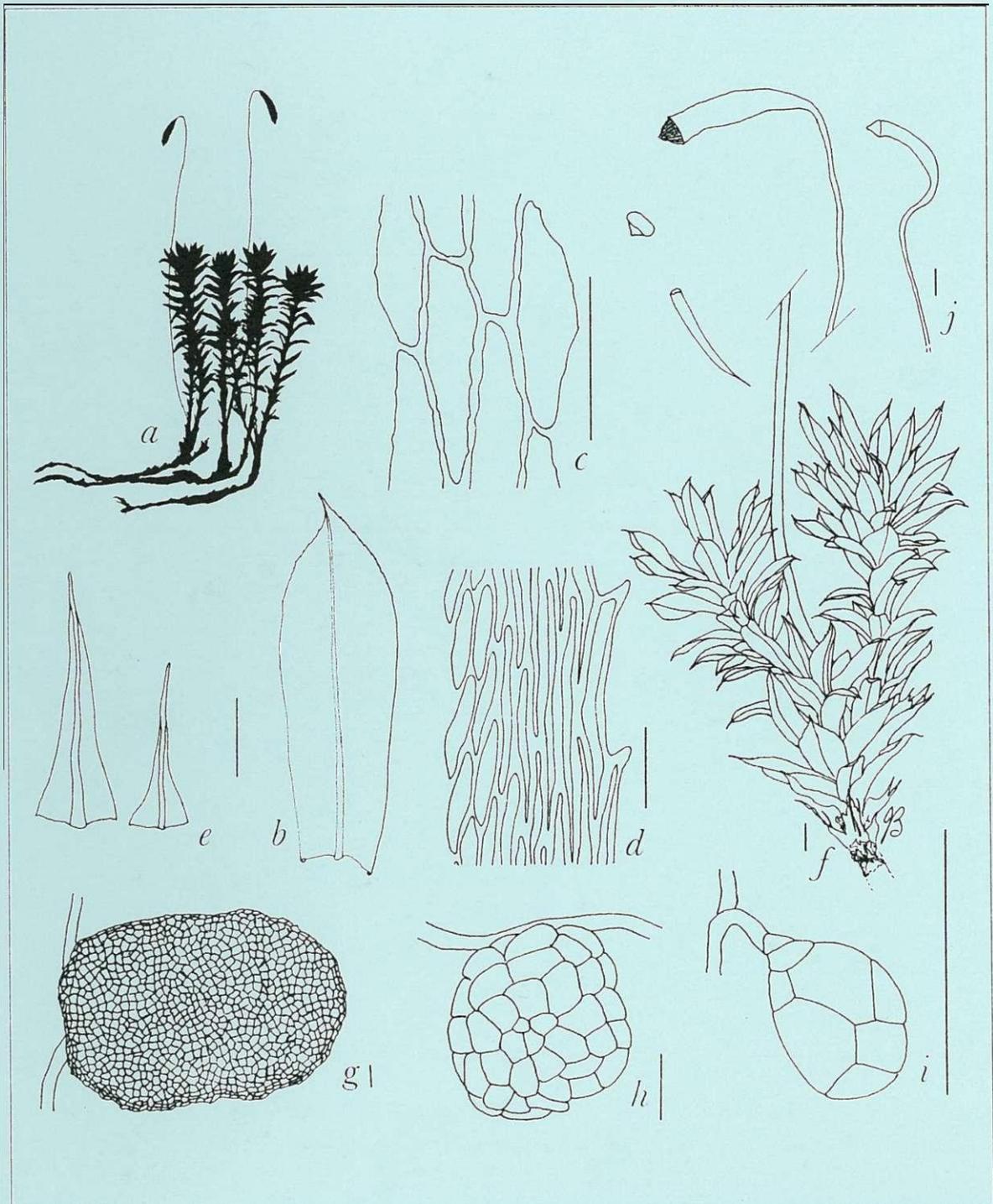


NEW ZEALAND BOTANICAL SOCIETY
NEWSLETTER

NUMBER 29

SEPTEMBER 1992



NEW ZEALAND BOTANICAL SOCIETY
N E W S L E T T E R
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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
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AUCKLAND

Subscriptions

The 1992 ordinary and institutional subs are \$14 (reduced to \$10 if paid by the due date on the subscription invoice). The 1992 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 29 (September 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 December 1992 issue (Number 30) is 29 November 1992.

Please forward contributions to: Ewen Cameron, Editor
NZ Botanical Society Newsletter
C/- Auckland Institute & Museum
Private Bag 92018
AUCKLAND

Cover illustration

An illustration by **Jessica Beever** from "The Mosses of New Zealand", 2nd Edition, by Jessica Beever, K. W. Allison and John Child, to be published next month by Otago University Press. This figure depicts *Bryum billardierei* (a-g, j) one of our most common and larger species of *Bryum*, together with tubers of two other common *Bryum* species: *B. microerythrocarpum* (h) and *B. sauteri* (i). Tubers, minute vegetative reproductive structures, have greatly helped the identification of species in this sometimes difficult genus. See discount offer for the book on page 24.

NEWS

New Zealand Botanical Society News

■ 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 1992 and close on 20 November 1992. 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*.

■ New Zealand Threatened Indigenous Vascular Plant List

Peter de Lange and Graeme Taylor reported the outcomes of the July 1991 Threatened Plant Symposium held at the Kiwi Ranch, Upper Hutt, in Number 25 of this *Newsletter* (September 1991). One of the recommendations of that Symposium was that the threatened plant list first initiated by David Given in 1976 should be reviewed and updated by an independent committee of experts after receiving submissions from the wider botanical community. The New Zealand Botanical Society was seen as a suitably independent organisation to appoint this committee.

In *Newsletter* No. 26 (December 1991) the NZBS Secretary reported that the NZBS Committee had met, endorsed the recommendations of the Threatened Plant Symposium, and appointed Peter de Lange, David Given, Peter Johnson, Colin Ogle and Anthony Wright to membership of the National Threatened Plant List Committee (NTPLC). It was noted by the NZBS committee that the chair of the NTPLC should be independent of Government Departments.

The Department of Conservation has now agreed to meet the servicing costs of the NTPLC, under the following Terms of Reference:

- (i) to receive submissions from the botanical community for changes in status within, additions to and deletions from the New Zealand Threatened Plant List;
- (ii) to meet annually to consider these submissions and any other evidence in editing the List;
- (iii) to publish an annual report in the NZ Botanical Society's Newsletter to keep the botanical community informed;
- (iv) to provide the Department of Conservation with an annual report of the current status of threatened plants in New Zealand.

The mechanics of the Committee's operations will be as follows:

- (i) an annual meeting of one-to-two days duration will be held, usually in Wellington;
- (ii) work at other times will be conducted by correspondence, telephone or fax;
- (iii) the committee will elect a chair from amongst its non-Government Department members [emphasising the independent nature of the Committee];
- (iv) Peter de Lange will act as Convenor and service-person for the Committee.

The NTPLC will meet for the first time in February 1993, and submissions under the first of the Terms of Reference above are now invited. The current Threatened Plant Checklist which follows is the September 1990 version compiled by David Given (minus the "Local" component which is not duplicated here to save space, but is available on request from the Convenor). Submissions should be sent by 31 January 1993 at the latest to:

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

THREATENED INDIGENOUS VASCULAR PLANT CHECKLIST

* indicates found naturally overseas

Extinct (Ex)

Carmichaelia prona
*Chiloglottis formicifera**
*Doodia aspera**

Lepidium obtusatum
Myosotis traversii var.
cinerascens

*Pterostylis nutans**
Stellaria elatinooides
Trilepidea adamsii

Endangered (E)

Anisotome acutifolia
Asplenium pauperequitum
Astelia chathamica
Baumea complanata
*Caleana minor**
*Calochilus herbaceus**
Carex inopinata
Celmisia macmahonii var.
macmahonii
*Chiloglottis validus**
Chionochloa spiralis
Chordospartium muritai
*Christella dentata**
Clianthus puniceus
Coprosma spathulata var.
"Surville"
Coprosma waima
Cortaderia turbaria
Corybas carsei
Cyathea kermadecensis

Davallia "Puketi"
Earina aestivalis
Gunnera hamiltonii
Hebe breviracemosa
Hebe "Unuwhao"
Helichrysum dimorphum
Hydatella inconspicua
Iti lacustris
Lepidium banksii
Lepidium kirkii
Lepidium sisymbrioides
subsp. *matau*
Leptinella nana
Metrosideros bartlettii
Myosotis albosericea
Olearia polita
Pennantia baylisiana
Pittosporum michieii
Pittosporum obcordatum
var. *kaitaiaensis*

Plantago spathulata
subsp. *picta*
*Pomaderris apetala**
Pomaderris paniculosa
var. *novae-zelandiae*
Pseudopanax gilliesii
*Pterostylis nana**
Pterostylis "linearis"
Ranunculus viridis
Scutellaria novae-
zelandiae
Sebaea ovata
Simplicia laxa
Tecomanthe speciosa
Theleophyton billardierei
*Thelymitra malvina**
*Thelymitra matthewsii**
Thelymitra "Ahipara"
*Wahlenbergia stricta**

Vulnerable

*Acaena pallida**
Aciphylla dieffenbachii
Aciphylla traversii
Amphibromus fluitans
*Austrofestuca littoralis**
Boehmeria australis var.
dealbata
Brachyglottis perdiciooides
Caladenia iridescens
*Calystegia marginata**
Carex chathamica
Carex ventosa
Carmichaelia kirkii
Carmichaelia williamsii
Celmisia adamsii var.
rugosula
Chordospartium stevensonii
Corybas "short tepals"
*Cryptostylis subulata**
Dactylanthus taylori
Eleocharis neozelandica
Elingamita johnsonii
Embergeria grandifolia
*Euphorbia glauca**
Hebe "Awaroa"
Hebe acutiflora
Hebe armstrongii

Hebe barkeri
Hebe cupressoides
Hebe elliptica var.
crassifolia
Hebe speciosa
*Hibiscus diversifolius**
Kunzea sinclairii
Lepidium flexicaule
*Lepidium oleraceum**
Leptinella dioica subsp.
monoica
Leptinella featherstonii
Leptinella rotundata
*Lycopodium serpentinum**
Macropiper melchior
*Mazus pumilio**
Myosotis australis var.
lytteltonensis
Myosotis colensoi
Myosotis petiolata var.
pottsiana
Myosurus minimus subsp.
novae-zelandiae
Myriophyllum robustum
Myrsine oliveri
Olearia pachyphylla
Olearia semidentata

Olearia "Waima"
*Ophioglossum petiolatum**
*Phylloglossum drummondii**
Pimelea "Three Kings"
Pittosporum dallii
Pittosporum obcordatum
var. *obcordatum*
Pittosporum turneri
Pomaderris hamiltonii
Pomaderris phyllicifolia
var. *polifolia**
Prasophyllum "aff.
patens"
*Pterostylis micromega**
Ranunculus macropus
Rhopalostylis "Chathams"
Rorippa divaricata
Spiranthes "Motutangi"
Sporodanthus traversii
Stilbocarpa lyallii
Stilbocarpa robusta
*Thelymitra "rough leaf"**
*Thelypteris confluens**
*Todea barbara**
*Triglochin palustre**
*Utricularia lateriflora**

Rare (R)

<i>Acaena rorida</i>	<i>Crassula manaia</i>	<i>cordifolia</i> "
<i>Aciphylla leighii</i>	<i>Crassula peduncularis</i> *	<i>Notospartium torulosum</i>
<i>Aciphylla trifoliolata</i>	<i>Crassula ruamahanga</i>	<i>Olearia chathamica</i>
<i>Aciphylla "flaccida"</i>	<i>Cyclosorus interruptus</i> *	<i>Pachystegia rufa</i>
<i>Adiantum formosum</i> *	<i>Davallia tasmanii</i>	<i>Parsonsia "Surville"</i>
<i>Alectryon excelsus</i> var.	<i>Dicranopteris linearis</i> *	<i>Phyllocladus "serpentine"</i>
<i>grandis</i>	<i>Dracophyllum viride</i>	<i>Pisonia brunoniana</i> *
<i>Anogramma leptophylla</i> *	<i>Epilobium purpuratum</i>	<i>Pittosporum fairchildii</i>
<i>Botrychium lunaria</i> *	<i>Fuchsia procumbens</i>	<i>Pittosporum pimeleoides</i>
<i>Brachyglottis arborescens</i>	<i>Gentiana antipoda</i>	var. <i>pimeleoides</i>
<i>Brachyglottis compacta</i>	<i>Geum pusillum</i>	<i>Pittosporum virgatum</i>
<i>Brachyglottis huntii</i>	<i>Gnaphalium nitidulum</i> *	<i>Plagianthus regius</i> var.
<i>Brachyglottis pentacopa</i>	<i>Grammitis rawlingsii</i>	<i>chathamicus</i>
<i>Brachyscome humilis</i>	<i>Haloragis erecta</i> subsp.	<i>Plantago obconica</i>
<i>Brachyscome linearis</i>	<i>cartilaginea</i>	<i>Poa aucklandica</i> subsp.
<i>Carex kirkii</i> var. <i>elator</i>	<i>Hebe insularis</i>	<i>rakiura</i>
<i>Carmichaelia appressa</i>	<i>Hebe macrocarpa</i> var.	<i>Poa pygmaea</i>
<i>Carmichaelia compacta</i>	<i>brevifolia</i>	<i>Poa senex</i>
<i>Carmichaelia curta</i>	<i>Hebe poppelwellii</i>	<i>Poa sudicola</i>
<i>Carmichaelia hollowayii</i>	<i>Hebe "bishopiana"</i>	<i>Polystichum "Chatham's"</i>
<i>Celmisia adamsii</i> var.	<i>Hebe "Takahe"</i>	<i>Pseudopanax arboreus</i>
<i>adamsii</i>	<i>Homolanthus polyandrus</i>	var. <i>kermadecensis</i>
<i>Celmisia morgani</i>	<i>Lepidium sisymbrioides</i>	<i>Puccinellia antipoda</i>
<i>Celmisia philocremna</i>	subsp. <i>kawarau</i>	<i>Ranunculus stylosus</i>
<i>Celmisia spedenii</i>	<i>Lepidium tenuicaule</i>	<i>Ranunculus urvilleanus</i>
<i>Celmisia thomsonii</i>	<i>Leptinella albida</i>	<i>Rytidosperma petrosum</i>
<i>Chenopodium detestans</i>	<i>Leptinella dispersa</i> subsp.	<i>Rytidosperma tenue</i>
<i>Chionohebe myosotoides</i>	<i>rupestris</i>	<i>Senecio hawaii</i>
<i>Christella "cf. dentata:</i>	<i>Leptinella pyrethrifolia</i>	<i>Senecio lautus</i> var.
<i>thermal</i> "*	var. <i>linearifolia</i>	<i>esperensis</i>
<i>Clematis marmoraria</i>	<i>Leucogenes "Peel"</i>	<i>Senecio marotiri</i>
<i>Coprosma obconica</i>	<i>Limosella curdieana</i> *	<i>Senecio "Cuvier"</i>
<i>Coprosma obconica</i>	<i>Luzula crenulata</i>	<i>Simplicia buchananii</i>
<i>"serpentine"</i>	<i>Marattia salicina</i> *	<i>Solanum aviculare</i> forma
<i>Coprosma repens</i> "Poor	<i>Muehlenbeckia astonii</i>	<i>latifolium</i>
<i>Knights"</i>	<i>Myosotis concinna</i>	<i>Stellaria decipiens</i> var.
<i>Coprosma rhamnoides</i>	<i>Myosotis laeta</i>	<i>angustata</i>
<i>"neglecta"</i>	<i>Myosotis petiolata</i> var.	<i>Stellaria "Poor Knights"</i>
<i>Cordyline kaspar</i>	<i>petiolata</i>	<i>Stipa petriei</i>
<i>Coriaria pottsiana</i>	<i>Myrsine coxii</i>	<i>Thelymitra tholyformis</i>
<i>Coriaria "Rimutaka"</i>	<i>Myrsine "Poor Knights"</i>	<i>Uncinia purpurata</i>
<i>Crassula hunua</i>	<i>Nephrolepis "cf.</i>	

Indeterminate (I) and Insufficiently Known (K)

<i>Alepis flavida</i>	<i>Hebe matthewsii</i>	<i>Myosotis oreophila</i>
<i>Brachyglottis</i>	<i>Hebe "Bartlett"</i>	<i>Myosotis "glauca"</i>
<i>southlandica</i> var.	<i>Hebe "Whangarei"</i>	<i>Myrsine "Burnett"</i>
<i>albidula</i>	<i>Hydrocotyle "Ecroyd"</i>	<i>Olearia hectorii</i>
<i>Carex edgarae</i>	<i>Iphigenia novae-zelandiae</i>	<i>Peraxilla colensoi</i>
<i>Chenopodium pusillum</i>	<i>Juncus holoschoenus</i> *	<i>Peraxilla tetrapetala</i>
<i>Corybas cryptanthus</i>	<i>Leptinella filiformis</i>	<i>Pimelea arenaria</i>
<i>Crassula colorata</i> var.	<i>Libertia peregrinans</i>	<i>Pimelea aridula</i>
<i>acuminata</i> *	<i>Melicytus "Burnett"</i>	<i>Pimelea tomentosa</i>
<i>Deschampsia pusilla</i>	<i>Myosotis cheesemanni</i>	<i>Ranunculus recens</i> var.
<i>Gentiana lilliputiana</i>	<i>Myosotis glabrescens</i>	<i>recens</i>
<i>Hebe annulata</i>	<i>Myosotis laingii</i>	<i>Utricularia australis</i> *
<i>Hebe imbricata</i>	<i>Myosotis matthewsii</i>	"Z ombi" (!)

Taxonomically Indeterminate and minor genetic variants

Endangered

Carmichaelia arenaria *Leptinella intermedia*
Carmichaelia fieldii "X It"

Vulnerable

Cassinia leptophylla var. *Ranunculus recens* *Sophora microphylla*
amoena "Manaia" "Chathams"
Pachystegia "Ohau Bluff"

Rare

Brachyglottis "Surville" *decumbens*
saxifragoides *Geniostoma ligustrifolium* *Ranunculus recens* var.
Carmichaelia nigrans var. *crassum* *lacustris*
Chionohebe glabra *Melicytus* "Egmont" *Wahlenbergia brockiei*
Corokia cotoneaster var. *Myoporum laetum* var. *Wahlenbergia simpsonii*

Indeterminate

Carex allanii var. "Surville" *Ranunculus recens*
Geum divergens *Logania depressa* "Moawhango"
Helichrysum aggregatum *Pygmaea armstrongii*

Possibly Naturalised

Presumed extinct Vulnerable Rare
*Myoporum debile** *Hibiscus trionum** *Fimbristylis squarrosa**

Endangered
*Atriplex cinerea**

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

Regional Bot Soc News

■ Auckland Botanical Society

Programme: September - December

19-20 September - Field Trip to Ongarue, Pureora.

7 October - Evening meeting: Pohutukawa and rata regeneration (Sandra Wotherspoon and Philip Knightbridge).

18 October - Field trip to Mt Kaitarakihi, Coromandel (Joint field trip: Auckland, Waikato and Rotorua Bot Socs).

4 November - Evening meeting: Workshop on grasses.

Another hand-bound issue of the ABS Journal, Vol. 47(2) has been published and includes articles on:
Native vegetation at Ann's Creek, Southdown by R.O. Gardner.

Whitebait to white paint: Maher Swamp, on the Barrytown lowland (North Westland), its history and prospect by R.O. Gardner.

Tibochina (Melastomataceae), the glorybushes by R.O. Gardner.

Notes toward the concept of "ecological district" Part II: *Greyia* in Auckland by R.O. Gardner.

Native forest at the Auckland Regional Botanic Gardens, Manurewa by E.K. Cameron.

Private forest remnants at Brookby, south-east Auckland by E.K. Cameron.

New Bulletin

Bulletin No. 22 "A vegetative key to New Zealand genera of trees and shrubs growing naturally in northern New Zealand" by Jack A. Rattenbury. This key has taken many years to develop and is designed to be used in conjunction with Poole & Adams "Trees and shrubs of New Zealand". Northern New Zealand is north of the Waikato River. The Bulletin is available from the ABS Editor for \$2 (includes P&P).

Sandra Jones, Secretary, Auckland Botanical Society, 14 Park Road, Titirangi, Auckland 7 (phone 0-9-817 6102)

■ **Canterbury Botanical Society**

AGM

The following officers and committee were elected:

President: Ron Close

Vice President: Colin Burrows

Secretary: Pat Morris

Treasurer: vacant

Committee: Roger Keey, Fiona Lees, Joan Radcliffe, Max Visch, John Ward.

Programme

Evening meetings:

2 October - "Patagonia 1992, familiar plants among a foreign crowd" - Peter Wardle

6 November - "Kanuka and manuka in Australia and New Zealand" - Warwick Harris

27 November - "Alpine plants" - Des Riach.

Field Trips:

12 September - Palaeobotany - Canterbury Museum, and living relations in Botanic Garden

October - Arowhenua reserves and buried forest at Seadown beach, South Canterbury

7 November - Kanuka and manuka species and cultivars in the Christchurch Botanic Garden

4-6 December - Weekend Camp, at Percival Laboratory, Kaikoura

3-10 January 1993 - Wanaka, based on ski club lodge at Albertown, to visit Treble Cone and Cardrona ski fields and the Pisa Range.

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

■ **Nelson Botanical Society**

The June field trip kept close to home with visits to a couple of gardens in Motueka. The first stop was the alpine garden of Mrs Silk. There was a good collection of overseas alpiners and quite a number of New Zealand alpiners, but most plants were resting for the winter. In one area she had pingao (*Desmoschoenus spiralis*) well established. Of particular interest was a corner of native trees and shrubs where several species of *Leptinella* and *Acaena* formed a firm carpet. In this area she had successfully established two rare plants - *Xeronema callistemon* from the Poor Knights Islands and *Tecomanthe speciosa* from the Three Kings Islands.

The second stop was at the home of Agnes and Bev Jackson. The main attraction here was to be the fernery but we also found quite a copse of native trees and shrubs. The fernery contained both native and introduced ferns and in the deepest, dampest corners quite a few filmy ferns. Others included *Todea barbara* and a beautiful specimen of the Prince of Wales feather (*Leptopteris superba*). Great drapes of *Earina autumnalis*, *E. mucronata* and *Dendrobium cunninghamii* occupied sunnier parts. In the copse tree ferns (*Cyathea smithii* looking quite frosted) and *Osmunda regalis* shared space with a wide range of planted trees.

In July we visited Shannel Courtney's place at Pohara. Everybody had a great time exploring the nooks and crannies of this interesting property perched behind the limestone cliffs at Pohara. Huge old northern rata top limestone outcrops and tower over a lower canopy of titoki, karaka, mahoe, ngaio, pigeonwood, kaikomako and the odd pukatea. Unusual plants included *Pittosporum cornifolium* in flower, the fierce lancewood (*Pseudopanax ferox*) and the local *Meliccytus obovatus*. A great range of exotic problem plants included almost everything you wouldn't want to have, some of which have been cleared.

In August we visited forest remnants along the Motueka River. The first stop was at Alvin Schroeder's property at Ngatimoti. The area has a very mixed lowland forest with much titoki (*Alectryon excelsus*),

pigeonwood (*Hedycarya arborea*) and on the ridge red and black beech (*Nothofagus fusca*, *N. solandri*). There was a tremendous range of leaf forms arising from hybridism between red and black beech.

Plants of special interest included the parsley fern (*Botrychium bifforme*), a huge pokaka (*Elaeocarpus hookerianus*) and hinau (*E. dentatus*). The wide range of ferns present included *Blechnum membranaceum* and *Lastreopsis microsora*.

In the afternoon we visited the Moss Scenic Reserve, close to Motueka. This proved a tremendously interesting place. We had not even stopped though, before we saw *Brachyglottis sciadophylla* scrambling over shrubs at the roadside. It was abundant at the roadside over a distance of more than 1 km. A ribbonwood (*Plagianthus regius*), two lacebarks (*Hoheria populnea* and *H. angustifolia*), kowhai (*Sophora microphylla*) and even a lonely *Brachyglottis hectori* occurred on the river terrace, and a forest similar to that as Schroeders on the hill above the road.

On the river flat we saw bamboo rice grass (*Microlaena polynoda*), a locally uncommon species, and the large undescribed form of *Pellaea* with falcate leaves was also quite common along with the usual trailing form of *Pellaea rotundifolia*.

Coming Field Trips

September 20 - Delaware Bay
October - Abel Tasman Sitwell Bay
November - Editor Hill
December - Mt Arthur, Doubles
January - Hoary Head

Camps

Labour Weekend - Titirangi
Xmas/New Year - Rainbow-Dip Flat
Anniversary - Black Birch

Graeme Jane, 136 Cleveland Terrace, Nelson

■ Rotorua Botanical Society

Our AGM was held on the 13 June. The following people were elected:

President: Barry Spring-Rice
Secretary: Sarah Beadle
Treasurer: Bev Clarkson
Editor: Stewart Wallace
Assistant Editor: John Nicholls
Committee: Bruce Clarkson, Roger Crabtree, Chris Ecroyd, Robyn Irving, Grant Milligan, Mark Smale, Dale Williams.

Upcoming events:

12 September - Ōruatua Reserve, Lake Taupo
18 October - combined field trip with Auck/Waik/Rot Bot Socs
7 November - Paengaroa Scenic Reserve, Taihape
12-13 December - Iwitahi.

Sarah Beadle, Secretary, Rotorua Botanical Society, Okere Road, R D 4, Rotorua

■ Waikato Botanical Society

Our AGM was held on May 12th and the following offices and committee were elected:

President: Paul Champion
Secretary: David Wardle
Treasurer: Catherine Beard
Committee: Dieter Adam, Liz Humphreys, Phyllis Leigh, Ron Locker, Helen MacKay, Warwick Silvester and Mark Thompson

Subscriptions were retained at: \$10 ordinary member or couple \$5 students.

Our events over the past few months have been well attended despite the miserable weather, starting with an excellent lichen workshop lead by Anthony Wright back in June. This was followed by a trip to the Colebaker Scenic Reserve near Port Waikato. This is one of the few reserved taraire forests in the Waikato and many coastal species including *Melicope ternata* and *Entelea arborescens* were found. Unfortunately there were high levels of both possum and goat damage seen, with massive piles of green leaves at the base of many canopy trees and heavily browsed understory.

Our second herbarium working bee was held in July and resulted in the majority of the backlog of samples being mounted and filed.

The August field trip was a walk along the Waikato Riverbank from the Rose Gardens to the Fairfield Bridge with the aim of cataloguing the many garden escapes establishing in this area. In many places *Tropaeolum majus*, *Acanthus mollis* and several other species formed dense carpets which excluded the almost ever present *Tradescantia*. Climbers were well represented including the nasty Madiera vine (*Anredera cordifolia*) although a quick look under the Bridge Street Bridge failed to locate Old Mans Beard (a City Council eradication campaign appears to be successful here). Further down the river festooning the ignimbrite cliffs were cathedral bells (*Cobaea scandens*) and pie melon (*Cucurbita ficifolia*). Some well intentioned person?! had thrown one of the massive fruits of this plant on to the path allowing its positive identification. Perhaps the find of the day was a small grove of healthy, fully mature king ferns growing within 100 m of Victoria Street!

The next few trips include next month's trip to Cathy Jones country, plus a talk on *Dactyloctenium* by Chris Ecroyd. In October we are hosting the joint Auckland-Rotorua-Waikato Trip to Kaitarakihi to be lead by John Smith-Dodsworth and November's trip is a cruise on Lake Whangape (if it stops raining!). For more information look in our next newsletter.

Paul Champion, President, Waikato Botanical Society, C/- Ruakura Agricultural Centre, Private Bag 3080, Hamilton

■ Wellington Botanical Society

Programme October-December

Field Trips:

3 October - Another south coast gully - Barbara Mitcalfe
7 November - Wilton Bush/Otari - Mike Orchard
5 December - Matarawa Bush - Carol West.

Evening Meetings:

19 October - "Encounters with Chinese botany" - Vincent Gray
16 November - "Present and future vegetation on Kapiti Island" - Steven Fuller.

Carol West, 9 Mamari Street, Rongotai, Wellington 3.

Obituary

■ Margot Forde - death of a prominent seed botanist

Dr Margot Forde, New Zealand's foremost specialist in the collection and storage of temperate pasture seeds, died in Palmerston North in June 1992 after a prolonged illness. Margot Forde had considerable standing as a leading scientist in the conservation of forage germplasm - seeds of grazing plants. At DSIR Grasslands (now known as AgResearch Grasslands) in Palmerston North, she was the curator of the NZ Forage Germplasm Centre, which is now an internationally recognised resource for pasture botanists and plant breeders. The NZ Forage Germplasm Centre is to be renamed in her memory as a permanent tribute to her work.

In collaboration with many plant scientists, she collected a wide range of pasture species, which are now being used in plant breeding programmes for pasture and turf situations. Margot Forde was a great character, with a tremendous sense of humour and a strong curiosity, and these characteristics saw her through many adventures during long seed collecting trips in strange lands.

Dr Forde began her career working for DSIR's Botany Division during 1954-1959 while completing her MSc on *Haloragis erecta*. As assistant to H. H. Allan and L. B. Moore in Wellington, she wrote the text for *Euphrasia*, *Hebe* (whipcord species), *Parahebe* and *Pygmea* for "Flora of New Zealand Volume 1". She also prepared the index for the Flora and most of the finished typescript, and checked proofs meticulously. All users of the Flora owe her a great debt.



Dr Forde started her seed collection work with DSIR in 1973 and over the years at Grasslands, she travelled far and wide to augment New Zealand's pasture seed collection.

In 1986 she participated in DSIR's first international seed collecting expedition through several Mediterranean countries, returning with substantial material including the unique safe endophyte fungus now used to protect farm animals from ryegrass staggers. One memorable journey was made to Inner Mongolia Autonomy Region and Xinjiang Uigur Autonomy Region of China in 1987, and Dr Forde had many subsequent science exchanges with Chinese botanic groups and organisations.

She was interested in China's temperate regions, where there are many variable species, and was particularly interested in pasture plants which showed cold and drought tolerance. Twenty days of travel helped her to understand the basic status of the resource distribution. She was serious in her work, and enthusiastic and sincere towards the people with whom she worked during her Chinese travels. Her humour was one of her endearing characteristics, and she created a deep impression with her Chinese colleagues.

She travelled through the southern regions of Russia, in the first international seed collecting expedition in that part of the world, during 1989. Such ventures extended further the seed collection at Grasslands, and the NZ Germplasm Centre now contains more

than 70,000 different accessions held under long term storage conditions.

Other recent achievements included the production of a valuable book on pollen for Glaxo Ltd, in collaboration with Massey University botanists, as an aid to people suffering from hay fever.

A request to the public for strange grasses in 1989 resulted in hundreds of samples from farms and gardens, giving strong evidence towards climate change effects on pasture composition, and showed how tropical grasses were spreading south and increasing in population.

Dr Forde was recently awarded the Allan greenstone mere for meritorious service to Botany in DSIR, and a 1990 Sesquicentennial Gold Medal for services to science. During her last year, she was collaborating with Dr Elizabeth Edgar on *Agrostis* and *Bromus* for the grass volume of the Flora, Volume 5.

Dr Deric Charlton, AgResearch Grasslands, Private Bag 11008, Palmerston North

Other News

■ Distinguished New Zealand Scientist turns 100

Lady Rigg, formerly Dr Kathleen Curtis, celebrated her 100th birthday on 15 August. Lady Rigg, who was born in Foxton in 1892, attended Auckland Girls' Grammar and the University of Auckland. In 1913, she won a Botany Senior Scholarship - one of the first to be awarded.

In 1915, Lady Rigg was awarded the prestigious 1851 Exhibition Science Scholarship. She continued her studies at the Imperial College of Science in London which eventually culminated in a DSc degree. Later she was also made a Fellow of the Linnean Society. As Dr Curtis, she was best known for her mycology research at the Cawthron Institute between 1920 and 1952. She was made a Fellow of the Royal Society of N.Z. in 1936 and is its oldest surviving member. Lady Rigg now lives in a Home in Stoke.

Bio-Bulletin No 7/92 August, 1992

■ **Government Science Structures Reorganised**

On 1 July 1992 ten Crown Research Institutes were established under the Crown Research Institutes Bill and have taken over the responsibilities of:

- the various divisions of the Department of Scientific and Industrial Research;
- the Technology Division and part of the Fisheries Division of the Ministry of Agriculture and Fisheries;
- the Forest Research Institute of the Ministry of Forestry;
- the Communicable Diseases Centre of the Health Department;
- the research arm of the Meteorological Service.

The 10 new CRI's are:

Industrial Research Ltd

NZ Forest Research Institute Ltd

NZ Pastoral Agriculture Research Institute Ltd

Institute of Geological and Nuclear Sciences Ltd

Landcare Research NZ Ltd

Environmental Health & Forensic Science Ltd

National Institute of Water and Atmospheric Research

Social Research and Development Ltd

NZ Institute for Crop & Food Research Ltd

The Horticulture and Food Research Institute of New Zealand Ltd

Editor

■ **New Department consolidates Marine Science strengths**

Up until recently Marine Science at Otago has been spread over three areas. Now, with the University Council approval in June, a Department of Marine Science has been established which will incorporate the Portobello Marine Laboratory, the Trust Bank Aquarium and the postgraduate programme based at 551 Castle Street.

Head of Department Professor Philip Mladenov said the formation of a department would enhance the profile of Marine Science. "It would also consolidate the many and diverse strengths we have in this thriving field at Otago" he said.

New courses

From this newly integrated department, academic developments will be able to forge ahead. While there are no immediate plans to develop an undergraduate programme, a greater variety of Masters courses is to be added to the existing programme, for example, an MSc course in Marine Conservation and Management is one of the options.

Research Centre

The Marine Science and Aquaculture Research Centre will continue alongside the department as a separate entity, concerned with contract research and consulting work.

It also serves to focus the expertise of staff from Marine Science and other departments on multidisciplinary problems. Some of these include seaweed farming and harvesting in collaboration with staff from Botany; studies of the Otago Harbour with staff from Surveying, and studies of orange roughy and local fisheries with staff from Mathematics and Statistics.

Staff Newsletter, University of Otago, August 1992

NOTES AND REPORTS

Plant Records

■ Conservation status of titirangi (*Hebe speciosa*)

Introduction

Titirangi, or napuka (*Hebe speciosa*), one of the most colourful flowering hebes, is an increasingly popular garden plant and progenitor of many hybrid hebe cultivars (Metcalf 1972). As with many popular garden plants, in its natural habitat, titirangi has always been considered uncommon (Cheeseman 1925, Allan 1961).

Most recently the species has been rated with the IUCN "vulnerable" category of threat by Wilson and Given (1989), citing as justification an apparent decline in the species range, its vulnerability to browsing animals and erosion of its coastal cliffside habitat. They also stated that titirangi existed at only four localities having been extirpated from three others (North Cape, near Hokianga Head, and Wellington).

We record one, possibly three new site(s), expand and clarify two other sites (one of which was recorded as "extinct" by Wilson and Given (1989)), and question whether it ever existed at North Cape. In addition, natural sites where the species has been presumably cultivated, recorded naturalised, or been transferred to, are noted. Aspects of the species general ecology are discussed.

Distribution of titirangi (*Hebe speciosa*)

The distribution of the species (both past and present) is summarised by Figure 1. The following text elaborates on this figure.

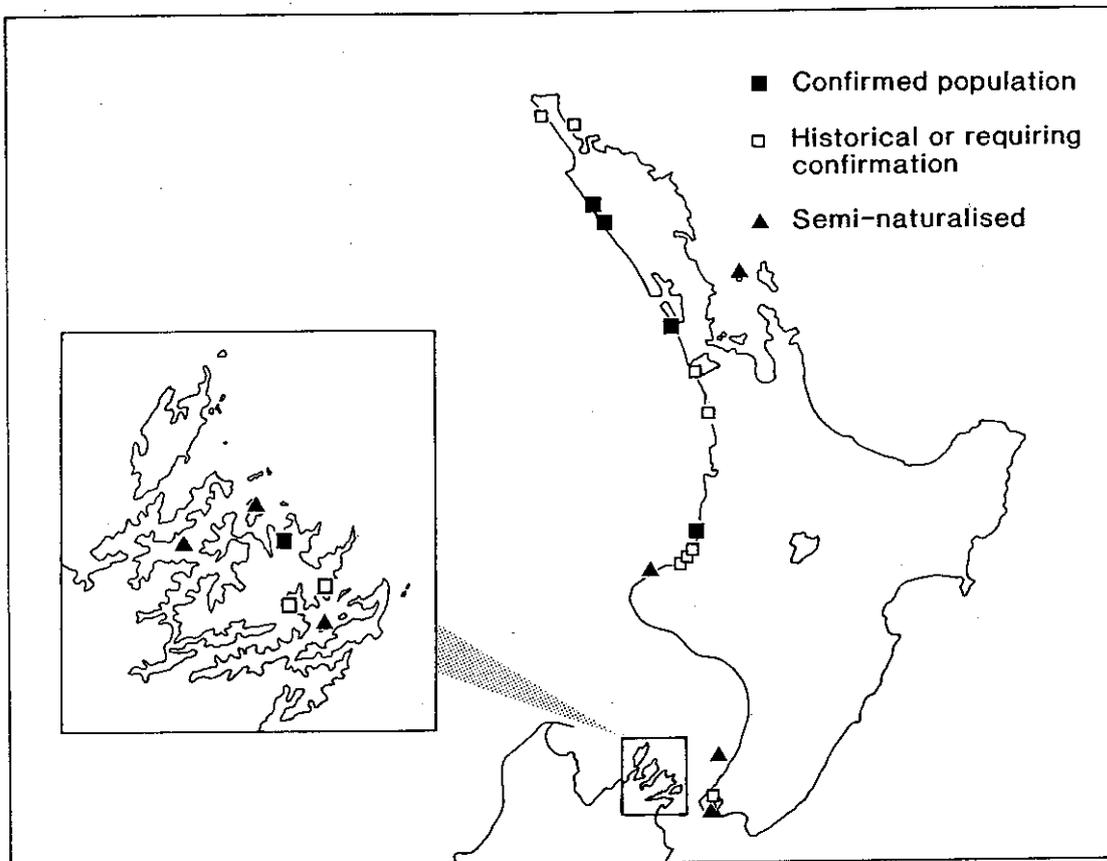


Figure 1. Distribution of titirangi (*Hebe speciosa*)

Current Sites

- Hokianga Ecological District (E.D.) - outer South Head, Ara Te Uru (type locality, type at K; suitable isotype material from this collection is also present in WELT). Recorded as extinct here (Wilson and Given 1989), but over 300 plants are still present (B.T. Maxwell and T. Hatch *pers. comm.* 1989; PdL, AK 207149). Substrate: volcanoclastic conglomerate.
- Tutamoe E.D., Maunganui Bluff - the largest population of many hundreds of plants (D. Petrie, AK 7651). Widespread in cultivation. Substrate: basalt.
- Kaipara E.D., South Woodhill - new record, discovered by EKC and P.J. Bellingham in December 1991 (AK 205959). A very local population of up to c. 150 plants. Substrate: andesitic breccia.
- North Taranaki E.D., Mokau - a small population of c. 100 plants (E.P. Turner, AK 107325). In cultivation. Substrate: sand dunes mantled by andesitic tephra (originating from the Egmont Volcanic Centre).
- Sounds E.D., Pelorus Sound, Titirangi Bay (J. Rutland, AK 7650) - a small population of 35 plants, reduced from 50 plants over the last four monitored seasons (S. Courtney *pers. comm.*, 1992). More than 60 plants were present in 1961 (Bodley 1961). Widespread in cultivation. Substrate: partially consolidated conglomerate and loess.

Possible New Sites

- Aupouri E.D., Ruakura (H.B. Matthews, AK 107327) 1915. This is possibly Ruakoura (= Perpendicular Point) by Mt Camel, Houhora Heads. This would be the first east coast record for the species; requires confirmation.
- Aupouri E.D., Pukekarea (Scotts Point) - recorded as "scarce" by Cheeseman (1897). Site requires confirmation. See notes under North Cape (Erroneous Site).

Historical Sites

- Awhitu E.D., South Head of the Manukau Harbour - titirangi was recorded from the cliffs along the western edge of South Head by the late R. Bell of Pirongia in 1960 or 1961 (notes held by DoC Waikato Regional Conservancy). Subsequent searches of the area by T. Hatch (*pers. comm.*, 1991) did not rediscover any plants. No voucher of this site is known.
- Raglan, E.D., Kaawa, Ngatutura Point - less than 10 plants discovered by PdL in 1986 (CHR 462620), reduced by disease to three plants in 1988, extinct in July 1992. Morphologically weak in cultivation. Substrate: basalt.
- North Taranaki E.D., Tongaporutu - collected by Allan in 1925 (CHR 10803). Probably extinct here. Despite periodic reports of its continued presence by local people, all searches conducted to date have failed to find any plants.
- North Taranaki E.D., near Pukearuhe, Whitecliffs - a few plants recorded from here in January 1991 (P. Jamieson *pers. comm.*, 1991). A recent search (May 1992) failed to find these plants.
- Egmont E.D., Urenui - recorded here by Cheeseman (1906), Allan (1961) and last collected in 1977 (J.K. Bartlett, AK 141800), apparently extinct here now (B.D. Clarkson *pers. comm.*, 1991).
- Wellington E.D., Port Nicholson - recorded here by Hooker (1864) & Cheeseman (1906) based on a Lyall record. We have been unsuccessful in locating a voucher. Recorded as extinct here by Allan (1961).
- Sounds E.D., Queen Charlotte Sound, Ship Cove - recorded here by Hooker (1864) and Cheeseman (1906) based on a Lyall record (K). Presumed extinct as there are no recent records from this area (S. Courtney *pers. comm.*, 1992).
- Sounds E.D., Queen Charlotte Sound, Camp Bay - plants held at Christchurch Botanic Gardens are reputed to have been collected here (D.R. Given, *pers. comm.*, 1992). There are no recent records from this area.

Erroneous Sites

- Te Pahi E.D., North Cape - recorded as extinct here by Wilson and Given (1989). Given (1977) cited two cultivated specimens *H. Carse* (1899), AK 197326, and *N.M. Adams* (1955), CHR 81750, as ex North Cape. The Carse collection was based on a plant apparently collected by Cheeseman from North Cape, while the Adams plant was collected by J.F. Adams (N.M. Adams *pers. comm.*, 1992) in 1896 from the *North Cape District*. Adams accompanied Cheeseman on a botanical exploration of the North Cape District, then defined as encompassing the land north of Ahipara (in the west) and Tokomata Point (in the east) (Cheeseman 1897). Therefore the Adams plant may not necessarily have come from what we now call the North Cape. In 1897 Cheeseman recorded titirangi from two sites in the North Cape District *viz* North Cape (Proper) and Pukekarea (Scotts Point). The North Cape plants are now treated as *Hebe macrocarpa* var. *brevifolia* (Allan 1961) while the Pukekarea record in the absence of any suitable vouchers, is omitted from the stated distribution of titirangi (Cheeseman 1906, 1925, Allan 1961). While one can speculate that Adams' and Carse's cultivated plants may have originated from

Pukekarea we have no proof of this; and a search of the site is necessary. In the interim then, based on current information we believe it is unwise to treat North Cape as a former locality of titirangi.

Presumed Cultivated

- Eastern Northland E.D., Mimiwhangata (*K.P. Olsen*, AK 155130) 1948. No other records from here in a wild state, but known to be cultivated locally. We suspect the collection is based on a cultivated plant.
- Stewart Island E.D., Valley of the Freshwater River (*D.L. Poppelwell*, WELT 13511) undated. The specimen is a late accession of the Petrie Herbarium and has been labelled in Petrie's handwriting (*J. Fox pers. comm.*, 1992). The species was not recorded from Stewart Island by Wilson (1982, 1987) and the collection site is probably an error. However titirangi is said to be present in Poppelwell's garden at Halfmoon Bay (*A. Roberts pers. comm.*, 1992) and the collection may have been based on these cultivated plants.

Semi-Naturalised Sites

Titirangi, as a popular garden plant (Metcalf 1972) has often been used in coastal situations as part of public amenity plantings and is a feature of many private gardens. While a reasonably hardy species in such situations it appears never to have fully established itself outside these plantings. The following records are based on casual occurrences of the species, where plants have established vegetatively from deliberate plantings. We are presently unaware of any truly authentic adventive occurrences (i.e. ones involving seedling establishment), of this species.

New Zealand Botanical Region

- Little Barrier E.D., Little Barrier Island - gardens of the Rangers House. Plants of Maunganui Bluff provenance said to have established in semi-derelict garden (*C.R. Veitch pers. comm.*, 1992).
- Egmont E.D., New Plymouth, Paritutu Rock - a single plant was recorded from underneath blackberry (*Rubus fruticosus* agg.) along the track from the carpark (*B.D. Clarkson, pers. comm.*, 1992). The specimen was probably planted.
- Cook Strait E.D., Kapiti Island, northern end of Rangitira Bay - established from deliberate plantings along beachfront (*C.C. Ogle pers. comm.*, 1992). The plants are confined to the proximity of the plantings and appear to be maintaining themselves vegetatively (*R. Colbourne pers. comm.*, 1992).
- Wellington E.D., Wellington City, Miramar Peninsula, Evans Bay (AK 203340). Sparingly naturalised along roadside scrub. Originated from layered offsets from specimens planted nearby.
- Sounds E.D., Bluemine Island - one plant established within an old campsite (*S. Courtney pers. comm.*, 1992)
- Sounds E.D., Forsyth Island - one plant established in derelict garden. Reputed to be of Titirangi Bay provenance (*S. Courtney pers. comm.*, 1992).

Outside New Zealand

- Hawai'i, Hawai'i Volcanoes National Park. Apparently established vegetatively in close proximity to planted specimens (*Wagner et al.* 1990, *Clarkson* 1992). The Flora record is based on plants with lavender flowers, and so may refer to a hybrid *Hebe* involving titirangi. This is supported by a recent collection from the park staff housing area in the national park at almost 1200 m asl (*A.R. Jamieson*, 29 October 1991, AK 206808). This specimen is *H. speciosa* x *H. stricta* var. *stricta* (det. *P.J. Garnock-Jones*). Despite this, *B.D. Clarkson (pers. comm., 1992)* has seen authentic titirangi as a casual of a derelict garden elsewhere in Hawai'i.
- U.S.A. California, Monterey Peninsula. A *Hebe* with large leaves and reddish flowers was observed established on coastal cliffs along with what was probably pohutukawa (*Metrosideros excelsa*) by *R. Hay (pers. comm., 1992)*. It seems that the species observed was either titirangi or a cultivar derived from it.

Transfer Site

- Sounds E.D., Maud Island - 57 plants of Titirangi Bay provenance planted in 1988 by the Department of Conservation, Nelson/Marlborough Regional Conservancy staff. While thriving no natural recruitment has been recorded (*S. Courtney pers. comm., 1992*).

General Ecology

In the wild, titirangi is a strictly coastal species colonising rocky, generally steep sites. The preferred substrate in the northern North Island appears to be basic and intermediate igneous rocks and associated alluvium, while in the southern half of its range the species utilises a wider variety of substrates including: calcareous mudstones overlain by tephra beds, consolidated sand dunes, greywackes, and recent conglomerates of variable composition within a loess matrix.

In cultivation, titirangi usually forms an open, spreading shrub reaching heights of 1-1.3m x 1-1.6 m wide. The species is not renowned for showy flowering and is slightly frost tender (Metcalf 1972). It is often short-lived (G. Platt *pers. comm.*, 1991). In comparison wild specimens of titirangi usually adopt a sprawling growth form, although there is considerable variation in both morphology, and general flowering behaviour of plants throughout the species' range. A feature of titirangi is its ability to form "clonal masses" resulting from the layering of branches. These often extend considerable distances from the parent plant.

Titirangi is normally found entangled amongst other coastal species such as: hangehange (*Geniostoma rupestre*), karo (*Pittosporum crassifolium*), *Coprosma* spp., *Cassinia leptophylla*, toetoe (*Cortaderia toetoe*, and *C. splendens*), oioi (*Leptocarpus similis*) and flax (*Phormium tenax*), or by itself just above the spray zone along nearly inaccessible cliff faces. Its natural tendency to grow through other shrubs and flax is possibly one reason why the species has been overlooked in areas where it has been recorded previously.

Flowering appears to be erratic, varying markedly between plants within populations but with no clear peak evident. As a rule specimens may be found in flower at anytime of the year, although some field workers believe the species flowers best in early winter (e.g. C.C. Ogle *pers. comm.*, 1992). In cultivation no seasonality has been observed in specimens from five different provenances grown in uniform conditions at Petone, Wellington.

The flower colour of titirangi is said to vary from dark reddish-purple or magenta, to violet-purple, with most variation observed in cultivated plants (Cheeseman 1925, Metcalf 1972). From casual observation of cultivated material and that sold as titirangi in garden centres we can only concur with the suggestion by Metcalf (1972) that such variation is caused by hybridism and not natural variation within titirangi. In fact all wild plants seen by the authors have dark reddish-purple flowers. After anthesis these invariably fade to violet-purple.

Both Lloyd (1985) and Wardle (1991) state that titirangi may be bird-pollinated. This suggestion was based on a personal communication made by Phil Garnock-Jones, who felt the corolla fleshiness and flower colour were possibly linked to bird-pollination. Subsequent research has shown that the species has scented flowers and viscous nectar, both features of insect-pollinated, rather than bird-pollinated species (Garnock-Jones *pers. comm.*, 1992). Despite this, bellbirds (*Anthornis melanura*) have been photographed visiting titirangi flowers on Little Barrier Island (Fig. 2). It is however unlikely that this is a



Figure 2. Bellbird (*Anthornis melanura*) visiting titirangi (*Hebe speciosa*) flowers at Little Barrier

frequent occurrence in the natural habitat of titirangi. In cultivated specimens, flowers are frequented by honey bees (*Apis mellifera*), bumble bees (*Bombus terrestris*), and blowflies (*Calliphora* spp.). In the field, native bees (*Leioproctus* spp.) have been observed visiting flowers at Ara Te Uru (Hokianga).

From both field observation and the study of cultivated plants flowers appear to set seed freely, although germination levels vary and plants in isolation rarely set viable seed, suggesting the species may be self-incompatible. In the wild numerous seedlings have been observed at Ara Te Uru, and Mokau usually germinating in high-light areas often amongst mats of such species as *Selleria radicans*, and *Zoysia* spp. However few sub-adults have been observed at either site and recruitment levels appear low.

Conservation Status

While anecdotal records suggest Hokianga, Maunganui Bluff and Mokau sites are "stable", we have no quantitative evidence to support this. At Titirangi Bay, (Sounds E.D.) regular monitoring of this population has indicated a 30% decline in the species since the programme first began 4 years ago. While it is possible that this decline is a function of an unusually long period of drought (S. Courtney *pers. comm.*, 1992), it is perhaps significant that the species has also declined or become recently extinct in the majority of the sites south of Maunganui Bluff. Clearly monitoring of the larger populations is needed (though very difficult) to determine whether a general decline of the species is occurring.

This review has also highlighted the shortfall of information regarding the species autecology. For such a popular garden plant it is perhaps surprising how little is known about its behaviour in the wild. It does seem that titirangi rarely establishes from seed in both garden and semi-wild situations, while field evidence from several sites indicates a low recruitment rate. Furthermore little is known about the species floral biology, longevity, and resilience in the face of predation and competition from weed species.

Another aspect requiring further research is the level of genetic variability within the species. Plants from all current sites are present in cultivation. When grown side by side under uniform conditions considerable variation in flowering patterns, leaf length, width and colouration, the stature of the plants, and the ability of the species to tolerate soil-borne fungal-pathogens is evident.

While we believe that further populations of titirangi will be discovered along the northwestern coastline of the northern North Island, based on current information we believe the present threat ranking of "vulnerable" is still appropriate.

Acknowledgements

The authors are grateful for the many comments received from: N.M. Adams, B.D. Clarkson, R. Colbourne, S. Courtney, J. Fox, P.J. Garnock-Jones, D.R. Given, T. Hatch, R. Hay, P. Jamieson, B.T. Maxwell, C.C. Ogle, G. Platt, A. Roberts, and C.R. Veitch. Chris Edkins drafted figure 1 and C.R. Veitch kindly supplied the photograph for figure 2. The keepers of the following herbaria AKU, BM, CHR, K, WAIK, WELT, are thanked for their assistance with our search for voucher specimens.

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■ *Senecio sterquilinus* Ornduff in the Wellington Ecological District

Senecio sterquilinus was originally recorded from only one North Island site; its type locality, viz a small islet, in what was probably the inner Napier Harbour of Hawke Bay (Ornduff 1960; Allan 1961; Webb *et al.* 1988). It was gathered here by Colenso in 1842 (Ornduff 1960) and, as there appear to be no recent records of the species from the Hawkes Bay region, it is probably now extinct there.

Elsewhere in New Zealand Ornduff (1960) recorded the species only from the Brothers Islands situated on the southern side of Cook Strait. Later workers expanded this distribution to include Stephens Island, parts of the Punakaiki coast (in particular Dolomite Point see Webb *et al.* 1988), near Westport, the northern coastline of Paparoa National Park and north of Greymouth (Norton and Lord 1992).

Aside from the Napier record there appear to have been no additional records from the North Island until September 1991 when I gathered plants of this species from Somes (Matiu) Island, in Wellington Harbour (vouchers lodged in AK, AKU, CHR, NZFRI, WAIK, WELT). I have since recorded the species from nearby Mokopuna Island, the Petone Beach, and have been forwarded specimens of this species gathered by Mr B. Bell's family in January 1992 from Ward (Makaro) Island¹.

Information about its abundance from Mokopuna and Ward is still sketchy, although it is probably common on both. Its occurrence on Petone Beach is sporadic, and it is best described here as a vagrant. On Somes *S. sterquilinus* is an abundant, conspicuous plant of the coastal cliffs and boulderfield. As observed elsewhere by Ornduff (1960, 1965) specimens reach their greatest size and abundance in the vicinity of bird nesting sites, where *S. sterquilinus* grows luxuriantly amongst guano, and guano enriched soils, with *Asplenium obtusatum*, *Blechnum banksii* and *Crassula moschata*.

Senecio sterquilinus is known to have a preference for high nutrient sites, and it has been described as an ornithocoprophilous species (Ornduff 1965). Certainly the species is typical of the guano enriched soils of bird colonies (Gillham 1960; Ornduff 1960; Allan 1961; Sykes 1971; Wardle 1991). Its abundance on Somes Island is therefore hardly surprising, as Somes is one of the most significant seabird breeding grounds in the Wellington region (R. Cossee *pers. comm.*, 1991); the bird numbers increasing sharply since the rodent eradication programme began in late 1988 (Anon. 1990).

In several sites on Somes Island *S. sterquilinus* is sympatric with *S. lautus*, however the latter is not a common species on the island, occurring mainly on the drier cliff faces along the southeastern part of the island, and amongst coastal scrub.

As *S. sterquilinus* was flowering at the time of my visit I was able to compare it directly in the field with *S. lautus*. Specimens of *S. sterquilinus* were readily distinguished from *S. lautus* by their much larger capitula; larger numbers of involucral bracts and ray florets (usually 20), larger stature of the plants (up to 0.75 m x 1 m), and by the more succulent villous leaves. However occasional plants of an intermediate nature were observed and these may well be hybrids. Hybrids involving both species arose spontaneously amongst cultivated specimens (Ornduff 1960), so their occurrence in sites where both species are sympatric is expected.

S. sterquilinus is an annual in the Wellington region. Based on observations of cultivated plants, Ornduff (1960) suggested it was a short-lived perennial herb. The strictly annual behaviour of Wellington plants indicate it may be an annual throughout its range.

Acknowledgements

I would like to thank my colleague Rod Cossee for his comments on Somes Island. The curator and staff of the National Museum Herbarium kindly assisted me during my search of their holdings of *S. lautus* and *S. sterquilinus*.

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¹A search of the National Museum Herbarium located a collection of a *Senecio* from Ward Island (WELT 16380, E.M. Heine, 2.9.1933). The specimen (which is of a young sterile plant) was originally labelled as ?horned poppy (*Glaucum flavum*), but was later filed under *S. lautus*. The collection, which is of a large plant with succulent, villous leaves, is almost certainly *S. sterquilinus*.

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Trip Reports

■ Ecological Forum Excursion to Southern Patagonia and Tierra del Fuego (2)

Timberline and above

New Zealand is known for its strikingly sharp, level alpine timberlines. Some of those we saw in Patagonia, especially in the lee of the northern ice cap at lat. 47°S, are just as regular. At such timberlines, closed deciduous forest of *Nothofagus pumilio* abuts directly on short alpine vegetation. However, as in New Zealand, marginal trees of the same species are reduced to krummholz on exposed spurs and snow-swept gullies.

Along the Beagle Channel, at lat. 55°S in Tierra del Fuego, the krummholz belt along the upper forest edge is wider and more extensive, and the uppermost beeches are invariably *N. antarctica*. The interaction of wind and snow in Los Glaciares National Park (lat. 50°S) leads to extensive krummholz of *N. pumilio*.

In the catchment of Lago Nahuel Huapi (lat. 41°S), extraordinarily wide belts of *N. pumilio* krummholz supercede *N. pumilio* forest. Eskuche (Phytocoenologia, 1973) showed that this related to the great depth of winter snow in the subalpine belt here; in early January, we saw krummholz still emerging from the snow pack. On Quelat Pass, at lat. 45°S on the western side of the Andes, evergreen forest of *Nothofagus dombeyi* comes up to meet krummholz of *N. antarctica*; and on Volcan Osorno (lat. 41°S), *N. dombeyi* itself grades into evergreen *N. dombeyi* krummholz, which in turn abuts on alpine volcanic desert.

Therefore, although there is remarkable variety in the form of timberline, all those we saw are formed solely by beeches. However, between latitude 39° and 41°S there are timberlines in which tall *Araucaria* trees stand among beech krummholz.

Vegetation above timberline consists mainly of cushion-field, recalling the summits of the Central Otago mountains and those of our far-southern islands. Some shared genera are familiar in their cushion plant role (*Azorella*, *Oreobolus*, *Phyllachne*), others are not (*Caltha*, *Oxalis*). Other shared genera include *Acaena*, *Euphrasia*, *Drapetes* and *Colobanthus*. Genera that we do not have include *Bolax*, *Primula* and *Nassauvia*. In flushes and late-snow hollows there are meadows with carices, *Marsippospermum*, *Rostkovia*, *Caltha*, *Ranunculus*, *Anemone* and several composites. There are grasses, but virtually no grassland *per se* other than patches of a *Cortaderia* that looks like one of our smaller chionochloas.

Over vast areas on the eastern side of the Andes, there is no continuous alpine vegetation, beech krummholz passing directly to scree and rock. The reasons probably include a very active regime of rock wasting, fierce winds that remove any fine soil, and periodic smothering of low vegetation by volcanic ash. In the area most affected by the recent eruption of Volcan Hudson, alpine vegetation, pastures, and the forest undergrowth were buried to depths of 0.5-1 m. Evergreen *Nothofagus dombeyi* trees had been badly smashed by the weight of ash whereas *N. pumilio*, which was leafless at the time of the eruption, was scarcely affected.

Where would our snow-tussock belt, that I have called "penalpine", fit into the Patagonian sequence? I suspect that it corresponds to the krummholz and uppermost deciduous forests in Patagonia, but one would need comparative data on altitudinal limits and climate to test this. Certainly the small-leaved deciduous beeches seem more cold and drought-tolerant than the evergreen beeches of Patagonia and they seem to be harder than our species. For instance, *N. pumilio* timberlines hold their level to the heads of formerly and presently glaciated valleys, unlike New Zealand beech timberlines which decline sharply in altitude in the upper reaches of such valleys.

Wetlands

As one moves south along the western archipelago of Chile, open moorlands increasingly predominate at the expense of forest (Godley, E.J. *Proceedings of the Royal Society (B)* 152, 1960). We did not visit the major areas of moorland, but were fortunate to see two outliers, one on a pass at lat. 45°S and the other at the eastern end of the Beagle Channel. This is the most "New Zealand" vegetation in Patagonia and Fuegia, with cushions of *Donatia*, *Astelia* and *Oreobolus*, together with other familiar genera such as *Marsippospermum*, *Drosera* and *Euphrasia*. There are also both evergreen and deciduous beeches, reduced to a few centimetres in height. The more northern example also included the cypress *Pilgerodendron uviferum*, and the dwarf podocarp *Lepidothamnus fonckii*.

Carex-dominated wetlands are common in valleys, and nearly always support open woodland of *Nothofagus antarctica*, and more locally *Pilgerodendron*. Valleys near the Beagle Channel have extensive valley bogs of a striking reddish hue, due to the dominance of *Sphagnum magellanicum*.

Secondary and adventive vegetation

My faith in the dictum that island floras are more vulnerable to invasion than continental floras was shaken by Patagonian experience. In the milder districts, wherever forest has been completely or partly cleared from fertile soils occupation by exotic broom, gorse, blackberry, European grasses and familiar herbaceous weeds is just as pervasive as in New Zealand. On less fertile sites, on the other hand, native shrub weeds are extremely vigorous, notably *Berberis* spp., *Baccharis* spp., *Pernettya mucronata*, and, in places, bamboo. The polymorphic *Discaria serratifolia*, like our matagouri, is an important coloniser of bared mineral soil. One Patagonian barberry, *B. darwinii*, is now a troublesome weed in New Zealand. Pity it isn't *B. buxifolia*, the addictively edible calafate berry. Presumably these vigorous plants leave no place for bracken (*Pteridium*), which we never saw.

Divaricating plants

One of the first questions people asked on our return was "did we see lots of divaricating plants?" In the strict sense, yes. But in the sense of non-spiny plants that we could identify with the "typical New Zealand divaricating shrub", an emphatic no, if one excepts juveniles of *Sophora microphylla*! Our observations seem at variance with those of Stephan Halloy and Ross McQueen; either we missed seeing vegetation that they are familiar with, or there has been too much emphasis on divaricating branchlets *per se*, and not enough on other features that Matt McGlone and I used when defining the term "filiramulate" (McGlone & Wardle, *NZ Botanical Society Newsletter* 11, 1988). I don't know where this leaves the "browsing" versus "climate" controversy!

Flower colour

The prevalence of white flowers in New Zealand, particularly in the mountains, contrasts with the variety of colour in northern temperate floras. My impression (and it is no more than that) is that the colour spectrum in the Patagonia flora is fairly similar to that in New Zealand and, as in New Zealand, many flowers are small, greenish and inconspicuous. However, many whitish flowers are suffused with pink or blue (e.g. in *Aster*, *Erigeron*, *Armeria*, *Gentiana*), to a greater extent than on the New Zealand mainland, but about comparable with the Australian Alps or Tasmania; and there may be a higher proportion of bright yellow flowers (e.g. in *Viola*, *Calceolaria*, and the orchid *Gavilea lutea*, as well as in such composites as *Senecio* and *Taraxacum* spp.). Having said this, one must note plants with tubular red corollas, that are presumably adapted for pollination by humming birds. Examples range from the forest undergrowth (*Asteranthera*), through forest shrubs (*Philesia* and *Desfontainea*), and lianes (*Mitraria*, *Lapageria*), small trees (*Embothrium*), to an alpine, the gorgeous water-fall plant (*Ourisia ruelloides*). And one must mention the swollen corolla lip of another alpine herb, *Calceolaria uniflora*, in which a pure white rectangle contrasts with a background of yellow merging into red.

Floristic patterns

In New Zealand, the progressive loss of warmth demanding species towards the south is more or less offset by gain in cold-tolerating species, and regional endemism is well-developed. In Patagonia, on the other hand, we gained the impression that as we moved south, we were seeing a reducing selection from the same suite of species that we first saw in the north. The loss of northern species and failure to gain substitute species is especially evident in the forest and shrublands. This trend continues into Tierra del Fuego, where no more than 3% of the 417 native species are considered endemic (Moore, "Flora of Tierra del Fuego", 1983).

Further, there don't seem to be Patagonia-based species-rich genera, comparable to *Hebe*, *Celmisia* and *Coprosma* in New Zealand. The nearest approaches are *Carex* with 17 species in Tierra del Fuego and

Senecio with 20; but these genera are species-rich world-wide. Relative to New Zealand, therefore, Patagonia seems genus-rich and species-poor.

It should be possible to check the validity of these impressions from the botanical literature. If they are true, they would raise interesting questions about the evolution and history of the flora and vegetation of the two countries.

Peter Wardle, Landcare Research NZ Ltd, P O Box 69, Lincoln

■ Tangihua Fungal Foray, 20-24 May 1992

The forest lodge at Tangihua Conservation Reserve near Whangarei was the site of the sixth national "Fungal Foray" in May 1992. This time there were 29 participants ranging in age from under two to over eighty, and a worthwhile time was had by all. There were the usual DSIR scientists and University staff, along with an enthusiastic band of photographers, naturalists and family supporters.

The overseas contingent was from Asia, in the form of a professional photographer Masana Izawa, and his support team of Hiromi Tanaka and Yasue Marunishi from Japan. He contributed to the activities by giving a lecture, and by demonstrating his macrophotography equipment and methods in the field. We also had Assistant Professor Wu Rongmei from the Edible Fungi Research Institute of Shanxi Province in China.

It had rained for nearly a week before we arrived, and there was a great diversity of fungi both for studying and eating. The farm paddocks by the road were full of field mushrooms, and we also sampled puffballs, honey mushrooms and *Auricularia* from the forest (Warning! Do not eat anything unless you are sure it is a good, edible species). The Tangihua Lodge, built by the Northland Lions Clubs deep in the bush, was clean, warm and well equipped. It was very well suited to our needs with microscope bench space and adequate room for book displays and specimen displays. Having three full days for the foray this time seemed to give a more relaxed atmosphere too.

The first day began with the lecture by Masana Izawa on photography of fungi assisted by a Japanese interpreter, and then demonstration field work in the forest around the lodge where we saw him putting the information into practice. It was very enlightening to have an insight into his philosophy and most of us will remember to approach fungi "as lovers" in future. We were fascinated by the simple equipment needed to make the difference between ordinary pictures and really good ones, and will be trying out his techniques. His own photographs were really superb, with crisp focus from fungus subject through to the background.

Eric McKenzie from DSIR Plant Protection showed slides on the Thursday evening of a professional trip he made earlier this year to study fungal diseases in Micronesia (Marshall Islands, Federated States of Micronesia, Palau) north of the equator.

On the second day we visited the Pukenui Walkway near Kamo. We had carpooled, so there was quite a collection of cars parked on the roadside, and the nearly one kilometre walk across paddocks, crossing great stiles over the old stone walls, served to separate the party somewhat. Once at the bush proper most parties took the shorter main circular track, but one group set off mistakenly and unnoticed on the very long route. The area had several different types of vegetation so yielded a good variety of fungal fruitbodies. We returned to Tangihua separately, and it wasn't until we were sitting down to dinner that we realised that the missing party couldn't still be looking for luminous fungi, two hours after dark. A call to Whangarei Police told us that a local farmer had just reported a car still parked at the end of the walkway. A search by a Police Constable with his dog together with a local Search-and-Rescue person finally found the missing four, cold and exhausted but unharmed. We were most relieved to have them back at the Lodge around 1.30 am, although their collections were still to be written up, numbered and put on the drier before they could sleep.

The last morning dawned sunny and mild, and most people enjoyed the local Tangihua tracks. Two indefatigable fungus hunters went off to the Waipoua Forest that day, despite the previous night's experiences. They didn't return until after dark, but they were careful enough to telephone from Dargaville to say that they were safe and on their way.

That night was rounded off with a dinner which included various oriental dishes contributed by the Chinese and Japanese guests, and another slide show, this time of fungi. Sunday morning was packing and cleanup, and after the camp photo we set off home.

We offer thanks to the Department of Conservation, Whangarei, for permission to study fungi in the reserves under their care, and also to the New Zealand Police and to Whangarei Search and Rescue for their willing help when needed.

Marie and Lawre Taylor, Botany Department, University of Auckland, P O Box 92019, Auckland

BIOGRAPHY/BIBLIOGRAPHY

■ Biographical Notes (6) Peter Goyen (1845–1927), an addition

I must apologise for overlooking a note on Goyen (*NZ Bot Soc Newsletter No. 28*) by Dr A. D. Thomson (1) which includes the suggestion that when Cockayne was teaching in Otago (1881–83) Goyen gave him the "initial impetus" to study New Zealand plants; and Thomson (2) quotes the following from the *Orchardist of New Zealand* (Anon. 1934). Cockayne's "first knowledge of our flora came when he questioned the late Mr. P. Goyen about two native plant specimens and was told that they were *Aristotelia racemosa* (wineberry) and *Angelica* (aniseed)".

(1) Botany Division Newsletter No 37, 1978; (2) Leonard Cockayne: horticulturist, NZJB, 1978.

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■ Biographical Notes (7) Joshua Rutland (1836–1915)

Joshua Rutland was born on 1 January, 1836, at Kanturk, County Cork, Ireland. His father, George Rutland, born in England in 1793, had served under Wellington, and became Inspector of Constabulary in County Clare. When George died in May, 1852, his young widow, Maria (1814–1888) took her 5 children to London; and in November they sailed for New Zealand, reaching Nelson in May, 1853 (1, 2, 3).

Maria Rutland rented a piece of land at Waimea West and kept a house cow or two. Julia, aged 19, taught at "Bearcroft" the nearby home of Sir David Monro (*Carmichaelia monroi* etc.); and when at home she taught Harriet, aged 11, and Henry, aged 8. The eldest son, Joshua, aged 17 was described as a weak boy, with poor eyesight and not much help to the family, whereas George, aged 15, a big boy for his age, went pit-sawing and learned to plough with bullocks (3, 4).

Joshua, however, was already studying the animals and plants of his adopted land. In his first paper "On the habits of the New Zealand grayling" he wrote: "My attention was first directed to the grayling in 1853. Being then resident in the Waimea (Nelson) ..."; and he described the stream that flowed past their house into the Waiti, a tributary of the Waimea River (Trans. N. Z. Inst. 1878).

In 1860 the family moved to Marlborough as described by Francis Herbert Rutland, George's son. "The Rutlands had to walk from Waimea West, where they had lived for seven years, over Mount Mangatapu, 3000 feet, and on down Pelorus Valley, and take their house cows with them through dense bush, 34 miles, to the land which they had rented the year before. The journey occupied three days. Mrs Rutland was 45 years old, her son George carried her over all the big streams including the Pelorus River above where the bridge had been started and washed away ..." (3). Their land lay on the Pelorus River opposite where Canvastown now stands. It included the deserted site of the Te Patoa pa, and was partially cleared of forest (3, 5).

A parallel migration was that of John Healy (1832–1915) grandfather of A. J. Healy (lately of Botany Division, DSIR) who arrived at Nelson on the "Sir Allan McNabb" in 1855. He had come to work for Henry Redwood at Appleby, Waimea West, and brought out for Redwood the first reaping machine and the first steam threshing machine to reach New Zealand. John became friends with the Rutlands particularly George. At some time after 1865 he brought his young family to Marlborough, where he first worked on a Redwood property at Spring Creek, and later on his own account, at Tuamarina. At least one of John's sons farmed in the Pelorus (3, and courtesy A. J. Healy).

On 4–5 April, 1864, Joshua, George, and two others discovered gold in the Wakamarina River, a tributary of the Pelorus. From his share of the gold and of the Government Bonus for finding a payable field Joshua bought Te Patoa. Here he remained for the rest of his life, sharing a house with his mother until her death

in 1888, while George and his family occupied another. He helped George on the farm where possible, but came into his own in two fields: local body administration and science (3, 5).

In 1870–72 Joshua represented Pelorus on the Marlborough Provincial Council (6). In 1870 he was unanimously elected first chairman of the Pelorus Road Board; in 1877 he was elected first chairman of the Canvastown School Committee; and on 5 May 1879 he was appointed Ranger of Crown lands within the Land District of Marlborough (N. Z. Gazette). His excellent report (1886) on the Rai Valley has been published in full (7).

As for science Joshua must have been largely self-taught. A glance at the books quoted in his publications shows wide reading, probably from a good personal library. His interest in natural history had begun by 1853, as shown above. By 1877 he was in touch with F. W. Hutton who communicated the grayling paper to the Otago Institute (Tr. 1878), and later communicated Rutland's papers on "The fall of the leaf" (Tr. 1889) and "The New Zealand bush-rat" (Tr. 1890) to the Philosophical Institute of Canterbury. Rutland's other botanical paper was "On the regrowth of the totara" (Tr. 1901).

Another important contact was Thomas Kirk who visited Canvastown, the Rai Valley, and the Pelorus from 20–24 November 1886 (8). Kirk identified *Olearia hectori* for the leaf-fall paper (Tr. 1889) and mentioned the following material sent by Rutland: *Carex muricata* from a grass paddock near Havelock (Tr. 1891); *Celmisia macmahonii* and *C. rutlandii* collected on Mt Stokes by Joseph McMahan, Rutland's young friend (Tr. 1895); and from Pelorus Sound *Hymenanthera crassifolia* (Tr. 1896) and *Lepidium banksii* (9). Kirk visited Mt Stokes in January, 1896 (8). He had written of Rutland's *Celmisia*: "I take this opportunity of acknowledging my indebtedness to Mr Rutland, whose name is attached to this handsome plant, for his ready and continuous assistance in elaborating the botany of portions of the Nelson and Marlborough Districts". After Kirk's death his son T. W. Kirk communicated some of Rutland's papers to the Wellington Philosophical Institute.

Rutland also corresponded with T. W. N. Beckett, the Christchurch bryologist, as well as Cheeseman and Cockayne (10). On 8 January, 1890, he told Beckett: "I only know a few of the names [of mosses] given me by Professor Kirk, since I became acquainted with him I have ceased attempting to determine species confining myself to cataloguing. The branch of botany I take most interest in is the Distribution of Plants local and mundane, the causes that have led to this distribution and its bearing on other subjects. I have lately written a small work on the cultivated plants of Polynesia in which I have attempted to trace the origin of the Maori people by means of the plants found in cultivation amongst them by the early voyagers. The Surveyor General Mr S. P. Smith is writing a Preface when completed the Government will publish it". This eventually appeared as "Traces of Civilisation": an Inquiry into the History of the Pacific" (Tr. 1897).

Forest clearing in the Pelorus for timber and pasture, disclosed traces of ancient human occupation, and Rutland reported on these and other matters in the Journal of the Polynesian Society from 1892 to 1905. His sight remained poor and in 1890 he told Beckett, "I can do nothing with the mosses myself, being unable to use the microscope." In the 1960's I met a friend of the late Harry Talbot, Mrs McMillan from Marlborough, who told me that Rutland became blind and that she wrote letters for him during his last eight years. However a letter to Cockayne in 1915 is in Rutland's hand. Mrs McMillan also told me that Rutland wrote articles for the Marlborough Express, under the pen-name Okarima.

Rutland's last publication on a curious case of human heredity, was probably the first of its kind in the New Zealand literature (Tr. 1908). He died in the Havelock cottage hospital on 4 September, 1915, and is buried in the small family cemetery on Ruapaka Point. This lies c. 2 km east of Canvastown above the main highway and looks out over the Pelorus River to Mount Rutland.

I am particularly grateful to Mr David Parr, Garden Motels Havelock, for a copy of F. H. Rutland's memories, and for showing me the Rutland cemetery.

(1) Gravestone inscription; (2) Registrar-General; (3) Memories of F. H. Rutland (written about 1954 when he was 80 years old); (4) Thoroughly a man of the world. A biography of Sir David Monro. Rex E. Wright-St Clair, 1971; (5) Canvas and Gold. Norman H. Brayshaw, 1964; (6) Marlborough. A provincial history. A. D. McIntosh, 1940; (7) The Rai and its people. The Rai Valley Centennial Committee, 1980; (8) Itinerary of Thomas Kirk's botanical expeditions B. G. Hamlin, Rec. Dom. Mus. 1971; (9) Students' Flora of New Zealand, 1899; (10) In CHR there are 5 letters from Rutland to Beckett, 1900–1901 (courtesy Bryony Macmillan); in AK there are 9 letters to Cheeseman, 1900–1902, and 1 to Cockayne, 1915 (courtesy A. D. Thomson and E. Sun); and in WELT there are some specimens but no letters (courtesy Fiona Pitt).

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■ New Zealand Botanists and Fellowships of the Royal Society

In congratulating David Lloyd on his recent Fellowship of the Royal Society, the comment was made: "It appears the only previous New Zealand botanists to be awarded such an honour are Leonard Cockayne and the Rev. J. E. Holloway"(1). In fact David could be considered the eighth New Zealand plant researcher to have been elected F.R.S. As well as Cockayne (1912) and Holloway (1937) the others are G. H. Cunningham (1950) whose specialist interest was in mycology and plant pathology, and R. E. F. Matthews (1974) in plant virology. Cunningham's university training was in botany in H. B. Kirk's Department at Victoria University College, though like Cockayne he was substantially self-taught. Matthews graduated B.Sc. and M.Sc. in botany from Auckland University College. The number of plant researchers in New Zealand with an F.R.S. can be extended to include C. R. Slack (1989). Roger arrived in New Zealand in 1970 and after 22 years here it is reasonable that he should be included as a kiwi F.R.S. His field of research is plant biochemistry, and like Cunningham and Matthews he comes within the broad concept of a botanist.

Finally, going back to the beginning, William Swainson (1820) whose range of interests included botany, was perhaps the first resident F.R.S. in New Zealand (2), followed by W. Colenso (1866 in 3, but 1886 in 4). Though born in Penzance, Colenso is considered the first New Zealander to be elected F.R.S. (3). In addition, these eight resident Fellows could be extended to include plant geneticist Sir Otto Frankel (1953) who though born in Vienna and educated in Berlin, worked in New Zealand for 22 years before moving to Australia in 1951; and plant physiologist L. T. Evans (1976) who was born in Wanganui and graduated from Canterbury University College and Lincoln College before going to Australia in 1956.

These Fellowships of the Royal Society help to emphasize the pre-eminence of plant science in New Zealand.

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A D Thomson, Centre for Studies on New Zealand Science History, 5 Karitane Drive, Christchurch 2

FORTHCOMING MEETINGS/CONFERENCES

■ Lichen Techniques Workshop

David Galloway and Jack Elix will lead a lichen techniques workshop at Nelson during the last weekend of January 1993 (Thursday the 28th through Sunday the 31st). They'll demonstrate spore-mounting, hand- and freeze-sectioning, thin-layer chromatography, and chemical tests (the new iodine series as well as the traditional *p*-phenylenediamine, potassium hydroxide, and calcium hypochlorite). As well, at least one field trip is planned to the Nelson Lakes or the Arthur Range, areas that are particularly rich in lichens and recently have yielded new collection records.

The workshop is expected to cost about \$150, which will include hire of the Polytechnic labs and accommodation in comfortable single rooms at the Nurses' Quarters near the Nelson Hospital at about \$30 per night (breakfast and dinner are included). If you're interested in attending or want more detailed information, you should contact Bill Malcolm soon by phone or post.

Bill Malcolm, P O Box 320, Nelson (phone 0-3-545 1660)

FORTHCOMING TRIPS/TOURS

■ Seventh New Zealand Fungal Foray, 10-14 May 1993 - First notice

We are organising another fungal foray for 10-14 May 1993 (Mon to Fri) at the Okataina Education Trust's Lodge at Okataina near Rotorua. We have booked this modern, well-equipped facility which will cater for

50-60 people, but we must have 20 to make the trip viable. We will need a deposit of NZ\$30 per person by the 1st November 1992 in order to secure a place. The total cost should be about NZ\$100 inclusive. Okataina Education Trust's Lodge is in the Okataina Lake Scenic Reserve, over 430 ha of scenic forest about 25km from Rotorua off the Rotorua-Whakatane Highway between Lake Rotoiti and Lake Okataina. Transport will be organised to ferry participants who need it from the bus or the airport in Rotorua; and we would be happy to meet and organise billets/transport for overseas guests from their first arrival at Auckland if you let us know beforehand. Microscopes will be available and there will be adequate bench and work space. The natural vegetation types in the area are mixed podocarp/tawa and kanuka, and there are exotic plantations of pine and eucalypts, all established on volcanic soils.

Please reply as soon as possible. We look forward to hearing from you to make this event a success.

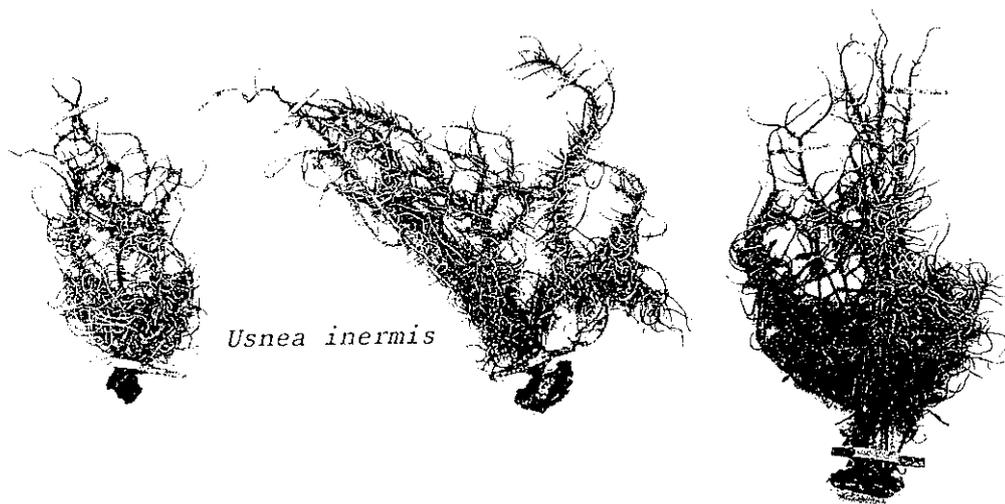
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PUBLICATIONS

■ Checklist of New Zealand Lichens

Since the *Flora of New Zealand Lichens* was published in 1985, many significant changes in the naming and classification of lichens have occurred. This checklist, by Dr David Galloway, incorporates new names and arrangements for 274 genera and is an essential reference companion to the *Flora of New Zealand Lichens*.

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THE MOSSES OF NEW ZEALAND

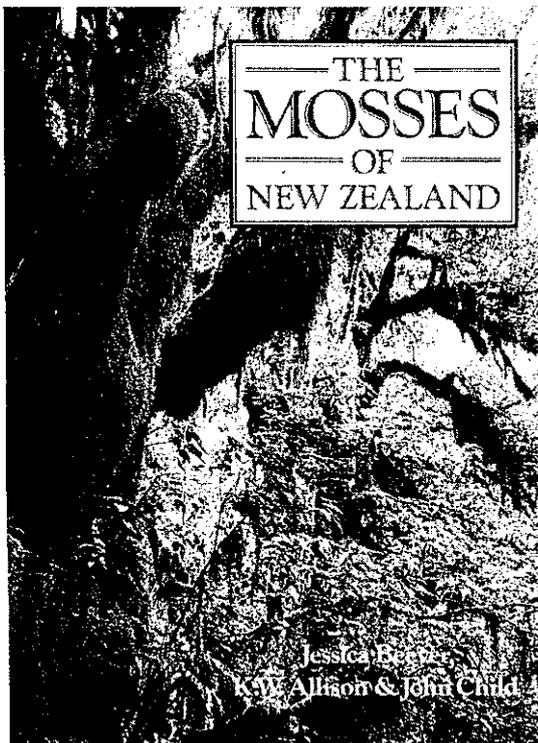
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BOOK REVIEW

■ **An Illustrated Guide to Fungi on Wood in New Zealand,**

by I. A. Hood, Auckland University Press. \$39.95.

It is perhaps a sign of New Zealand's coming of age mycologically that we are now seeing books published about New Zealand fungi related to a particular habitat. Ann Bell's "Dung Fungi", the first such comprehensive work for larger fungi, is now followed by this very useful guide to the larger fungi that might be found on wood, both living and dead. Nearly 200 species are described and illustrated by means of line drawings of both macroscopic and microscopic features, with additional colour photographs of field characters of 48 of these species. The descriptions are couched in simple terms and the general comments on each fungus are interesting and pertinent. Included is a workable identification key based almost entirely on easily observable field characters, as well as an exhaustive bibliography. Every effort seems to have been made to make the book accessible to all - to the novice as well as the specialist.

The work begins with some very good introductory sections on the history of mycological collecting in New Zealand, an introduction to the structure of fungi, their reproduction, dispersal and role in nutrient recycling in the forest, and a section on wood anatomy and the types of decay processes in various hosts. Biogeography and long range dispersal mechanisms of fungi are considered, as well as the economic importance of fungi in diseases of living trees and the decay of cut and fallen timber. Finally, a nice case is made for the importance of taxonomy and the overcoming of fear of Latin names.

The book is easy to use, the description of each species occupying one page with the accompanying illustration on the opposite page. Each illustration has a drawing of the fruit body approximately at the same magnification (usually X0.7-0.8 life size), accompanied by drawings of sections through the fruit bodies, spores, cystidia and sometimes portions of the hymenium and specialised hyphae from the context. This format is good, especially when comparing species, although it does result occasionally in some rather "white" pages where the fungus is either very small or over large for one page. The text is very readable, combining many personal observations of field characters by the author with appropriate information from the literature.

The larger fungi from all groups are represented and most of the species fully determined with up-to-date names, a reflection of the good systematic studies, particularly of the Aphyllophorales, by various workers in New Zealand and overseas. Not so fortunate is the very large group of gilled fungi (Agaricales), of which only some genera have been studied in detail for New Zealand as yet. But the very elegant drawings Ian Hood has supplied of some of these "unknowns" will make identification possible when the literature becomes available.

This book is a valuable addition to the very limited world literature on wood-inhabiting fungi.

Barbara P. Segedin, 16A Landscape Road, Auckland 4

LETTERS TO THE EDITOR

■ **Dear Editor**

2 July 1992

I am surprised at vehemence of Maggie Wassilieff's attack on the recent article in Forest and Bird May 1992 describing the new threatened species ranking system and its applications and ramifications. It seems like another misdirected assault by the chlorophyll advocates on an exciting new approach to conservation planning (which has already led to considerable increases in the conservation work and interest in threatened plants). Maggie's letter points to the variance between authors and over time of the number of threatened plants. The F&B article uses "threatened" for those taxa that had been ranked - this was stated in the article, therefore it is difficult to equate this with Given (1976), Wilson and Given (1989) or de Lange (1991). But it does show that as a proportion of the most threatened species we are fortunate that there are less plants in this category as a proportion of the total.

The aim of the system is to ensure that the biodiversity of Aotearoa is maintained and the ranking system attempts to identify those most at risk from extinction. Therefore I find Maggie's comparison of birds and

plants a non-issue. Many plant species can survive with a few individuals and be recovered, whereas most vertebrates cannot be cloned, self fertilised or grown in a nursery. *Tecomathe speciosa* is likely to recover on Three Kings Islands from the last individual plant, but the outlook for black stilt, takahe, kakapo and short-tailed bat is pretty grim.

The ranking system was devised by a range of biologists with interests in most native plants and animals and the actual ranking was carried out by wider groups of specialists who consulted most other specialists working on those plant and animal groups. The ranking system uses formal and informal taxa and this is where some of the extra bird and many plant entities came from, but a number of bird species have declined markedly since 1986. We have better information on a wide range of threatened species than ever before and this has changed the status of some species. Also, the ranking system is being used to build up conservation profiles of threatened species, which in the past has only been done systematically for plants.

The ranking system gives more prominence to threatened plants, as they can be directly compared to other threatened species. But plant recovery programmes have a major advantage over other groups - they are usually cheaper and can often be achieved more rapidly. This has enabled the number of plant recovery projects to increase at a time when conservation funding is generally decreasing. The indicator is not the amount of money being put in, but the recovery of the species that is being achieved.

Mark Bellingham, Field Director, Royal Forest and Bird Protection Society, P O Box 631, Wellington

■ Dear Editor

26 August 1992

Thank you for publishing my letter on threatened species in the last issue of the *Newsletter*.

I have had a reply from the Minister of Conservation in which he details the Department of Conservation's funding for threatened plant work in the coming financial year. The figures given are:

	Conservancy Operating Dollars	Total Operating Hours
Birds	1,314,428	75,963
Plants	75,784	10,086

Although he makes the point that "threatened plant projects are often very cost effective and can achieve good results for minimum expenditure", I retain my view that threatened plant funding in New Zealand is pitiful and I believe the above figures support this contention.

Maggy Wassilieff, Environmental Consultant, 69 Tiber Street, Island Bay, Wellington

■ Dear Editor

25 June 1992

David Norton and Janice Lord (*NZ Bot Soc Newsletter No. 28*) mentioned in their list of species from the Paparoa Range that finding *Ranunculus insignis* and *R. verticillatus* there were "major westward range extensions". I wonder about this, for although I am not familiar with their distribution south of the Buller, both species are spread right across the alpine grasslands of western Nelson in places (*N.Z.J.Bot. 29*: 317-330). *R. verticillatus* has also been recorded from the Gunner Downs which is virtually on the coast (A.P. Druce Checklist No. 201, DSIR Library, Lincoln).

P. A. Williams, DSIR Land Resources, Private Bag 6, Nelson

This comment has possibly arisen from their different perspectives of Westland. For both it starts around Buller, and then goes south for Norton and Lord, and north for Williams. It is clear from the maps in Fisher's Alpine Ranunculii of New Zealand that Norton and Lord's records are a major south-west range extension.

Editor

■ Dear Editor

4 August 1992

I was pleased to see in the June 1992 Newsletter a book review on "The History of the Loder Cup". Copies of this book are available from the Royal New Zealand Institute of Horticulture, P O Box 12, Lincoln University, Canterbury, at a cost of \$15.00 (including postage and GST).

A copy of the booklet has been sent to some of the Loder Cup recipients or to their descendants. However, in some cases I have not been able to identify the whereabouts of the recipient/descendant and if anyone can assist by sending me names and addresses of contacts for the following recipients, I would be most grateful.

Loder Cup recipients:

1933	T. Waugh & Son	Wellington
1934	Lord Bledisloe	England
1936	J. Scott Thompson & G. Simpson	Dunedin
1938	Mrs Knox Gilmer	Wellington
1939	W. A. Thomson	Dunedin
1941	E. Earle Vaile	Auckland
1942	A. W. Wastney	Nelson
1943	James Speden	Gore
1944	Norman Potts	Opotiki
1947	N. R. W. Thomas	Auckland
1949	Noeline Baker	Stewart Island
1950	Arthur Paul Harper	Wellington
1951	Lawrence W. McCaskill	Lincoln College
1953	Perrine Moncrieff	Nelson
1954	Norman L. Elder	Havelock North
1955	Michael Christian Gudex	Waikato
1956	Frank Singleton Holman	Whangarei
1957	Frederick William Lokan	Invercargill
1958	Ernest Bowyer Corbett	Okato
1959	Charles Cameron	Tauranga
1960	William Marton	Dunedin
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1964	David Alfred Bathgate	Hastings
1965	Arthur Farnell	Auckland
1971	Violet Ada Briffault	Whakatane
1972	Arthur David Mead	Auckland
1974	Alexander Walter Anderson	Timaru
1977	Reginald Ivan Bell	Waikato
1979	Roger & Christina Sutton	Invercargill
1980	Whangarei Native Forest & Bird Protection Society (Inc.)	Whangarei
1982	Arthur William Ericson	Akaroa
1983	Roy J. Peacock	Hastings

Rodger McCarthy, Executive Officer, Royal NZ Institute of Horticulture, P O Box 12, Lincoln University, Canterbury

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