mountain fivefinger	<i>Pseudopanax colensoi</i>
narrow-leaved lacebark	<i>Hoheria angustifolia</i>
pate	<i>Schefflera digitata</i>
putaputaweta	<i>Carpodetus serratus</i>
red beech	<i>Nothofagus fusca</i>
thin-bark totara	<i>Podocarpus hallii</i>

Hugh D. Wilson, Hinewai Reserve, R D 3, Akaroa



*Nothofagus solandri*

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## BIOGRAPHY/BIBLIOGRAPHY

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### ■ Biographical Notes (8): William Lewis Townson (1855-1926)

W. L. Townson, son of Mary and Benjamin Townson, was born in 1855 at Liverpool, where his father was a surgeon and physician (1,2). His year of birth is usually given as 1850, following an error in the brief obituary notice by Aston (Tr. 1927 with portrait).

Whether Townson first worked in Australia, as did Cockayne, Goyen and Petrie, and when he arrived in New Zealand have yet to be determined. His Death Certificate notes that he had been "about 50 years" in New Zealand which would place his arrival at about 1876. However he did not register as a pharmaceutical chemist in New Zealand until 6 July, 1888, when his address was given as Westport, and his certificate number as 350 (3). Then, at the age of 34 (which could be in 1889 or 1890) he married Lucinda Dagg at Masterton (1). His name does not appear in the Electoral Rolls for Buller or Southern Wairarapa for 1884-87.

Of his time as chemist and druggist in Palmerston Street, Westport (4), Townson wrote in 1906: "A few years before the late Thomas Kirk's death [1898] I collected many specimens for him in a desultory sort of way, and he frequently asked me to take the matter up more earnestly and to prepare a list of the plants of the district. However, as I was engaged in a business which demanded close attention and in which I had little leisure, I could not see my way to accede to his request, but subsequently I was advised to reconsider the matter by Mr Cheeseman and I yielded, and for the last few years have devoted most of my spare time and my vacations to the work which it entailed" (5).

Townson added: "All my specimens were sent up to Auckland for Mr Cheeseman's inspection, and were carefully studied and identified by him, and proved of service in the preparation of the *Manual of the New Zealand Flora*". And in that work (1906) Cheeseman summarised Townson's Westport period as follows: "During the last five years Mr W. Townson of Westport, has diligently explored the greater portion of south-western Nelson, from the Mokihinui River southwards to the Grey River, repeatedly ascending all the higher peaks of the coast ranges, as Mount Frederick, Mount Rochfort, Mount William, Mount Furaday, Mount Buckland etc. He has also visited the Lyell Mountains, and many of the high peaks flanking the Buller Valley, as far up the river as Mount Murchison and Mount Owen. Most of this large district has never been carefully examined for plants, and Mr Townson has consequently reaped a rich harvest of novelties, most of which are described in this work. Among them are *Aciphylla townsonii*, *Celmisia dubia*, *Dracophyllum townsonii* and *D. pubescens*, *Gentiana townsonii*, *Veronica divergens* and *V. coarctata*, and the interesting new genus of Orchideae which I have named in his honour *Townsonia*." Further fruits of Townson's time in Westport were several fern records (Cheeseman, Tr. 1907), Petrie's *Euphrasia townsonii* (Tr. 1912) and Cheeseman's *Veronica townsonii* (Tr. 1913) and *Aciphylla indurata*, collected in 1904 (Tr. 1915).

Westport was still Townson's registered address in January 1910 (6) although he had left there some four years earlier. Thus, at the Auckland Institute on 3 October 1906, he said: "In presenting this catalogue of the plants of Westport and its surrounding district I feel sorry that I could not stay long enough there to make it more complete, as I had expected to spend at least another year, working up the distribution and altitudinal range of my various specimens, and in verifying the notes taken during my botanical wanderings. However, I found that to be impossible ....." (5). In fact his new address was "Chemist, Marton and Masterton" (4), presumably a return to in-law territory and from these bases he collected the following for Cheeseman, whose comments I include.

1. Vicinity of Marton: *Alisma plantago*, "the first specimens I have seen on the western side of the island" (Tr. 1907); *Scirpus americanus*, *Amphibromus fluitans* (Tr. 1908); *Nertera setulosa* (Tr. 1910).
2. Mount Egmont: *Raoulia glabra*, "the most northerly locality yet recorded" (Tr. 1910).
3. Mount Holdsworth, Tararua Range. An excursion in January 1908 gave the following records: *Dracophyllum uniflorum*, *Myosotis astonii* (Tr. 1910); *Aciphylla oreophila (intermedia)* (Tr. 1915). The several other records in Cheeseman's Manual (1925) were probably made at the same time. Aston's specimens of *M. astonii* from Mount Holdsworth in AK are also labelled January 1908, but he and Townson were not together as Aston's itineraries show (Tr. 1910).

As at January 1911 and 1912, Townson's registered address was Gisborne (6) where he was "chemist and photo stock dealer" in Peel Street (4). From the sea-cliffs to the north of the town he sent *Veronica*

*gracillima* to Cheeseman, the first North Island record (Tr. 1911). Then, from January 1913 to 1917 his registered address was Pukekohe, just south of Auckland. Here, early in 1915, he observed that the white-flowered variety of *Solanum aviculare* was by no means rare, and was induced by Cheeseman "to pay a little attention to it", which he did (Tr. 1920).

By January 1918, Townson was at Thames, where he had bought the business of the late J.W. Hall (*Podocarpus hallii*) (6, 7); and from here he continued to send specimens and observations to Cheeseman. Material of *Pimelea quidia* extended the range northwards by at least 150 miles (Tr. 1920). Observations on *Dactylanthus taylorii* showed that the scent from a plant flowering in a back room "was so attractive to flies that all day long it was surrounded by a little crowd of them" (Tr. 1920). And in November, 1919 and January 1920, he collected a novel *Olearia* from the upper Kanaeranga Valley, and lived to see it described as *Olearia townsonii* in Cheeseman's Manual of the New Zealand Flora (1925).

Townson died at Thames on 11 August 1926, and the age of 71, and was buried in the Shortland Cemetery (1). The Rev. James Milne (2) wrote that "floral offerings came from many to deck his bier, none more appropriately beautiful than those contributed - as culled and arranged by their own hands - from the pupils of the local High School, to whose Rambling Club he had been guide, counsellor and friend". As for *Townsonia* it now stands in the wings with *Cockaynea*, *Coxella* and *Colensoa* and is usually included in *Acianthus*.

For help with this note I am indebted to Ruth Mossman (Pauanui), Murray Frost (Hamilton), and Ewen Cameron (Auckland Institute & Museum).

(1) Death Certificate; (2) William Townson, Tribute to his Memory, by James Milne, Thames Star, 30 August 1926; (3) Register of Pharmaceutical Chemists of New Zealand, N.Z. Gazette, 25 January 1901; (4) Wisers P.O. Directory; (5) On the Vegetation of the Westport District (Tr. 1907); (6) N.Z. Gazette; (7) Advertisement in Bradbury's Illustrated Series, Thames Valley, 1918.

**E J Godley**, Research Associate, Landcare Research, P O Box 69, Lincoln

#### ■ **Lady Rigg - a pioneer plant scientist**

Lady Kathleen Rigg (née Curtis) celebrated her 100th birthday on 15 August 1992 (1). As indicated in the *Newsletter* item, Kathleen researched in the field of mycology at the Cawthron Institute. She was a pioneer in the field of plant pathology in New Zealand. As well as the senior fellow of the Royal Society of New Zealand (1), Kathleen is the only surviving foundation member of the Cawthron Institute. In the annuals of our plant science Kathleen should be placed with Lucy Moore and Lucy Cranwell as among our most distinguished women plant scientists and ranks with T.W. Kirk (1856-1936), A.H. Cockayne (1880-1966) and G.H. Cunningham (1892-1962) as a founder of research on plant pathology in New Zealand. The *Newsletter* states, "... she was best known for her mycology research at the Cawthron Institute between 1920 and 1952" (1). However Kathleen's major contribution to science was a study on the potato wart disease (*Synchytrium endobioticum*). The work was completed in the department of Plant Physiology and Pathology at the Imperial College of Science and Technology, London for her doctorate (D.Sc.) and was published as "The life-history and cytology of *Synchytrium endobioticum* (Schilb.), Perc., the cause of wart disease in potato" in *Philosophical Transactions of the Royal Society Ser. B.* 210; 409-478, 1921. Kathleen was 29 at the time the study was published. It remains one of the classic contributions to plant pathology and one of the most significant early contributions to plant science made by a New Zealand researcher. At the time of its publication the research was a contribution to the world pool of knowledge but was not a direct contribution to New Zealand plant pathology because it was not until 1970 that the potato wart disease was recorded in New Zealand (2).

In the early 1950s I recall G.H. Cunningham, the Director of DSIR's Plant Diseases Division at Mt Albert sounding off at morning tea about Kathleen's research. It was in the days when tea was taken in the old library at Mt Albert with the staff sitting around a table and their position at the table appeared to be sacrosanct. As an M.Sc. student at Auckland University I was encouraged by my supervisor Frank Newhook to sit at the table. On this occasion Cunningham said that Kathleen "had done nothing" since her research on the potato wart disease. It was the kind of sweeping statement that Cunningham made on occasion. The comment did induce me to obtain a copy of the 1921 paper which I still retain. Contrary to Cunningham's stricture, the record of her publications (3) does show she made many useful contributions, especially to disease research in the Nelson area. However Cunningham was correct in suggesting the 1921 paper was her most significant contribution to basic plant pathology.

I hope the apparent lack of knowledge about the contributions of Lady Rigg will be rectified in an account of Women in New Zealand Science which is in the course of preparation. Incidentally, I would appreciate any names readers can provide of pioneer women researchers in New Zealand science.

#### References

1. *New Zealand Botanical Society Newsletter No. 29*: 9-10, 1992.
2. Tickle, J.H. 1970: Threat posed to potato industry. *New Zealand Journal of Agriculture* 121: 78-79.
3. Miller, David 1963: "Thomas Cawthron and the Cawthron Institute", Nelson. The Cawthron Institute Trust Board. p. 153.

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#### ■ Defenders of the Golden Flower

While researching the formative years in botanical science of pioneer cytogeneticist John Hair (1909-1979) for the history of DSIR at Lincoln, I have noted a letter from George Simpson (1880-1952) of Dunedin to John and dated 14 October 1935. John who was located at the Wheat Research Institute at Lincoln College had requested data about *Ranunculus* and *Epilobium* and requested assistance in obtaining specimens. Under *R. paucifolius*, Simpson writes.

"Only found at the Castle Hill Basin in one place. Mr Blakley on whose property it grows would shoot you on sight if you tried to collect it. Only a few plants are known, and they are staked and numbered. Man traps are laid for systematic botanists and other vandals, and Blakley is a sure hitter with a shot gun. So is his wife. Wilkinson, the rock garden vandal in Nelson collected a lot once, but he has probably lost the lot. Try him. Mr McPherson, Christchurch Gardens may get seed from Blakley".

I thank Mr Ernst Beuzenberg, formerly of DSIR's Botany Division for providing the above letter.

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#### ■ In memory of Catherine Lam

Two years have elapsed since the death of Dr Catherine Lam. Catherine was quite a distinguished person and phycologist in the Hong Kong Environmental Protection Agency, until she was assailed with incurable cancer - of which she died in 1990.

Since she obtained her PhD in New Zealand, under the supervision of Professor Warwick Silvester, and since she subsequently worked for the DSIR Water Quality Laboratory at Hamilton, I feel some mention should be made of her contribution to New Zealand Phycology in the *N.Z. Botanical Society Newsletter*.

I was a co-examiner of her PhD thesis on blue-green algae in the Waikato River; and later I kept up a friendship with her - mainly by correspondence and by exchange of reprints, especially about pollution and red tides in Hong Kong Harbour, until her death at 44 years of age. Her funeral was held in Hong Kong on 2 October 1990.

Catherine was a gentle, loving, caring person, dedicated to her work and always remembering with affection her scientific friends in New Zealand; offering them hospitality when they visited Hong Kong.

I am enclosing extracts of the last letter (20 March 1990) which she sent me before she died:

"..... I am glad to learn that you are still working ..... I remember vividly the first time you showed me how to use your microscope and to take photos of the lovely algae. I attended the International Conference on toxic marine phytoplankton held in Sweden last June. I was hoping to see you there. I presented a paper which is published in the Proceedings. I'll send you a reprint when I get them.

I have now resumed work for the mornings only. Since I have to go to the hospital regularly, I cannot do routine administrative and management work. I am trying to write up some research papers, mostly on water quality aspects such as eutrophication. I feel good to be able to work again and hope to gain back my confidence gradually after such a trauma. I am determined to fight the disease and so get well."

**Vivienne Cassie Cooper**, Landcare Research, Ruakura Agricultural Centre, Private Bag 3123, Hamilton

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## DESIDERATA

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### ■ Request for flowers/pollen of *Beilschmiedia*

For several years I have been studying the microbial decomposition of pollens. I have been informed that there is a lack of *Beilschmiedia* pollen in the pollen record. This suggests that the pollen of this species may be particularly susceptible to microbial attack. I propose to construct some experiments in this direction. I would be most grateful if colleagues and associates could assist me in the acquisition of pollen. I will need about two grams air dry weight of pollen. I will extract the pollen but need a supply of flowers (*Beilschmiedia* spp.). These should be fully open when picked. Following collection they need to be air dried at room temperature on sheets of paper for 7-10 days. Air dried flowers could then be sent to me at:

Dr L.G. Greenfield, Plant and Microbial Sciences Department, University of Canterbury, Christchurch

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## FORTHCOMING MEETINGS/CONFERENCES

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### ■ Conserving Biodiversity, threats and solutions

A conference organised by the NSW National Parks and Wildlife Service to be held at the University of Sydney, 29 June - 2 July 1993.

The conference is directed at finding solutions to the crisis we face in stemming the current decline of biodiversity. Organised around the theme of threats to natural systems and species, the conference will seek to review the nature of these threats and the range of solutions available to counter them. The aim is to define a framework for action, ranging from practical management in the field to planning and legislative requirements needed to sustain biodiversity into the 21st century. The proceedings of the conference will be published as a book.

The Programme includes day and evening sessions on:

- Why conserve biodiversity?
- Habitat loss and restoration
- Feral plants and animals
- Degradation and pollution of water resources
- Changes to fire and climate
- Commercial use of native biota
- Can governments solve the problem?

If you are interested in attending this conference or in submitting a poster paper, please contact:

**Lynda Wild**, Conference Coordinator, National Parks & Wildlife Service, P O Box 1967, Hurstville, NSW 2220, Australia (ph. 0061-2-585 6417)

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