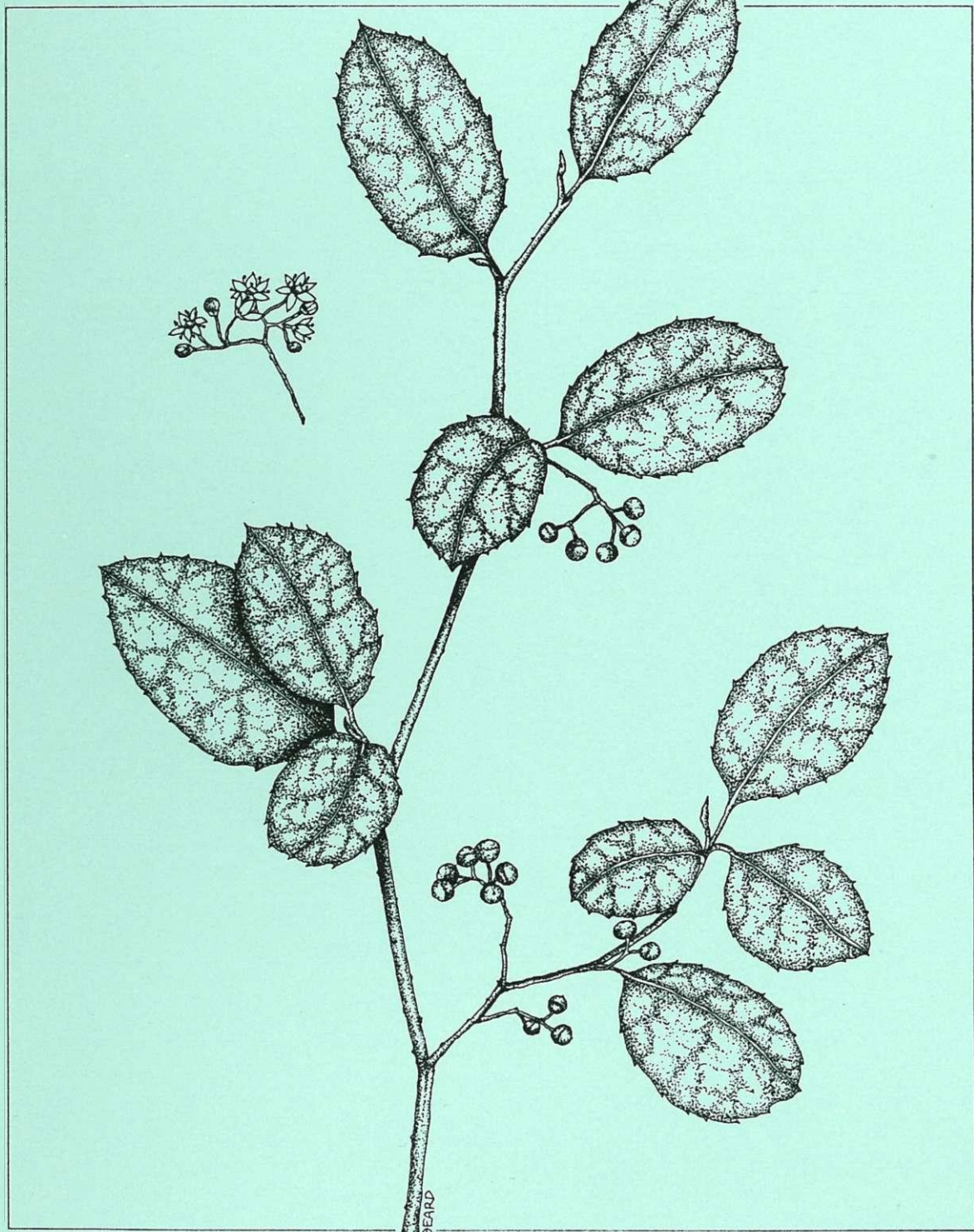


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 31

MARCH 1993



NEW ZEALAND BOTANICAL SOCIETY
N E W S L E T T E R
NUMBER 31 MARCH 1993

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Cover illustration

Putaputaweta (*Carpodetus serratus*) X 1.0. Drawn by **Catherine Beard** from specimens collected from Pukemokemoke and Hakarimata Ranges in the Waikato. Immature fruit (March) and flowers (November). Catherine is Herbarium Keeper at the Biological Sciences Department, University of Waikato and will illustrate further examples of the Waikato flora for future issues.

New Zealand Botanical Society

President: Dr Eric Godley
Secretary/Treasurer: Anthony Wright
Committee: Sarah Beadel, Colin Webb, Carol West,
Beverley Clarkson, Bruce Clarkson
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 31 (March 1993). 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 June 1993 issue (Number 32) is 28 May 1993.

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

NEWS

New Zealand Botanical Society News

■ Balance sheet for the financial year 01 January - 31 December 1992

INCOME		EXPENDITURE	
B/fwd from 1991	4008.14	Printing No. 27	915.75
1992 Subscriptions	3286.00	Postage No. 27	176.00
1992 Student Subscriptions	50.00	Printing No. 28	879.75
Donations	359.00	Postage No. 28	183.20
Back Issue Sales	175.00	Printing No. 29	1075.50
1993 subs in advance	482.00	Postage No. 29	174.40
Interest chq a/c	6.84	Printing No. 30	879.75
Interest investment a/c	281.16	Postage No. 30	176.80
Conference late payment	100.00	Conference refund	100.00
		ECO subscription	65.00
		Bank fees	1.50
	<hr/>		<hr/>
	\$8748.14		\$4627.65
	<hr/>		<hr/>

Excess income over expenditure of \$4120.49 (represented by chq a/c balance of \$19.54 and investment a/c balance of \$4100.95) carried forward to 1993.

Anthony Wright, Treasurer, New Zealand Botanical Society

25 February 1993

Regional Botanical Society News

■ Auckland Botanical Society

Programme

The programme of evening meetings and field trips for the coming year (April 1993 to March 1994) will not be drawn up until the new committee meets following the Society's AGM in March. Details of the March evening meeting and field trip were announced in the last issue of this Journal.

Auckland Botanical Society Journal Vol 48, No. 1 (January 1993)

List of contents:

Australia's fossil floras and living Gondwanan forest remnants. Text of the 1992 Lucy Cranwell Lecture delivered by Mary E. White

"Tribes' claims create poser" - *Pomaderris apetala* at Musick Point, Auckland. R. O. Gardner

Field trip - Upper Nihotupu Track, 15 August 1992. Sandra Jones

Hingaia Stream margin at Drury. E. K. Cameron

Book Review. "New Zealand's Economic Native Plants" by R. C. Cooper and R. C. Cambie. Anthony Wright

Moturemu, Kaipara Harbour - another visit. E. K. Cameron & A. E. Wright

Sandra Jones, Secretary, Auckland Botanical Society, 14 Park Road, Titirangi, Auckland 7

■ Canterbury Botanical Society (NZ) Inc.

Kaikoura Camp: 4 - 6 December, based on the Percival Laboratory. 24 members and 11 Nelson Botanical Society members attended. The co-operation appears to be mutually appreciated. Late on Friday, at low tide, most ventured on to the reefs and collected seaweeds. These were placed in tanks, and on Saturday morning they were identified by Philippa Horn who also commented on their biology and ecology. In the afternoon the group walked to the seal and sea gull colonies, via clifftops and shore. Many adventive plants were collected, identified and displayed in the laboratory for all to learn to recognise. Colin Burrows assisted participants with identification. In the evening Tony Burnett showed some colour slides. On

Sunday, the small attractive Puhi Puhi Scenic Reserve was visited. Here some large rimu, totara, matai and kahikatea trees are to be found. The southern limits of some typically North Island plants occur in the reserves of the area. Blue Duck Reserve covers a much larger area, has been partly cut over, but still retains many mature trees. The final visit was to a waterfall on Ohau Creek in Half Moon Bay, just north of Kaikoura.

Summer Camp Report: Albert Town Lodge, 4 km from Wanaka, 4 - 11 January 1993. This lodge is owned by the Tekapo Ski Club and with its plentiful water supply, excellent drying room, well appointed kitchen and spacious living area, made a very comfortable complex for the summer camp.

The weather during the stay was rather atypical of Central Otago but nevertheless we managed to visit a number of interesting areas within a short distance of Wanaka.

The first major trip was to the Nordic Ski Area on the Pisa Range at 1500 m. On clambering out of warm vehicles to be met by a freezing wind and seemingly vast barren landscape, this seemed an unwise decision, but the party was soon over the ridge in a more sheltered area and enchanted with the masses of flowering cushion plants.

Some huge white mats of *Neopaxia australasica* with a backdrop of stark schist tors were a magnificent sight. Among other mat plants flowering were *Chionohebe pulvinaris*, *Anisotome lanuginosa*, *Phyllachne colensoi*, *Stackhousia minima*, *Hectorella caespitosa*, *Dracophyllum muscoides* and *Ranunculus foliosus*. Also flowering were *Gentiana divisa* and some *Aciphylla* spp.

Another interesting trip was to Bendigo where the group was introduced to the history of the area by the station holder, John Perriam. Later, some time was spent poking about the tops looking at old gold mine shafts, derelict stone houses and plants. Although there was less of botanical interest here, there were some interesting *Raoulia* spp. and ferns, not to mention a forbidden plant that no longer flourishes there. At least not after the Botanical Society visit.

Two further visits to alpine zones were made, one to Treble Cone with its magnificent views of glaciated country and great variety of flowering aciphyllas and the other to the Cardrona Ski Field where, again, there was much of interest.

Other places visited were nature reserves, one a fascinating saline cushion field area (Pisa Flat), Diamond Lake, the Clutha River Walkway and Kidds Bush at Lake Hawea.

Meeting: Wednesday 17 March, 7.30 p.m. in Room A6, Arts Lecture Block, University of Canterbury. *Note the change of day and time.* This meeting is in co-operation with the Friends of the Botanic gardens. Speaker: Dr. Colin Meurk, Landcare Research.

Topic: Restoration of the pre-European Vegetation of Christchurch. Chairperson: Roy Edwards, of the Friends.

Note: There will be a sales table. Please support it, as it helps to pay for the hire of A6.

February Meeting Report: Dr Jo Ward, University of Canterbury, on "Raoulias and other members of the Inuleae". The Inuleae is a tribe of the Compositae (daisy family) and, as well as *Raoulia*, contains the genera *Cassinia*, *Helichrysum*, *Craspedia*, *Leucogenes*, *Gnaphalium* and *Ewartia*. An excellent set of colour slides was used to illustrate the biology of these genera, the floral parts and their relationships one to another. In the flower-heads of daisies there can be ray and/or disc florets, there can be "petals" that are really bracts (part of the involucre), and there can be male, female or hermaphrodite flowers occurring separately or together. Because some of the genera also occur in Europe, the direct application of their taxonomic ideas has not helped to elucidate the taxonomy of the New Zealand species. It is necessary to re-examine many features of the plants, in order to compare them. In recent years, hybrids between some of the genera have been found, indicating relationships, for example: *Raoulia* X *Leucogenes*, *Helichrysum* X *Leucogenes* and *Helichrysum* X *Ewartia*. Dr Ward is revising the tribe, and preparing for publication her ideas on the taxonomy of this interesting and diverse group.

February Field Trip: 6-7 February, Cass area. Two fine days enabled us to see and do many things. On the Saturday, Jo Ward showed us how to identify the mat plant raoulias occurring in the Poulter River bed. While there we also saw the rare *Helichrysum dimorphum* on the banks, and then in the river bed, *H. depressum*, appearing grey-brown and dried, nevertheless often with many small white flowers. On the way to Cass, a stop at Dry Stream enabled us to see *H. intermedium* on the banks, and then further on, plants of *Swainsona* in the scree, one with swollen reddish pods (2 cm long x 1 cm).

On the Sunday we visited the Hawdon River bed where there are several areas of differing plants associations related to the stability of the river bed. It was possible to distinguish four such areas, and these were analysed to determine species present, also the size (diameter) of the main *Raoulia* species, as well as matagouri and *H. depressum*. By now we were becoming better at identifying the *Raoulia* spp., *R. australis*, *R. hookeri*, *R. haastii* and *R. tenuicaulis*, all mat-like, and the more upright *R. glabra* and *R. subsericea*. Other plants of note were *Myosotis uniflora*, the mat forget-me-not and *Carmichaelia uniflora*, a mat-like broom, in pod with blue seeds. *Epilobium* spp. were common, especially *E. melanocaulon* and *E. microphyllum*. Our thanks to Jo and Colin Burrows for leading this trip.

1994 Summer Camp: The Tautuku Outdoor Education Centre has been booked from Monday 3 January to Monday 10 January 1994. This Centre is in the William King Scenic Reserve and is on SH 92, the coast road between Balclutha and Invercargill, 32 km south of Owaka.

P.S. "Banks Ecological Region Report" by Hugh Wilson now available, \$19.95 at Dept of Conservation, Christchurch, or Banks Peninsula District Council offices.

Ron Close, Canterbury Botanical Society, PO Box 8212, Christchurch

■ Manawatu Botanical Society

After a New Year recess the group is back in action with trips planned to Kiripiti Reserve (6 March), Hokio Dune Forest (3 April) and Nga Manu swamp forest (8 May).

Recent trips have included an overnight reconnoitre of the Lake Colenso area of the Ruahine Forest Park (currently under consideration for Ecological Area status), an investigation of Pohangina Scenic Reserve, and a pine tree/exotics pull with DoC in an area of coastal duneland at Tangimoana (currently in the final stages of reserve negotiation as a result of the Foxton Ecological Area PNA survey).

Meetings 7.30 p.m. 1st Thursday of the month. Seminar Room, Biology Building, Massey University

Peter van Essen & Jill Rapson, Department of Ecology, Massey University, Palmerston North

■ Nelson Botanical Society

In November we visited Whangarae Bay. The descent down the Ronga Saddle Hill led into coastal hard beech forest and swamp forest with maire tawake (*Syzygium maire*), and then onto the upper estuary across tidal marsh and along the shore to the sandbar. The most interesting plants encountered were masses of orchids such as *Earina mucronata* in full flower, *Cyrtostylis reniformis* just finished flowering, and *Thelymitra pauciflora*? coming into bud. The sand bar was heavily modified but contained several wind-dwarfed akeake (*Dodonaea viscosa*).

We finally had a good trip to Mt Arthur in December. Numerous carpets of *Euphrasia townsonii* and a good variety of *Celmisia* spp. were in flower including *C. traversii*, *C. dallii* and *C. spectabilis*. Rocky areas were heavily perfumed by the patches of *Oreoporphantha alpina* in full flower. The sink holes near the upper water hole provided carpets of *Ranunculus insignis* lining them. But the spring this year is at least 3 weeks late with several species only just beginning to flower and it was still too early to reach the *Cheesemania* and see many of the willow herbs as the snow still lay deep on the upper slopes.

The summer camp was based at Dip Flat in the upper Wairau Valley. The first afternoon was spent hunting for adult *Pittosporum patulum* in Connors Creek, finding three and several dozen juveniles. Other interesting species included mistletoe (*Alepis flavida*), *Anisotome filifolia*, and *Hebe venustula*.

On the second day we visited the Tarndale tarns and saw great crowds of *Gentiana montana*, not yet in flower, and patches of *G. corymbosa* in full flower. Shrubs of interest included *Dracophyllum pronum* and the mimic *Hebe pimeleoides*. In wetter places the native dock *Rumex flexuosus* was quite common. At Berts Stream the bright yellow-flowered *Dolichoglottis lyallii* was in full flower and quite a diversity of plants hid in the rock crevices, including *Anisotome pilifera*, *Cheesemania fastigiata* and of course *Helichrysum intermedium*.

The third day was wet but during the breaks in the rain short trips close at hand revealed quite an array of orchids including *Gastrodia cunninghamii*, *Chiloglottis cornuta*, *Thelymitra longifolia*, *Adenochilus gracilis*, *Pterostylis graminifolia* and an abundance of a large *Pterostylis* in full flower which resembled a

broad leaved *P. banksii*. Other plants dragged in out of the wet included a tricky array of forms of *Aristotelia fruticosa*, *Pseudopanax simplex* X *P. anomalus* and "trainees beech" (*Gaultheria antipoda*).

Next day we headed for the skifield. On the lower slopes a good array of familiar plants was in flower and, in the rocky areas, *Anisotome pilifera* was in full flower and easily mistaken at first for *Gingidia montana* but easily distinguished by the glaucous leathery leaves. *Cheesemania fastigiata* was also seen in glorious flower. *Hebe* (Q) was one of the most common in the gullies and, in drier rocky areas, *Hebe carnolusa* was quite common, with the odd *Brachyglottis bidwillii* hidden among the bluffs. *Coprosma serrulata* was also spotted near the bush edge. In the tarns *Isoetes alpinus* was quite common and *Myriophyllum propinquum* was seen in at least one. On the upper slopes the vegetable sheep hung round in great mobs. They included *Raoulia eximia*, *Haastia pulvinaris* and *R. bryoides*.

The following day we went through to Lake Tennyson. The most rewarding area was the flats of Serpentine Creek and the screes in its head. Here we saw penwiper (*Notothlaspi* "non-australe"), *Myosotis traversii* and *Lignocarpa carnosula* in flower, and many plants of *Stellaria roughii* and the stags antlers, *Lobelia roughii*. On the flats gentians were abundant, as were numerous *Pterostylis tristis* in full flower, the tiny, heavily scented, yellow-flowered *Stackhousia minima*, also in full flower, and huge wine-red berries of *Coprosma atropurpurea*. The creek hid a small stand of *Brachyglottis cassinioides* and alpine toatua *Phyllocladus alpinus*, and the *Hebe* look-alike *Pimelia traversii* in full flower. We saw numerous huge penwipers in flower and *Stellaria roughii* in full flower. On the return a stop in the upper Wairau revealed *Lobelia roughii* (in flower) and patches of *Asplenium trichomanes*.

On the last day in the Lees the walk included numerous *Dolichoglottis lyallii* in flower, abundant juvenile and some quite large *Pittosporum patulum*, great banks of *Ourisia simpsonii*, and swathes of *Hebe decumbens* in flower. For some the new plant was the twiggly *Coprosma rugosa* on a rocky patch by the river.

The January field trip was to Red Hills. In the wet areas they found a variety of orchids including *Caladenia lyallii*, *Microtis uniflora*, *Prasophyllum colensoi* and *Thelymitra decora*. In the shrublands *Anaphalis bellidioides*, *Brachyglottis lagopus*, *Celmisia spectabilis*, *Microseris scapigera*, *Viola cunninghamii* and *Wahlenbergia albomarginata* made a colourful display along with *Hebe odora* and *H. carnosula*. The highlight for this group was the large patches of *Notothlaspi australe*.

The anniversary weekend camp was at Takaka. The first day was a trip to Hoary Head, a murderous climb up through grassland, then a gradual climb to treeline. The rocky slopes above harboured a grand rock garden with abundant *Clematis marmoraria* and *Myosotis arnoldii*. A wide variety of other plants were found in the rock crevices including *Cystopteris tasmanica*, *Aciphylla ferox*, *Myrsine nummularia* and *Oreoporanthera alpina* with its pungent scent. In the summit basin we searched for *Botrychium lunaria*, finding only the 5 plants seen last year. Other interesting plants include the tiny *Myosotis drucei*, the ubiquitous *Ophioglossum coriaceum* and patches of the scented yellow flowers of *Stackhousia minima*.

On the second day we explored the Pupu walkway which passes through lowland forest containing regenerating podocarps and locally uncommon plants such as *Alseuosmia macrophylla* and *Blechnum fraseri*. Along the water race the cliffs provided a variety of ferns and orchids as well as clumps of the quite attractive local daisy *Celmisia* "Pupu". The most abundant orchid was *Acianthus sinclairii* but others were *Orthoceras strictum* and *Corybas rivularis*. The find of the day though was the tiny filmy fern *Hymenophyllum lyallii*. Other unusual plants included *Blechnum colensoi*, *Lindsaea linearis*, *L. trichomanes* and *Lycopodium laterale*. The race cut through a piece of bog forest which also contained cedar (*Libocedrus bidwillii*), *Lagarostrobos colensoi* and *Lepidothamnus intermedius*. There were also huge *Pittosporum rigidum*.

On the last day we visited John Richard's property at the beginning of the Rameka Track. A species list was compiled containing many plants characteristic of limestone or marble areas such as *Metrosideros colensoi*, *Brachyglottis hectori* and matai (*Prumnopitys taxifolia*). The find of the day was probably the uncommon *Pseudopanax edgerleyi*.

Coming Field Trips

21 March - Beebys Knob

18 April - Editor Hill

16 May - Ngaio Bay

20 June - Gardens - Atawhai - Julie

18 July - Motueka sandspit

15 August - Covenants - Motueka Valley - Les Moran

Camps

Easter April 9-12 Blenheim
Queen's Birthday with Forest & Bird ?

Graeme Jane, 136 Cleveland Terrace, Nelson

■ Rotorua Botanical Society News

Waitaanga Forest: A successful trip to Waitaanga Forest, North Taranaki, was held over Anniversary Weekend. People stayed in the top quality accommodation of the Fishers' shearers quarters with all mod-cons.

The first day was spent botanising the Waitaanga Saddle Road including patches of wetland and silver beech forest. Old site records for *Dactylanthus* were checked but with no success. Discussion with locals revealed a general opinion that goats and possums had had a marked influence on *Dactylanthus* and plants had not been seen recently.

On the Sunday a long tramp was made by most of the party to Rerepahupahu Falls, on the Waitaanga Stream, a major tributary of the Tangaratau River. A few additions to the species list for this area were made.

Ngapuketurua: Eight people turned up for the trip up Ngapuketurua on the Kaimanawa Range. Unfortunately threatening weather turned to cold drizzle and the group did not make it above the bush-line. The beech forest was botanised along the track and there was a lot of discussion on *Coprosma*. One observation was that *Carpodetus serratus* was in flower - some weeks behind that in Rotorua.

Newsletter No. 27 (Dec. 1992) includes:

- 1993 field trip programme
- "Tongariro Forest Field Trip" - Cathy Jones
- "Te Araroa Field Trip" - W. B. Shaw & R. M. Irving

Upcoming Events:

7 March: Lake Ohakuri, Waikato River boat trip - Chris Ecroyd.

9-12 April (Easter): Gisborne area, including Eastwoodhill Arboretum, local kahikatea-matai forest, coastal shrublands and kanuka forest (*Brachyglottis perdicoides*, *Hebe* "Wairoa" and *Pittosporum obcordatum*) - Nancy Adye, Barry Spring-Rice.

2 May: Mount Tauhara - John Nicholls

Sarah Beadel, Secretary, Rotorua Botanical Society, R.D. 4, Rotorua

■ Waikato Botanical Society

On February 21st Catherine Beard and I lead the first Waikato Botanical Society field trip of the year to Pirongia to search for *Dactylanthus taylorii*. We eventually found several living plants on the ridges leading to the summit with many more dead specimens. All mature plants were surrounded by chewed off and empty flower stalks, presumably the result of possum or rat damage. Hopefully the DoC Waikato Conservancy plan to protect these plants with cages à la Chris Ecroyd, will allow the continuance of this interesting member of our flora on Pirongia.

1993 Timetable

March 12-13	Manaia Kauris, Coromandel Peninsula - Warwick Silvester
April 20	AGM and talk on the Flora of Rarotonga - Cathy Jones & Catherine Beard
April 24-25	Weekend Trip to Maharangi Heads, nr Warkworth - Ron Locker
May 16	Lake Rotokawau (Black Lake), Ohinewai - Paul Champion
June 20	Taupiri Scientific Reserve - Paul Champion
August 22	Te Tapui - Te Miro, nr Cambridge - Dave Wardle
September 19	Te Purua Scenic Reserve - Catherine Beard

October 16 Hapuakohe Ecological Area - John Nicholls (Joint Auckland/Rotorua/Waikato Botanical Society Trip)

October 23-25 Cuvier Island. This trip may be expanded to a 4 or 5 day adventure.

November 13-14 Weekend trip to Kaawa (between Raglan and Port Waikato) - Dieter Adam

December 7 Christmas Pot-luck dinner & members slide evening.

For further details and updates/changes on programme, check the upcoming Waikato Botanical Society Newsletters.

Paul Champion, C/- Department of Biological Sciences, University of Waikato, Private Bag 3105, Hamilton

■ Wanganui Museum Botanical Group

Meetings on the first Tuesday of each month in the Museum classroom. At 8 p.m. during summer time, 7.30 p.m. after summer time.

Past field trips

24 October to a pine plantation south of the Kaitoki prison hunting for orchids in mature stands. The following were flowering: *Corybas trilobus*, *Caladenia* (probably *C. catenata*), *Chiloglottis cornuta*. Two ferns, uncommon locally, *Asplenium flabellifolium* and *Doodia media* were also found in the forest.

7 November to the Paengaroa Scenic Reserve at Mataroa near Taihape. We joined botanists from other areas in an exercise in measuring and recording woody plants along a transect: this had been planned by Dr Bruce Clarkson. The presence of *Korthalsella clavata* was noted on *Coprosma wallii* and also pohuehue together with *Melicytus 'angustifolius'* and *Pittosporum obcordatum*.

5 January 1993 to the Rangiwahia track (Western Ruahine Ranges) from bush to tussock. A very successful trip. *Trichomanes venosum* was added to Tony Druce's list.

Future field trips:

Saturday 13 March to Carver's bush, Kai Iwi

Saturday 3 April to Glenmorven Scenic Reserve near Hunterville

Sunday 2 May to Lake Rotokare, Eltham

Alf King, 180 No. 2 Line, R.D.2, Wanganui

■ Wellington Botanical Society

Saturday 3 April: Field trip

Meet at 8 a.m. at Paraparaumu Beach carpark. Bring lunch and drink, towel and dry clothing. Cost: \$30 for boat hire (price may rise before the trip). Please make cheques payable to Carol West. Payment due by Monday 15 March to Carol West, 9 Mamari Street, Rongotai, Wellington 3. Numbers strictly limited to 25.

Leader: Carol West, 'Phone 387-8398 (home).

Easter: Thursday 8 - Tuesday 13 April: Field trip

Kaikoura and North Canterbury

Maps: NZMS 260 P30, P31 and O31

Accommodation will be at Waipapa Cottage which is the shearers' quarters at Waipapa Station on the south side of the Clarence River, 33 km north of Kaikoura. Visit Wharekiri Stream (a tributary of the Clarence), Kaikoura coastal reserves, Blue Duck Scientific Reserve, Puhipuhi Scenic Reserve, Lakes Rotorua and Rotoiti (west of Kaikoura), and Napenape Scenic Reserve (near the mouth of the Hurunui River).

Members of Nelson Botanical Society have been invited to attend also.

There will be two vans going from Wellington so some transport is available. Please make bookings on the ferry well in advance. Travel across on the 4 p.m. ferry on Thursday and return on the 2.20 p.m. ferry on Tuesday. Waipapa Cottage is c. 1.5 hours from Picton.

Bring bread, butter, biscuits, scroggin, fresh fruit, enough for 5 days. The rest of the food will be ordered in bulk. Names with a deposit of \$25 should be with the leader, Margaret Aitken, 4 Godley Street, Lower Hutt, by 12 March 1993. Please make sure you give a postal address and make cheques payable to Margaret Aitken, NOT the Botanical Society.

Leader: Margaret Aitken, 'phone 566 2731 (home), 474 9499 (work)

Monday 19 April: Evening meeting

Marine Invaders - Foreign Plants and Animals Reaching New Zealand's Shores

The impact of introduced plants and animals on the native terrestrial flora and fauna is well known, but what is not so well known is that the same thing happens in the sea.

Speaker: Wendy Nelson, Museum of New Zealand

Saturday 1 May: Field trip

Dobsons/Philips Lookout

Walk from Kaitoke carpark to Dobsons Hut then due west to some wetlands. See what is regenerating on the way to Dobsons and look for some interesting plants in the wetlands. Bring lunch, drink, etc. Meet at Upper Hutt Railway Station at 8.30 a.m. or upper carpark at Kaitoke at 9.00 a.m.

Leader: Margaret Aitken, 'phone 566 2731 (home), 474 9499 (work)

Monday 17 May: Evening meeting

Members' Evening

A pot-luck dinner in the Biological Sciences tea room, K501, followed by slides shown by members of their trips during the year.

Queen's Birthday Weekend: Field trip

Ruahine Range

Details to be advised in the next Wellington Botanical Society newsletter.

Leader: Carol West, 'phone 387-8398 (home)

Monday 21 June: Evening meeting

Vegetation Changes in the Lake Taupo District in Pre-European Time and into the 19th Century

An account of Maori influence on the vegetation of the district, drawing upon journals and manuscripts left by early European travellers.

Speaker: Ann Williams, Department of Conservation

Carol West, 9 Mamari Street, Rongotai, Wellington 3

NOTES AND REPORTS

■ Threatened Plant Database

A recent New Zealand Botanical Society newsletter article (Wright, Sept. 1992) published the current list of threatened New Zealand vascular plants, compiled in 1990 by Dr David Given. This list contained eight probably extinct, 52 endangered, 70 vulnerable, 105 rare, and 35 indeterminate or insufficiently known taxa. With 270 taxa thus classified as threatened, and a further 24 taxa spread through all these categories but listed separately as taxonomically indeterminate or as minor genetic variants, a coherent accessible record of the sites at which these are found is useful to botanists, conservationists and planners.

A database of sites where endangered, vulnerable or rare plants exist was started at DSIR Land Resources by David Given and is being continued, by Manaaki Whenua - Landcare Research, P.O. Box 69, Lincoln. Currently 1688 records have been entered. The database is partly supported by a contract with the Department of Conservation.

The database is heavily dependent on records submitted by both amateur and professional botanists. Site report forms are available from Landcare Research Ltd. A single one-page form is used for most records. A more comprehensive four-page form is used when field workers wish to include more detail on population size and condition, site factors, current and possible threats, and suggested management actions.

Submitted site report forms are checked and validated before entering the data onto an electronic database.

Information from the database, including original site records, distributions, and lists of plants for areas are made available on a regular basis to conservation managers, and to other bona-fide users on request. Some restrictions are placed on publicising specific locations of the most threatened plant species.

With recent changes in establishment of Manaaki Whenua - Landcare Research New Zealand Ltd, quality control of the database has become a responsibility of Dr Peter Johnson, Landcare Research, Private Bag 1930, Dunedin. Also closely involved with the database are Dr Bruce Clarkson, Landcare Research New Zealand Ltd, Private Bag 3052, Rotorua, and Dr Peter Williams, Landcare Research New Zealand Ltd, Private Bag 6, Nelson.

The primary contact for site record forms, submitting, and obtaining information from the database is: Threatened Plant Database, Landcare Research, Box 69, Lincoln, Canterbury; attention Janie Glasson.

Sue Gibb, Manaaki Whenua - Landcare Research New Zealand Ltd, PO Box 69, Lincoln, Canterbury

BIOGRAPHY/BIBLIOGRAPHY

■ Biographical Notes (9): Thomas Waugh (1832-1896)

Thomas Waugh came from a long-established farming family in Roxburghshire, Scotland, where he was born at St. Boswells in 1832. At the age of 26 he married Emily Jane Salisbury at Lowick, Northumberland; and in 1859 they arrived at Invercargill (1, 2). Here Thomas was engaged as shepherd by John and Frank Hamilton who had recently acquired the Mavora run, lying between Wakatipu and Te Anau (3).

"About the beginning of February", wrote Thomas, "ten of us started off from Invercargill by bullock wagon for Mavora. The party included Mr and Mrs Hamilton and their children, myself and Mrs Waugh, together with other workmen." The journey took 10 days, and theirs was the first bullock wagon to travel beyond Longridge. At Mavora "all hands set to work to build a log hut, there being a plentiful supply of fine, straight birch trees handy for the job. The roof of the hut was thatched with tussock, while the cracks in the wall were plugged with moss. The door was a piece of sacking and the window a piece of calico, but when a good log fire was burning the hut was quite comfortable" (3).

After his time at Mavora, as the Southland Times reported, "Mr Waugh entered into business in the suburb now known as Richmond Grove, where for some years he made good progress. At this time the town of Invercargill became possessed of the proceeds of the sale of the Tay Street frontage, from the Bank of New Zealand eastward (*sic*) to Nith Street, which had to be expended in the utilisation and beautification of its recreation reserves. Mr Waugh, whose qualifications were well known, was at once appointed to the office of curator" (2). The appointment lasted from 1872 to 1896 and Waugh was variously called Town Gardener, Borough Gardener, or Corporation Gardener (4). He "wonderfully improved the southern portion of the town" by straightening the Puni Creek, and he planted conifers for shelter, followed by eucalypts, his favourite genus. At the nursery grounds of the Corporation of Invercargill he built up a fine collection of native Veronicas (2).

In May, 1886, Captain Clare, the Harbour Master, reported that sand blown from Sandy Point into the Oreti River could affect the Invercargill Harbour; and Thomas Waugh was instructed to investigate sand-binding plants with particular reference to marram-grass. This became a major interest in the last decade of his life (5). Valuable advice was obtained from Sir George Grey, Baron von Mueller (Australia), Thomas Kirk, and (locally) William Smith Hamilton, who had discovered the rare *Gunnera hamiltonii* "on the hills near the New River Heads" (T.N.Z.I. 1885).

Kirk visited the Oreti (New) River Estuary on 1 February 1890, on his way back from the Southern Islands (6); and this was undoubtedly the occasion of his "somewhat hasty" but fruitless search for Hamilton's *Gunnera* (T.N.Z.I. 1895). It is very likely that Waugh accompanied Kirk on that day.

Kirk's account of the New Zealand species of *Gunnera* was read before the Wellington Philosophical Society on 28 November 1894, and published in May, 1895 (T.N.Z.I. 27 : 341). It includes descriptions of 1 new species and 2 new varieties based on material sent by Waugh. But note that the type material mentioned in Allan's *Flora of New Zealand* (1961) was collected by Waugh between the times of reading and publication of this paper. *G. microcarpa* was collected at Sandy Point on 16 February 1895, and at Kew [Invercargill]; and *G. monoica* var. *albocarpa* was collected at Sandy Point on 10 February 1895. *G.*

densiflora var. *depressa* is only given as "Southland : T. Waugh". Presumably Kirk waited for fruiting material before finalising his descriptions. Indeed he wrote: "It affords me great pleasure to express my thanks to Mr Waugh, Curator of the Public Gardens, Invercargill, for his kindness in forwarding fruiting specimens of several species found in the plantations under his care" (T.N.Z.I. 1895).

Waugh's well-written and informative account of his reclamation work at Sandy Point (5) a pioneer paper of its kind, appeared in June, 1895; but on 11 April 1886, he died at the age of 64, and was buried at the East Road Cemetery Invercargill (1). He was remembered as "a reserved man, naturally self-suppressive and retiring, but full of strong desires for the welfare of his fellowmen"; and as "the originator of the system of tree planting which has transformed the desolate looking flat country into a picture of beauty" (2).

Leonard Cockayne was apparently unaware of Waugh's paper when reporting on the dune areas of New Zealand (1909, 1911). He does not list it, and only states: "The Invercargill Town Council has done some marram-planting on the reserve near the head of The New River. This, unfortunately I was only able to see from a distance" (1911). At the request of the Invercargill Borough Council, C. M. Smith, a Ranger with the New Zealand Forest Service, and later third Director of Botany Division, D.S.I.R., prepared a report on a Sandy Point Domain Afforestation Scheme which appeared in 1924. It includes historical information, photographs, a vegetation survey and a species list (7).

I am very grateful to Mr L. J. Metcalf, lately Director of Parks and Recreation, Invercargill, for help with this note.

(1) Death Certificate; (2) Obituary, Southland Times, 12 April, 1896; (3) History of Northern Southland, G. A. Hamilton, 1952; (4) Centenary of Invercargill Municipality, 1871-1971, J.O.P. Watt; (5) Sandy Point Domain, Attempted Reclamation, New Work Proposed, Natural Features and History, Thomas Waugh, Corporation Gardener, Invercargill, June, 1895, Southland Times Company; (6) Itinerary of Thomas Kirk's botanical expeditions, B. G. Hamlin, Rec. Dom. Mus. 1965; (7) Sandy Point Domain, Management Plan Pt. 1, L. J. Metcalf, Invercargill City Council, 1991.

Eric Godley, Research Associate, Landcare Research, P.O. Box 69, Lincoln

BOOK REVIEWS

■ New Zealand's Economic Native Plants

By R. C. Cooper and R. C. Cambie. Oxford University Press, Auckland. 1991. 234pp. 16 plates. ISBN 0-19-558229-2. \$49.95 (incl. GST)

This is a book in which I have a particular interest, so it is honest to state this, and at the same time make clear to prospective readers the book's origin. Encountering the book for the first time a reader might be confused if, after having noted that the book was "First published in 1991", they read in the Preface that the Hon. Simon Upton is "delighted to see that this book, New Zealand's Economic Native Plants, is being revised..." and to read the opening line of the Introduction "In the first edition of this book...". It is not until Chapter 5 on page 60 that the authors make a clear reference to the first version titled "Economic Native Plants of New Zealand" written by S. G. Brooker, R. C. Cambie and R. C. Cooper which was published by Botany Division, DSIR, in 1988. I am sure that the absence of an acknowledgement of the contribution of the late Mr S. G. Brooker to the first version, most of which remains intact in this second version, is an unintentional oversight.

Botany Division undertook to first publish the book after the authors had difficulty finding a publisher. Consequently the first book was an economical production on A4 paperback. It is a significant step forward that Oxford University Press has had the courage to publish this new version. This makes a most valuable contribution to knowledge about New Zealand plants much more widely available in a far more attractive and compact format. As well, in the time since the first version, Dr Bob Cooper and Professor Con Cambie have added considerable new material to the book as well as making effective rearrangement of parts of the original text.

Some prospective readers might, I suspect, be turned off by the term "economic" in the title, but this book is much more than an account of ways in which native plants have been used or considered for use for economic gain. There is much in the book that will be of appeal to historians, conservationists, ethnobotanists, anthropologists, crafts people, and those who have a straight forward unselfish interest in New Zealand's plants.

In a most diligent way the book sources material from the prerecorded history of New Zealand, through the period since European exploration and settlement and right up to issues which were current at the time of publication. Clearly, good use has been made of personal contacts and access to house and scientific society publications, and newspaper and magazine articles, to obtain interesting and useful information which otherwise would remain obscure. I can think of no better publication to use as a guide to finding what written information there is about Maori use of plants. Perhaps one omission in references given in the book is the account of the "Customs and Habits of the New Zealanders 1838-42" by Father Catherin Servant, a Marist missionary in the Hokianga. However reference is made to William Yate who first published in 1835 and was a source for some of Servant's account.

In the part covering recent history there is an account of the particular contributions made by Botany Division DSIR to economic botany. It is gratifying that this account makes available, for long term historical reference, details of one aspect of the work of a fine institution. This is especially so since current ideologies appear to be striving to sweep away old loyalties, approaches and values of scientific research.

For those whose enjoyment of growing native plants in their gardens is enhanced by knowledge of their history of cultivation, the chapters on native plants in gardens overseas and in New Zealand gardens will be of particular interest. These chapters, the preceding chapter on the history of use of the flora and the following chapter on the utilisation of New Zealand's forests for timber, are probably the most interesting chapters for the general reader. Those that follow are much more botanically, chemically and economic product oriented. Not too many people can be expected to have a stomach for the complexities of organic compound formulae no matter how relevant these are to their health and appetite. This is likely to be an impediment to this becoming a widely read and popular book, even though the authors have made a very worthwhile attempt to bring about a marriage of their respective disciplines. Perhaps the approach to gain the attention of a wider readership would be a book on "A Hundred and One Ways to Use Native Plants" together with recipes and colourful illustrations! The book would have been enhanced by the use of more illustrations of products to complement the improvement of the first version made by the inclusion of photographs and colour plates of plants and people.

These suggestions stated, there is no doubt that the book is the definitive work on the subject and the basis for bringing together further information on the history and potential uses of native plants. For example, to progress from what is written by Cooper and Cambie, Solander's description of taxonomic entities under *Philadelphus* included both what we know today as *Leptospermum scoparium* and *Kunzea ericoides* and not just *L. scoparium*. This can be verified from Solander's description in the unpublished manuscript *Primitiae Florae Novae Zealandiae*, and the annotations on the Banks and Solander specimens in the Natural History Museum in London.

The chapter title "From the Hills to the Seashore" conceals some curious contrasts of content. Beginning from a brief account of the history of Maori and commercial native timber use, the chapter moves on to an account of the campaign against the logging of native trees. It is honest in dealing with the political consequences of this campaign. This provides hard historical copy in case we or the politicians forget. The chapter is also constructive in promoting the growing of native trees according to the Manifesto of the 1990 Tree Conference held in Auckland "that the utilization of indigenous wood should be from trees specifically planted and cultivated, not from intrusion into public heritage forests". The chapter ends by dealing with wetlands and coastal communities. These places could have been better dealt with in a separate chapter to lay greater stress on the threats they are subjected to, and to emphasise more their largely unappreciated contribution to primary biological productivity. I wonder if it is a matter of deliberate irony that the only illustrations of plant communities in the book are those of marram grass, lupin and *Pinus radiata* on page 75 in this chapter.

The final ten chapters of the book show the problem the authors had in deciding whether they should deal with their subject on the basis of products, plant groups, or production systems based on particular plant communities. A better arrangement may have been to deal with plant groups and communities in a sequence from forest to grassland to wetland and coastal to freshwater and finally marine. This would still leave the problem of where to include the bryophytes and thallophytes. Importantly however, the authors have not overlooked even the most humble or seemingly insignificant of organisms. The economic impact of these lesser organisms can at times be catastrophically significant.

In view of the current toxic algal bloom which has directly affected human health, and consequently struck deeply into the New Zealand economy, the chronicle of algal related phenomena in our waters in the chapter on marine and freshwater microalgae makes gripping and prophetic reading. The slip from microalgae to macroalgae in the running heading of this chapter is a minor alteration to be made when

this chapter is updated to record the ongoing saga of peoples' impact on the waters of New Zealand in the pursuit of economic development.

Now that dinoflagellate has become a household word, not to be confused with some kind of deviant restaurant, it is appropriate to point to page 191 of the book where it is recorded that Vivienne Cassie isolated a probable new species of the toxic dinoflagellate genus *Alexandrium* linked to blood-red tide event from an algal bloom in Whangarei Harbour in 1982. The Christchurch Press of January 21 1993 reports *Alexandrium minutum* as the organism responsible for the 1993 episode of toxic shellfish poisoning. The conclusion given by Cooper and Cambie after their account of the 1982 and other algal blooms, "that further studies are needed regarding the life cycles of toxic microalgae inhabiting New Zealand coastal waters.", has not meant that in being forewarned the now very economically significant shellfish industry was forearmed. The unpreparedness indicated by the 1993 event emphasises the gross inadequacy of our knowledge of the microflora of New Zealand waters. It would be shortsighted indeed to regard this event as a natural phenomenon induced by extraordinary physical conditions about which we can do nothing. Also, while algae are receiving attention as villains in the current toxic shellfish episode, we should not overlook that, without microalgae, there would be no seafood industry whatsoever. My recollection is that microalgae are estimated to contribute 80% of the world's primary productivity.

Understandably people relate more readily to plant products which they can directly use to feed, clothe, shelter, cure, defend and provide pleasure for themselves. As indicated by the wealth of information in the chapters on plant products there has been no shortage of curiosity about and indication of the potential uses of New Zealand native plants. Why then is it that so little of this indicated potential has been developed into sustainable economic production? The authors do ponder this question in parts of the book. For example, in commenting on the failure of some of the more determined efforts to produce chemical products from New Zealand plants they note "that successive New Zealand governments have fallen far behind some other countries in encouraging scientific research and development by offering tax rebates and other financial help." At the present stage of New Zealand's political history such comment is not going to be received with much sympathy.

I think more cohesive analysis of the environmental, biological, economic and political factors which determine the economic potential of New Zealand's plants, and which have acted to thwart realisation of this potential, would be an improvement to the book. The opening section of the Introduction has all the sterility of accountancy. The first version of the book had a summary chapter which included forward looking comments. These comments are now scattered throughout and buried in the detail of the book. It now ends with the bad news about the effect of sewage outfalls on the rapidly growing shellfish industry!

This book has engendered many responses from me in addition to those I have commented on. I value this book highly as a reference and for the way it has tackled the difficult task of bringing together information from diverse disciplines and sources to highlight the values of New Zealand plants, both commercial and otherwise. For other people it will engender different responses, so my recommendation is that you subject yourself to this experience.

Warwick Harris, Manaaki Whenua - Landcare Research New Zealand Ltd, PO Box 69, Lincoln

■ **Food is where you find it: a guide to emergency foods of the western Pacific**

By L.M. Cranwell, J.E. Green and A.W.B. Powell. Auckland Institute & Museum, Auckland. 1992. 76pp. ISBN 0-908623-33-XX. \$5.85 (incl. GST)

Reprinted, unchanged from when it was handed to allied servicemen and women destined for the Pacific theatre of World War II, is this pocket-sized booklet on emergency foods of the western Pacific. It includes general notes covering survival techniques, poisonous plants, water collection etc. and sections on food plants, fibre, fish poisons and useful and harmful sea creatures. As it is a reprint, several botanical names are rather dated and the warnings about the "Japs" and keeping out of sugar cane if incendiaries are falling are no longer relevant! However, the main body of information on emergency foods is just as useful as ever and is well illustrated by numerous line drawings. If you are about to go on a Pacific holiday and have any doubts about whether your plane or boat is going to make it, this is the booklet for you. Even if you make it safely you can still sample some of the many food plants described. The booklet is available from the Publications Officer, Auckland Institute & Museum, Private Bag 92018, Auckland.

Editors

DESIDERATA

■ Restoration of *Pseudopanax* Collection

Ventnor Botanic Garden on the Isle of Wight has the most important collection of *Pseudopanax* species and cultivars outside New Zealand. In September thieves stole the entire collection, the plants probably destined for the garden of a collector.

The Otari Native Botanic Garden in Wellington has contacted Ventnor and agreed to co-ordinate the collection of seed in New Zealand to assist with the restoration of this collection. If you are able to supply seed of any *Pseudopanax* species can you please let us know. Ventnor are particularly keen to gain several accessions of each species from different localities to ascertain how much provenance affects the outcome of the plants growing in the UK.

Mike Oates, Curator, Otari Native Botanic Garden, Wellington City Council, PO Box 2199, Wellington

■ Request for *Nothofagus* seed

I have received correspondence from Andrew Jackson of Royal Botanic Gardens, Kew, requesting seeds of different provenances of New Zealand. *Nothofagus* species and any notable hybrids.

If members are able to help with seed collection, data would be desirable for each collection as follows:

Latitude, longitude description of location e.g. 1 mile N of — — — altitude, habitat, including associated species, soil type, any particular features of the plant, date of collection and your collectors number.

This information is requested to help future researchers.

Seed could be sent directly to: Andrew Jackson
Royal Botanic Gardens
Wakehurst Place
Ardingly
West Sussex
RH17 6TN
ENGLAND

or to myself at the following address, and I will be happy to forward it.

Mike Bunckenburg, 218 Otipua Rd, Timaru

FORTHCOMING MEETINGS/CONFERENCES

■ Preliminary notice of the 1993 John Child Bryophyte Workshop

The 9th John Child Bryophyte Workshop will be held at the Edward Percival Field Station, Kaikoura, New Zealand. The dates of the workshop will be Thursday, 28 October, to Wednesday, 3 November.

Accommodation will be bunkroom style, as for recent workshops. We anticipate that the cost of the workshop will be somewhere in the order of \$150, but we have not yet done detailed calculations. There are numerous motels, etc. in Kaikoura for those who may wish to arrange for private accommodation.

Some funds are available to subsidise expenses of students - so do not hesitate to ask, if financial constraints will prevent you from attending. Please attach a brief statement (half page) outlining your current student status, your interest in attending the workshop, and indicating your wish to be considered for financial subsidy.

It is anticipated that the "formal" portion of the Workshop will last from Friday morning until Monday evening. We hope that we can induce more participants (even "amateurs") to give short talks on their bryological interests and work.

We anticipate visiting coastal limestone areas on the Kaikoura Peninsula, as well as various lowland forest habitats near Kaikoura. We are investigating the feasibility of visiting subalpine/alpine sites on Mt Fyffe in the Seaward Kaikoura Range.

The workshop will be limited to 25 participants. We will request a deposit (and thereby reserve spaces) when we mail a second circular, during April/May. We will provide information about transport possibilities, etc. at that time.

If you wish to receive the 2nd circular, contact:

Allan Fife, Landcare Research New Zealand Ltd, P.O. Box 69, Lincoln, New Zealand; FAX 03 325 2418

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Fig. 96. *R. haastii* subsp. *haastii* from Porters Pass

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