NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 67 MARCH 2002

New Zealand Botanical Society

Subscriptions

The 2002 ordinary and institutional subscriptions are $18 (reduced to $15 if paid by the due date on the subscription invoice). The 2002 student subscription, available to full-time students, is $9 (reduced to $7 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 46 (December 1996), $3.00 each from Number 47 (March 1997) to Number 50 (December 1997), and $3.75 each from Number 51 (March 1998) onwards. 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 28th February each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next years 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 2002 issue (68) is 25 May 2002.

Please post contributions to:

Joy Talbot
23 Salmond Street
Christchurch 8002

Send email contributions to **joytalbot@free.net.nz** Files can be in WordPerfect (version 8 or earlier), MS Word (Word 97 or earlier) or saved as RTF or ASCII. Graphics can be sent as Corel 5, TIF or BMP files. Alternatively photos or line drawings can be posted and will be returned if required. Drawings and photos make an article more readable so please include them if possible. Macintosh files cannot be accepted so text should simply be embedded in the email message.

Cover Illustration

Hebe breviracemosa, Kermadec hebe, flowering on Hutchison Bluff Ridge, Raoul Island. Once consiered to be probably extinct, the species was rediscovered in 1983. The photo is of the rediscovered plant and was taken by Bill Sykes in November 1994. From a colour photo supplement in "Kermadec Islands Flora – Special Edition", 2000. W R Sykes, C J West, J E Beever and A J Fife. Manaaki Whenua Press. (See p 32.)

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NUMBER 67 MARCH 2002

CONTENTS

New Zealand Botanical Society News

■ **From the Secretary/Treasurer**

Minutes of a General Meeting of the New Zealand Botanical Society held in Commerce 2 Lecture Room, Lincoln University, on 29 November 2001 at 12.30 pm

PRESENT: Dr Jessica Beever (President, in the Chair), Ross Beever, Peter Bellingham, Ilse Breitwieser, Ewen Cameron, Ron Close, Geoff Davidson, Peter de Lange, Chris Ecroyd, Allan Fife, Eric Godley, Fran Kell, Dave Kelly, Bill Lee, Bryony Macmillan, Matt McGlone, Linda Newstrom-Lloyd, Neville Moar, Brian Molloy, David Norton, Judith Petterson, Doug Rogan, Neill Simpson, Joy Talbot, Andy Thomson, Jo Ward, Peter Wardle, Carol West, Hugh Wilson, Aaron Wilton, Nadai Zviagina, Anthony Wright (Secretary/Treasurer)

1 WELCOME & APOLOGIES

The President welcomed members and called for apologies. The following apologies were received and sustained: Arthur Healy, Colin Webb, Rhys Gardner, Bruce Clarkson.

2 MINUTES OF PREVIOUS MEETING

The minutes of the previous meeting held on 17 June 1999 had been published in the December 1999 *Newsletter.*

Moved Chair

THAT the minutes of the General Meeting held 17 June 1999 be taken as read and adopted as a true and correct record.

CARRIED

3 MATTERS ARISING

All elsewhere on agenda.

4 STATEMENT OF MEMBERSHIP & FINANCES

The Secretary/Treasurer reported that paid membership (i.e. *Newsletter* subscriptions) was 314 (against 245 reported to the last General Meeting in June 1999). The overall financial position for the Society since 1991 was as follows:

1991	C/fwd	$4,008.14		
1992	C/fwd	$4,120.49		
1993	C/fwd	$4,555.62	Adjustment for '93 invoices paid in '94	$3,263.17
1994	C/fwd	$3,017.69	Adjustment for '94 invoices paid in '95	$4,310.14
1995	C/fwd	$3,209.30	Adjustment for '95 invoices paid in '96	$1,748.42
1996	C/fwd	$573.22		$573.22
1997	C/fwd	$1,415.84	Adjustment for '97 invoices paid in '98	$146.97
1998	C/fwd	$4,072.16	Adjustment for '98 invoices paid in '99	$2,753.71
1999	C/fwd	$3,810.12	Adjustment for '99 invoices paid in '00	$2,466.69
2000	C/fwd	$4,101.08	Adjustment for '00 invoices paid in '01	$1,975.32

Subs were last increased in 1998; larger *Newsletters* and gradually increasing costs would probably necessitate a further subs increase in 2003.

Moved Wright/Cameron

THAT the report be received. CARRIED

5 REPORT ON ELECTION OF OFFICERS AND COMMITTEE

The President reported that the following written nominations were received by the closing date:

President:	Anthony Wright
Secretary/Treasurer:	Doug Rogan
Committee Members:	Bruce Clarkson
	Colin Webb
	Carol West

As the nominations equalled the number of vacancies, the above were declared elected for 2002.

The Committee had re-appointed Joy Talbot as *Newsletter* Editor for 2002 and as such she remains an ex officio member of the committee. Joy was congratulated by several members on the quality of the *Newsletter*.

6 GENERAL BUSINESS

i Allan Mere Award

The President announced that the 2001 Award had been presented to Neill Simpson at the ceremony to name the Allan Herbarium at Lincoln the previous day. This was greeted with acclamation.

ii Department of Conservation Threat Classification system

The President reported a letter received from Rod Hitchmough of DoC's Biodiversity Recovery Unit outlining a new threat classification system being implemented by DoC for all taxonomic groups of organisms. Following wide advertising for information on threatened organisms, specialist panels appointed by DoC would undertake ranking. In the past this exercise had been done for vascular plants by the New Zealand Threatened Plant List Committee of the New Zealand Botanical Society.

The NZBS Committee recommended the following motion, which was discussed.

Moved Beever/de Lange
THAT the Society request of DoC the right to make one appointment to each of the Threat Classification System expert panels that deal with plants or fungi.

CARRIED

iii Task Group on Protection of New Zealand Threatened Plants

The President invited Brian Molloy (convenor) to report back on behalf of the group. Brian reported that after initial meetings, the DoC system previously discussed had appeared which had removed immediate concerns. He noted that there was no action at present; the group was in 'idling mode' until further action was needed.

iv Centenary of publication of Cheeseman's (1906) Manual of the NZ Flora

Correspondence from Henry Connor suggesting a botanical symposium to mark this centenary was discussed. The committee recommended reconsideration of the request in 2003. The meeting asked a working group comprising Ewen Cameron (Convenor), Ilse Breitwieser, and Peter de Lange to look into the possibilities and report back.

v *Newsletter* policy

Carol West reported a discussion and decision at the previous day's committee meeting to limit regional bot soc news in the *Newsletter* following members' comments that it was beginning to dominate *Newsletter* content. There would now be a maximum of one page per society per newsletter allowing a brief report on recent activities plus a listing of forthcoming activities.

This action was endorsed by a number of members. Dave Kelly noted that he found the *Newsletter* fantastic and thanked all concerned; this thanks generated spontaneous applause. Peter Bellingham asked if lists of university theses/honours projects could once more be listed, and the Editor undertook to approach university departments via a society member in each.

vi Statement from retiring President

Jessica Beever reflected on her six years in office and thanked the committee members, officers and editors that had served over this period. She paid special tribute to the *Newsletter* Editors who were at the core of the Society's work.

Eric Godley proposed a vote of thanks for Jessica's many contributions as President, which was carried with acclamation.

The meeting was declared closed at 1.20 pm.

Balance sheet for the financial year 01 January – 31 December 2001

INCOME	$	EXPENDITURE	$
B/fwd from 2000	4,101.08	Carried forward from 2000	636.27
2000 Subscriptions	73.00	Printing Newsletter No. 62 (2000)	990.00
2001 Subscriptions	4956.50	Posting Newsletter No. 62 (2000)	349.05
2002 Subscriptions	99.00	Printing Newsletter No. 63	990.00
Sponsor a Student Sub Donation	363.00	Posting Newsletter No. 63	301.80
Back Issue Sales	206.25	ECO subscription	80.00
Donations	12.50	Printing Newsletter No. 64	1467.00
Interest	47.01	Posting Newsletter No. 64	301.55
		Printing Newsletter No. 65	1199.25
		Posting Newsletter No. 65	298.10
		General stationery	120.64
		Bank Fees	26.50
Total Income	**9,858.34**	Total Expenses	**6760.16**

Excess income over expenditure of $3098.18 presented by current account balance of $345.40 and cash drawer saver account balance of $2752.78 carried forward to 2002.

Note that 2001 payments for printing the December *Newsletter* 66 ($907.88) and postage and stationery for *Newsletter* 66 ($353.33) did not come to account until early January 2002 leaving an effective combined carry forward to 2002 of $1,261.21. Also note Newsletter 60 & 61 posting and stationery costs were paid for in 2001 ($636.27)

Doug Rogan, Treasurer, New Zealand Botanical Society 14 March 2001

■ From the Editor

A big thank you to those Regional Societies that sent in a summarised version of their newsletter. For those who didn't I've edited as best I can. For the June newsletter, I can accept only one page per society maximum; I'm willing to edit but I can't guarantee the finished product will be what you would have written.

Joy Talbot, Editor

Regional Botanical Society News

■ Auckland Botanical Society

December Workshop & Potluck dinner

The Education Centre at the Regional Botanic Gardens was a suitable venue for a workshop on the identification of *Pittosporum* species. Ewen Cameron showed slides, and then provided fresh samples in the form of a quiz. A walk around the new threatened species garden, a show and tell session, and the

traditional potluck dinner rounded off the day.

January South Island Camp
A small house formerly owned by the Electricity Dept. was the base for a week-long camp at Sedgemere, on the Rainbow Road side of Molesworth. We were fortunate to be guided by local DoC Botanist and good friend, Cathy Jones. The landscape is one of eroding hills and mountains, with scree slopes the dominant feature. Gullies with clear streams support interesting alpine flowers, shrubs and ferns, small tarns can prove to be good botanising grounds, and on the shores of Lake Tennyson is a grove of mountain beech, the only tree to be seen in the area. With a count of about four plants that were familiar to us from the north, the notable plants seen were far too numerous to list. However, the cryptic little scree plants deserve special mention, and we were fortunate in seeing both flowering and fruiting specimens of the penwiper.

Anniversary Weekend Camp, Great Barrier Island
The undoubted botanical highlight of the island, Mt Hobson (Hirakimata, 621m), was climbed on the first day by way of Windy Canyon, the descent leading to Port Fitzroy. The Island endemics, *Kunzea sinclairii* and *Olearia allomii*, are present there, as are *Loxsoma cunninghamii, Metrosideros parkinsonii, Epacris pauciflora* var. *sinclairii, Archeria racemosa,* and *Halocarpus kirkii.* An introduction to a black petrel chick by researchers, added to the interest of the day.

On Sunday morning the White Cliffs (Te Ahumata) track was tackled. Owing to the mineral content of the soil, the vegetation is only knee high. A surprising find was the sun orchid, *Thelymitra cyanea*, some plants with cream flowers and some with deep blue/purple. After lunch the walk led, via the hot springs, around the edge of the Kaitoke swamp. *Pittosporum virgatum, P. huttonianum* and *Ileostylus micranthus* are along the track, at the hot springs are *Sticherus flabellatus* and *Psilotum nudum*, and in the swamp we saw the orchid, *Spiranthes novae-zelandiae* .

On Monday the Whangapoua estuary was explored. Behind the pingao covered dunes are damp slacks where *Ranunculus acaulis, Limosella lineata* and *Lilaeopsis novae-zelandiae* grow. A flock of brown teal at the Whangapoua homestead kept members interested until the buses arrived to transport them to the ferry for the return to the mainland.

February Field Trip
Summer obliged with a perfect day for a field trip to the end of the Mahurangi Peninsula. A walk in a Rodney District Council reserve at the back of Martins Bay occupied the morning. Although mostly kanuka on the slopes and larger trees in the gullies, this plot is regenerating nicely. The red-petioled *Alseuosmia* growing there can probably be referred to as *A. quercifolia*. After lunch and a swim, the newly purchased Scandrett Regional Park was explored. Huge pohutukawa and other broad-leaved trees are dotted over the slopes, and coastal forest covers the cliffs. Found there are tawapou, whau and the "bamboo grass" *Microlaena polynoda*. The view over the Hauraki Gulf was breathtaking.

Maureen Young, ***36 Alnwick Street, Warkworth. Email: youngmaureen@xtra.co.nz***

■ Waikato Botanical Society

TRIP REPORTS & TALKS
September talk – Waikato Wetlands
Bev Clarkson, wetland ecologist, highlighted the fact that the Waikato is the wetland centre of NZ because of the number and range of wetlands present. Nearly 30% of original wetlands (some 30,000 ha) remain. The main ones are restiad peat bogs (rain-fed, low nutrient systems), dominated by wire rush (*Empodisma minus*) and cane rush (*Sporadanthus ferrugineus*), members of the Southern Hemisphere jointed rush family Restionaceae. These lowland bogs can form extensive raised bogs covering several thousand hectares, eg Kopuatai at 9,000 ha. These bogs are typically very old, some dating back 15,000 years.

Fens, which are dominated by a mixture of herbaceous and woody shrub species, and swamps, are also common types. Fens are usually several hundred years old and often occur on the margins of intact bogs, while swamps are more recent or have a long history of disturbance such as flooding. Swamps typically are high in nutrients and have a relatively high water table and thus are susceptible to being invaded by introduced weedy tree species.

Several wetland restoration projects are currently underway throughout the Waikato. These are usually centred on restoring the water table but at Torehape Peat Mine in the Hauraki Plains a trial on restoration of the natural cover is being undertaken with considerable success. An interesting feature of the trial is the appearance of the uncommon redbeard orchid, *Calochilus robertsonii,* both in and around the trial plots.

October Field Trip – Koropupu Scenic Reserve, Waitomo
The reserve is on limestone ('karst') country, with the usual bluffs, steep-sided gorge and a stream that eventually disappears into a cave. Noticeable was the damage caused to more exposed shrubs and rata vines from the severe frosts of last winter. The reserve is covered with unlogged matai/kahikatea forest. Despite this, the canopy trees are only average in size apparently as a result of the area having been burnt off in pre-European times. The valley soils are derived from limestone and there are plants, including ferns, adapted to this. On the ridges the soil is derived from volcanic ash and a different suite of plants occurs, including pukatea, which is usually found in semi-swamp forest.

One species of particular interest is the limestone fern *Asplenium lyalli,* and associated hybrid with *A. flaccidum.* At the edge of the forest near the stream a population of the threatened shrub *Teuchridium parvifolium* is declining in abundance probably as a result of stock access to this part of the reserve.

Martin Caws

November Meeting – An introduction to fungi
The fruiting bodies of some common and uncommon fungi found in NZ were the focus of Don Horne's photographic presentation. We were shown superb close-up views of the complexity of the fruiting bodies of a large number of species of basidiomycetes and ascomycetes. Most of Don's photos included a view of the patterns and textures of the fungi gills, where spores are produced. We learned that each taxon has its own spore pattern, and that this is used to help identify the species, using a spore print.

There are approx. 6000 fungal species in NZ, although the number of endemic species is not known. Don has recently produced a field guide to fungi ($14.95) as part of the Reed New Zealand Nature Series.

Merilyn Merrett

2002 PROGRAMME

Wednesday 20 March	Launch of the *Botany of Waikato* publication. 136 p. $45 including P&P.
Monday 25 March	AGM followed by talk "Native birds in Hamilton City" from Landcare Research scientist John Innes.
Saturday 20 April	Kaimai Range from top to bottom (i) Kamai Summit loop track, (ii) McNeill's Bush.
Monday 13 May	Field ecology in the deserts of Mexico: a photographic essay. Focus is on the Baja Californian Peninsula. Jake Overton.
Monday 10 June	New Caledonia. Talk by Chrissen Gemmill and Bruce Clarkson.
Monday 8 July	Weaving with native plants. Talk by Rana Kete, weaving tutor.

Theresa Downs, c/o Dept Biological Sciences, University of Waikato, Private Bag 3105, Hamilton. Email: t.downs@waikato.ac.nz

■ Rotorua Botanical Society

TRIP PROGRAMME

Sunday 7 April	Maleme Bush Scenic Reserve, Ohakuri. A 17 ha remnant of podocarp dominated forest containing the southernmost protected mangeao in the central North Island. Leader: Paul Cashmore.
Sat 4 – Sun 5 May	Waimana Valley, Te Urewera National Park. DoC's Otamatuna ecosystem restoration site, where intensive control of introduced animals is being undertaken. Many palatable species are regenerating and kokako can be seen. Leader: Willie Shaw.
Saturday 8 June	Mt Ngongotaha Scenic Reserve. Leader: Chris Bycroft.

Saturday 8 June	AGM followed by pot luck dinner. Guest speaker Peter de Lange, DoC Science & Research, Auckland, will speak on "The flora and fauna of Norfolk Island – some good news at last!"
Sunday 7 July	Hadley QEII Covenant, Whakatane. 18 ha semi coastal tawa dominant forest; plus nearby a similar-sized, covenanted kanuka dominant forest. Leader: Derek Gosling.
Sunday 4 August	Okataina Scenic Reserve. Northern rata. Leader: Barbara Swale.
Sunday 1 September	Lindemann Loop Track, Kaimai Range. Regenerating podocarp/broadleaf forest including kauri, tawa and tawari. Many orchids. Leader: Walter Stahel.
Sunday 6 October	Lower Kaituna Wildlife Mangament Reserve. The best remaining wetland in the Tauranga Ecological District. Leader: Graeme Jane.
Sunday 3 November	Lake Rotoiti and Lake Te Hapua. Subject to weather, a boat trip to various sites on Lake Rotoiti plus other wetlands, forest remnants and beaches. Leader: Sarah Beadel.
Sunday 1 December	Iwitahi Orchids. One of the central North Island's best orchid spots. Leader: Bruce Irwin.

President: **Willie Shaw** 07 362 4315
Secretary: **John Hobbs** 07 348 6620, c/o The Herbarium, Forest Research, Private Bag 3020, Rotorua.
See also www.wildland.co.nz/botanical.htm

■ Wellington Botanical Society

TRIP REPORTS & MEETINGS

October – Dobsons/ Tauherenikau

The objective was to botanise the Marchant Ridge track (Puffer Track) in the Tararua Range as far as the site of the old Dobson Hut. Steady progress was made through lower slopes of bush regenerating from scrub into the beech/kamahi forest on the ridge. A good number of plants previously recorded were relocated and a number of additions were recorded. The highlight of the morning was relocating a group of southern rata (*Metrosideros umbellata*); not too difficult a task as the largest of the group (est. diam. 1.3 m) is immediately adjacent to the track. Another pleasure was finding *Brachglottis kirkii* right by the track.

1-2 December – Eastern Wairarapa

The Uruti Dunes, on privately owned land, are the largest dune system in eastern Wairarapa. We saw matagouri, *Coprosma acerosa, Pimelea arenaria, Calystegia sepium, C. tuguriorum,* spinifex and pingao. In the wetlands were *Schoenoplectus tabernaemontana* (= *C. validus*), *S. pungens* and *Bolboshoenus fluviatilis.* In the afternoon we botanised the Riversdale Beach dunes south of the village.

On Sunday we visited the mouth of Kaiwhata River on Homewood Station. We botanised along the main stream and in two tributaries and saw the drowned totara forest remnant in the surf. Of interest was crown fern growing at 5 m above sea level, and in a grove of Tasmanian blackwood, a range of forest and wetland species. *Chris Horne, Barbara Mitcalfe*

June Meeting - Recent work on the evolution of the concept of scenic reserves in NZ

Dr Geoff Park's talk bought together for the first time some of his essays which have appeared in various publications, eg *Landscape.*

In the early 1900s, the Public Works Act enabled land to be taken for scenery preservation purposes. At that time NZ was being created as a productive "Southern Britain". Thus Te Reinga Falls Scenic Reserve was set aside in the early 1900s to protect the falls, NOT the bush in which they were situated. The reserve was established to save a beautiful feature for tourists. Along the Main Trunk Railway was a prime area for setting up scenic reserves, because it was a route used by tourists. Typically scenic reserves today are small and surrounded by introduced vegetation. *Chris Horne*

October Meeting – *Sophora* (Fabaceae) in NZ: taxonomy, distribution and biogeography

Peter Heenan, Curator of Herbarium, Landcare Research, Christchurch described his taxonomic treatment of the *Sophora microphylla* complex in NZ. (See also p 23, NZ Botanical Society Newsletter No. 64 and

corrigendum No. 65, p 32.)

FORTHCOMING ACTIVITIES

Monday 18 March	Botany in Pakistan. Talk by Cathy Jones, DoC, Nelson Conservancy.
Fri 29 – Sun 31 March	Easter Field Trip – Rimutaka Range
Monday 15 April	Members' slides
Saturday 4 May	QEII Trust covenant – Stokes Valley. 22 ha of beech, podocarp, wetlands and regenerating forest.

President: **Vicky Froude**, ph: 04 233 2222 (h)
Secretary: **Barbara Clark**, P O Box 10-412, Wellington 6036. Email: kevin.clark@clear.net.nz

■ Nelson Botanical Society

December Field trip – Raglan Range

We drove to the end of the road and gradually worked our way downhill. Plants found in flower around 1300 m were *Ranunculus verticillatus, Celmisia spectabilis, Caladenia lyallii, Phyllachne colensoi, Leucogenes neglecta, Hebe tumida , H.* sp (q) (*Hebe* aff. *rigidula), Parahebe cheesemanii, Neopaxia* sp and a tiny *Myosotis* with flowers only a couple of millimetres across. Lower down we found *H. canterburiensis,* and *H. venustula, Aciphylla aurea* and *A. glaucescens, Celmisia monroi* and*Clematis forsteri.* It was a most enjoyable day with acres of Christmas spirit provided by stunted *Pinus contorta* and *P. mugo,* planted years ago with the mistaken idea that the mountains needed erosion control.

January Field trip – Mt Lodestone – Arthur Range, Kahurangi National Park

Although Lodestone is close to Mt Arthur, the geology is quite different - mainly schist with only a few bands of limestone. As we went up through mixed beech forest we found *Libocedrus bidwillii* with *Hymenophyllum malingii* and several plants of *Archeria traversii* which we don't see very often. Then an open ridge with tall *Dracophyllum traversii* before a change to mountain beech. Near the top a big limestone outcrop provided more species, including *Helichrysum intermedium* in profuse flower, *Ranunculus insignis, Schizeilema roughii, Grammitis poeppigiana* , spectacular *Anisotome pilifera* and several other exciting plants - an unnamed *Cardamine* with gleaming reniform leaves, *Epilobium gracilipes, Anemone tenuicaulis,* and a species of *Geum.* Then we cleared the bush, and lunched on a big rock overhang where we discovered *Hebe ciliolata.* On top there were a couple of gems. *Brachyglottis bidwillii,* with its unusual cream flowers with no petals, and *B. adamsii* in glorious yellow flower. We also noted *Celmisia incana, C. laricifolia* and *C. dallii, Hebe macrantha* in full flower, and a *Forstera* species. Most people returned via Flora hut, starting with a very steep descent through rocks with *Myosotis forsteri,* and then into mountain beech forest. Part way down we found several bright patches of *Drosera spathulata.* The only orchids encountered on the trip were *Caladenia lyallii, Acianthus viridis, Chiloglottis cornuta* and *Corybas trilobus.*

February Field trip – Rainbow Skifield, St Arnaud Range

We spent a beautiful day exploring Rainbow Skifield. We started by working our way up a small stream through snow tussock herbfield. On the way we found *Dolichoglottis lyallii, Brachyglottis bellidioides, Hebe macrantha, H. tetragona,* gentians and *Celmisia incana* still in flower, many lovely cushions of *C. sessiliflora,* areas of *C. laricifolia, C. lateralis, C.* aff. *gracilenta* (rhizomatous) and silvery *Astelia nervosa.* Just past a straggly clump of the interesting grass *Zotovia colensoi* we found a patch of *Drosera arcturi* and stopped for lunch. Then we climbed up over rocks and scree past scented patches of *Pratia macrodon* and scattered *Forstera sedifolia* to the main ridge of the St Arnaud Range where we began to find specialised scree species - *Epilobium pycnostachium, Hebe epacridea, Lobelia roughii, Stellaria roughii, Haastia pulvinaris* ssp *pulvinaris* and ssp *minor* with *Epilobium crassum* next to rocky patches. On the rocks we found *Raoulia bryoides, Raoulia eximia, Cheesemania fastigiata, Myosotis macrantha* and *M. australis* "white". We came down via one of the many alpine tarns in the area, seeing *Celmisia alpina, Carpha alpina, Oreobolus pectinatus, Carex gaudichaudiana* and more *Drosera arcturi* on its margins.

UPCOMING EVENTS

Fieldtrips:

17 March Rai Saddle, Cathy Jones, 03 546 9499

21 April Wakamarina Track, Jocelyn Lewis, 03 547 2812

19 May Mt Malita, Gay Mitchell, 03 548 3351

Camp:

Easter – March 28-April 1 – Kokiri, Greymouth – Leader Julie McLintock, 03 545 0989

President: Cathy Jones, Flat 2, 5 North Road, NELSON. Ph 03 546 9499
Email: cjones@doc.govt.nz
Secretary-Treasurer: Jocelyn Lewis, 22 Coster St, NELSON. Ph 03 547 2812
Email: tandjlewis@actrix.co.nz *N.B. email address change.*

■ Canterbury Botanical Society

TRIP REPORTS & MEETINGS

December – talks by Botanical Society Grant recipients

Ingrid Grüner (School of Forestry) – *Carmichaelia* species were classified into three groups according to their apparent tolerance of shade and root competition. A comparison of this ranking was made with the same species in pot trials, comparing height growth under different levels of shade and root competition. The results of the trials agreed well with the field rankings.

Manfred von Tippelkirsch (Plant and Microbial Sciences) – The reproductive strategies of the mistletoe, *Ileostylus micranthus*, were studied in the Port Hills. Within a plant the minute insect-pollinated flowers vary from being fully male to fully female. Individual plants also vary widely in their sex ratios. Many ovules fail because of predation by tiny moth larvae, and dispersal of fruit is not very effective, perhaps because of declines in fruit-eating native birds.

Terry Thomsen (Plant and Microbial Sciences) – The DNA sequences of a cytoplasmic gene shared by *Nothofagus solandri* and *N. fusca* were compared. Because the gene is cytoplasmic it is passed on only through the ovule. There was no difference within each species over the geographical range studied, but there was a small but consistent difference between species. If southern SI populations of *N. fusca* had arisen in the postglacial through segregation among hybrids produced through fertilisation of resident *N. solandri* trees by *N. fusca* pollen from a distant northern source, as suggested by Wardle and Harris in 1988, one would expect the cytoplasmic genes to be identical in southern populations of both species.

December Field Trip – Rockwood Range, NE of Raikaia Gorge Bridge

Formed from volcanic rhyolite rock, the soils of this range are more acidic and infertile than those derived from the prevailing greywacke rocks of Canterbury. We listed some 140 native species of ferns, podocarps and flowering plants, and although these did not include any unique to the locality, they combine to form quite unusual kinds of vegetation, especially compared with nearby ranges.

Of interest were trees and seedlings of southern rata, which is quite rare in the Canterbury foothills, and, to the best of our knowledge, by far the easternmost occurrence of *Ranunculus lyallii.* More characteristic of the upper catchments of the rivers draining the Main Divide, the buttercups formed vigorous colonies in a broad hollow with dense red tussock. *Peter Wardle*

Summer Camp, 6-13 January – Golden Bay

Monday: The 23 camp members visited coastal forest below the visitor centre of Puponga Farm Park, containing northern species such as karaka, whau, kohekohe, large-leaved milk tree (*Streblus banksii*) and climbing blechnum (*B. filiforme*). On the adjacent part of Farewell Spit, the dunes were dominated by bracken and a host of introduced plants, but kanuka and mahoe seem set to eventually form low forest. Other native plants persist amongst the exotics. In contrast, wet dune slacks were predominantly native. In the late afternoon we visited Wharariki Beach where the wind-shorn vegetation on the inland side of stacks included a mat-forming coprosma similar to *Coprosma propinqua*, a very variable unnamed celmisia with affinities to *Celmisia gracilenta,* southern rata, and *Pimelea prostrata.*

Tuesday: We walked to the old asbestos mine at the head of the Takaha River, where colonising among mine tailings were an endemic *Colobanthus* and an ultramafic form of *Hebe albicans.* After lunch we ascended the ultramafic slopes to Chaffey's Hut through open manuka. Plants of interest included *Chionochloa cheesemanii, Myosotis petiolata* and two further ultramafic endemics, *Carex devia* and a dracophyllum resembling *Dracophyllum kirkii.*

Wednesday: When the rain eased in the afternoon some visited Shannel Courtney's 6 ha covenant at Pohara. Through persistent effort, Shannel has restored his formerly-grazed, weed-infested forest on the coastal limestone to its former glory. Weeds included yellow jasmine, *Cotoneaster glaucophyllus*, asparagus vine, hawthorn, barberry and *Tradescantia fluminensis*. The forest is dominated by northern rata, mahoe, karaka and nikau but also contains over 100 other native vascular species, some represented by only a few plants, such as *Sophora longicarinata* and *Pseudopanax macintyrei*.

Thursday: An excellent day at Whanganui Inlet was had. On the slopes above the shore we found kawaka, tanekaha and *Astelia trinervia*, all notable for being restricted to the northern half of the North Island, and Nelson province. Other plants to attract interest were *Pimelea longifolia*, the normally epiphytic shrub *Pittosporum cornifolium* and the large leaved *Dracophyllum, D. latifolium*, another NI disjunct. The main objective of the day was Knuckle Hill (510 m) to which we ascended through lush coastal NW Nelson forest dominated by hard beech on the ridges, and huge strangling northern rata. The hill is mostly pakihi of stunted manuka, with *Gleichenia dicarpa*, *Baumea teretifolia* and *Lepidosperma filiforme,* but with a patch of forest probably more typical of what prevailed before fire reduced the vegetation. This patch consisted of a canopy of mountain beech, silver pine, yellow-silver pine, southern rata and kamahi with an understorey including *Phyllocladus alpinus, Brachyglottis* aff. *buchananii, Alseuosmia macrophylla, Dracophyllum townsonii* and *Gahnia procera.*

Friday: The morning was spent visiting The Grove, a forest remnant on a limestone outcrop, and the limestone cliffs at Tarakohe. Both were badly infested with weedy tree species. The middle part of the day was spent walking to the Wainui Falls. Additions to the usual range of lowland forest species include the fern *Leptolepia novae-zelandiae* and plants from the *Anaphalioides trinervis* complex (= *Gnaphalium keriense*).

Saturday: Shannel guided us up Dry River to the spectacular Rawhiti Cave. Woody weeds dominated the lower part of the valley, but near the cave the forest was dominated by mahoe and other broadleaved species with matai and totara as emergents. The understorey contained some rare plants including *Teucridium parviflorum.* In the afternoon we went up the steep, rough road to the beginning of the Rameka Track. Here we were able to see the striking difference between podocarp-broadleaved forest on marble, and red beech forest on granodiorite. In the latter we saw the long-leaved dracophyllum endemic to the area, and *Alseuosmia macrophylla* and *A. pusilla* growing side by side.

Peter Wardle, Colin Burrows and *Bryony Mcmillan*

February – Boundary Creek Scenic Reserve, Greta Valley, N Canterbury

This is a deeply incised gully draining farmland, with black beech (*Nothofagus solandri*) on the spurs and kanuka/mixed hardwood bush (including massive totara) in the creek bed and tributaries. A feature of the bush was several vigorous stands of the vulnerable *Teucridium parviflorum.* Mature trees of the usually coastal ngaio with numerous saplings were seen. Twenty-two fern species were recorded. Grassy banks yielded *Microlaena stipoides, Echinopogon ovatus* and *Arthropodium candidum* while *Clematis afoilata* in seed was conspicuous above the stream. *Bryony Macmillan*

■ Botanical Society of Otago

PROGRAMME

Wednesday 10 April	AGM at 7.30 pm followed by a talk by Emeritus Professor Alan Mark.
Sunday 14 April	Laboratory-based workshop run by Dr Kelvin Lloyd: Identification of NZ *Chionochloa, Festuca* and *Acaena* spp. 10.00 am Botany Dept.

Summer Camp, 28 December-6 January – Mt Cook to Omarama and more

(Joint camp run by the Otago and Wellington Botanical Societies.)

28 December: In the morning we visited Pukaki Scientific Reserve, previously grazed tussock grassland but now fenced to exclude rabbits. Near the road small, red tussock and fescue tussock grasslands fringe seasonally wet areas. The wetland species included *Pratia perpusilla* and *Epilobium angustum* while the grasslands proved a prime site for orchids including *Prasophyllum colensoi, Microtis oligantha* and *Thelymitra longifolia.* Uphill from here, old moraine provided protection for shrubs and other plants. Although dominated by *Discaria toumatou, Aristotelia fruticosa* and *Coprosma propinqua* plus introduced

shrubby weeds, we did find interesting plants including *Asplenium flabellifolium* and *A. richardii* and the spider orchid *Corybus trilobus.* Some even managed to find flowering plants of *Hebe cupressoides* for which the reserve was created.

In the afternoon we botanised an area of low lying grassland and bog surrounding a small alder-lined lake, the water source for Pukaki Downs Station. On the last slope to the lake we came across single isolated plants of *Aciphylla aurea* and *Olearia virgata.* The latter may have been one of the few remaining shrub species alleged to have originally covered this area. *Gael Donaghy & Robyn Bridges*

29 December: For a bit over an hour we botanised our way through Governor's Bush behind Mt Cook Village. Mosses, liverworts, ferns, *Lagenifera*, orchids, varieties of *Dracophyllum* and *Gaultheria,* and *Parahebe catarractae* were seen. With the weather clearing we walked up Mt Sebastopol. Because of the steepness I was unable to go far but admired the huge mountain *Celmisias* and the white-leaved *Brachyglottis haastii.* An unusual lichen collected by Allison Knight was *Omphalina alpina*, which is a basidiomycete unlike most lichens which are ascomycetes. *Beth Andrews*

31 December: Eight visited Kea Point and Tasman Glacier Moraine. This undemanding walk gave us time to study the vegetation and we noted that snow totara near The Hermitage was massed with red fruit, whereas on the Mt Sebastopol track it was still in full flower. *Gingidia montana, Parahebe decora* and *Leucopogon fraseri* were other plants seen. In the afternoon we visited the Tasman Glacier. The lateral moraine was visibly dominated by golden *Aciphylla aurea* in full flower. On the terminal moraine *Raoulia australis* and numerous dead-looking, twiggy *Helichrysum depressum* were plants of note.
Audrey Eagle

1 January: The soft sediment of the western lakeshore of Lake Tekapo proved to have some interesting plants. There were mats of the little *Leptinella maniototo*, tiny *Crassula sinclairii* in flower, *Lilaeopsis ruthiana* and carpets of *Neopaxia linearifolia* as well as a small plant with a disproportionately large blue flower which turned out to be *Parahebe canescens.*

During a quick sortie in the rain after lunch to a wind-scoured area 100 m from the lake we discovered several unusual plants including *Raoulia monroii* and *Convolvulus verecundus* ssp *verecundus*, the latter having rosettes of grey-brown rabbit dropping shaped leaves arising from a deeply buried runner. Other plants of interest were *Pimelea pulvinaris,* the small broom, *Carmichaelia nana,* and the bright yellow vagrant lichens, *Chondropsis semiviridis,* moistened and flat to the ground. *Gael Donaghy*

3 January: Freehold Creek drains into the west side of Lake Ohau. Initially we walked through grazed tussock dominated by *Hieracium* before entering mountain beech forest. In flower was the red mistletoe, *Peraxilla tetrapetala* and the orchids, *Chiloglottis cornuta* and *Microtis oligantha.* Above the bushline few unexpected plants were found, except cream-flowered hybrids of *Dolichoglottis lyallii* and *D. scornzoneroides.* The lichen flora on soil, rock and bark was especially rich. *Allison Knight*

6 January: Following his interesting talk the previous evening as part of the DoC Summer Programme, Geoff Rogers offered to show us four very dry, degraded areas with shrubland restoration possibilities.

First a terminal moraine site in the Pukaki Conservation Area, still being grazed and with six species of shrubs: *Carmichaelia petriei, Coprosma propinqua, Discaria toumatou, Melicytus alpinus, Muehlenbeckia complexa* and, tightly laced with it, *Sophora prostrata.* This reserve is expected to recover.

Driving onto the featureless flats of the Mackenzie Basin we looked at an example of the extremely shallow Tekapo dendritic drainage system. A series of dry interfluves and shallow, slightly damper channels, dominated by rabbit-infested *Hieracium* and hard tussock pasture, contain several rare and endangered plants. Dedicated searching eventually located a number of interesting plants including a few tiny plants of *Leptinella* "Clutha", previously known only from the Pisa Range in Central Otago, and a *Helichrysum* species not seen there before. Further along the road on the same property, we were shown an exclusion plot, one of ten set up by DoC ten years ago in different parts of the Mackenzie Basin. Regular monitoring has seen little noticeable difference in plant recovery within and without the plot, although Graeme Jane did note three shrub species within the plot not seen on the grazed area outside.

The last study site was on the terraces and bed of the Tekapo River. In the braided river bed the brilliant

ruby berries of *Coprosma atropurpurea* glowed among mainly exotics. The dry stony slopes, although sparsely vegetated, had interesting species including *Lepidium sisymbrioides* ssp *sisymbrioides, Pimelea sericovillosa* and more *Leptinella* "Clutha". *Val Smith*

CONFERENCE ANNOUNCEMENTS

■ **18th John Child Bryophtye Workshop, 28 Nov – 3 Dec.**

Based at Albert Town, near Wanaka, Central Otago. For registration forms and more information contact:

Geoff Spearpoint, P O Box 188, Lincoln University, Canterbury, NZ

RESEARCH REQUEST

■ ***Coprosma* and its fruity colours: be a part of a survey this autumn!**

INTRODUCTION

Have you ever been walking through a beautiful stretch of snow tussock grassland and noticed that there are an awful lot of colourful, rich, ripe, juicy drupes on the coprosmas? And have you ever noticed that what appears to be an otherwise ordinary population of *Coprosma cheesemanii* or *Coprosma ciliata* is producing a veritable rainbow of different coloured fruit? Have you noticed that different individual plants of what you swear is the same species are producing pink, yellow, white, orange or red berries?

I have, and this has become part of my PhD on the evolution of fruit colour in coprosma! This phenomenon of different morphologies within a species population, known as a **colour polymorphism**, may give me some insight into what is happening in the genus as a whole. So, here is a request to all dedicated BotSoc members who may be heading out to the field over the next few months. As part of my PhD, I am interested in observations on the fruit colour of coprosmas, particularly of two montane-alpine species, *Coprosma ciliata* and *C. cheesemanii*. Most species of New Zealand *Coprosma* (Rubiaceae) produce fruit of only one colour. This suggests that there are either environmental or genetic constraints on the production of alternative colour phenotypes. Seven species are the exception to this, and exhibit varying levels fruit colour polymorphism. Two closely related species, *Coprosma cheesemanii* and *C. ciliata* display the most extreme levels of this variability, with up to five general colour categories, ranging from red, pink, and orange to yellow and white, all intermingled within the same population. Both species produce a copious annual fruit crop, so the colourful fruit display is truly spectacular! From my studies I can say that an individual will only produce ripe fruit of only a single colour over a season, and from one season to the next. Therefore, fruit colour is a constant character with a genetic basis whose expression does not appear to be overly influenced by environment.

Because I cannot travel the far reaches of New Zealand, I need to contact outdoor enthusiasts with a botanical bent and full colour vision who can identify these two species of coprosma and note the colours of fruit occurring within a population. I thoroughly recommend Wilson and Galloways' (1993) book, ***Small Leaved Shrubs of New Zealand*** for species identification. *Coprosma cheesemanii* is a low, semi-prostrate, divaricate subshrub and grows in alpine-subalpine tussock grasslands. *Coprosma ciliata* is a taller, divaricate shrub which occurs in montane shrublands and mountain beech forest understory at treeline. If you are planning to head to alpine-montane areas and would like to be a part of this survey, please contact me so that I can rush to you a "fruit colour information survey package". Your time in the field would be limited to an hour or so, and makes for a pleasant afternoon's wander through alpine meadows.

If you have fruit colour polymorphism observations for any other *Coprosma* species, these are also welcome!

Adrienne Markey, Botany Department, Otago University, PO Box 56, Dunedin.
Ph: 03 479 9061
Email: adrienne@planta.otago.ac.nz

Reference

Wilson, H.D and T. Galloway (1993). Small-leaved shrubs of New Zealand. Christchurch, Manuka Press.

NOTES AND REPORTS

■ **Reminiscences of H.H. Allan on the naming of The Allan Herbarium, Landcare Research, Lincoln, 28 November 2001.**

H.E. Connor, Botany Division, DSIR, 1942-1982

Harry Howard Barton Allan 1882-1957
CBE MA DSc (NZ) Dr Phil *Honoris Causa* (Uppsala)

(Photo: H H Allan in Auckland Street during Pacific Science Gongress 1949)

Systematic Botanist, Plant Research Station 1928-1936
Director, Botany Division, D.S.J.R. 1936-1948
Fellow of the Royal Society of New Zealand
Fellow of the Linnean Society
For. Mem. Goteborg Royal Society of Arts and Sciences
President, Royal Society of New Zealand 1943-1945
Hutton Memorial Medal 1941
Hector Memorial Medal and Prize 1942

It is a privilege to be at this naming ceremony, honouring as it does an endemic botanist of singular scientific eminence. For me it is an honour to speak of Dr H.H. Allan, my first scientific director, the person who directed me into University study, presented me Poisonous Plants to allow me to become an actor in economic botany, and then granted me the freedom to embark on a life-time of botanical exploration.

My brief, for I was given one for today, is to describe Dr H.H. Allan, his style, his persona, his charisma, and life under his ministry. A sort of "H.H. Allan as I saw him" during the period that I knew him - early 1940 until his death in 1957.

Any one who chooses can read his papers and form judgements of their merit. Everyone can see that he

received distinctions at home and abroad. Neither allows any insight into Harry Howard Barton Allan.

I first met Dr H.H. Allan in February of 1940. I am sure of the month and know that the meeting, brief as it was, took place after 12th February. I am sure of this because I had just started as a clerical cadet in the Plant Research Bureau, DSIR (Class 8, salary £80 p.a.). Botany Division was one of five in that Bureau.

Dr Allan was Director, Botany Division, and Government Botanist – what a useful title! I was introduced by my senior, I.A. McNeur, later of Botany Division.

I will try to describe Botany Division, its staff, library, and herbarium, in terms of the building it then occupied. 58 Bowen St was Botany Division's second Wellington home. It was a substantial two storey wooden house with large bay windows at the front on both floors. The position was a commanding one. It overlooked Parliament Buildings, and the site of the former Colonial Museum; it had a clear view of the Terrace and I think of the Cenotaph.

Dr Allan occupied the upstairs front room; it was probably the former main bedroom. The library was on shelves around him. It was there because he owned most of it. His own subscription of Hereditas, Genetica, Linnean Society London, and of course his own books. He sat facing the door.

In the next and smaller room A.L. (Lindsay) Poole and David Cairns each had a wooden desk, an in-out tray, and a shared bookcase. Ruth Mason was in the adjacent even smaller room complete with wooden desk. And in a larger corner room – Lucy B. Moore. Patricia Mary Travers typed, looked after the files, and did other clerical work in a very, very, very small room beside Dr Allan. That was the top floor - five botanists and Pat Travers.

The ground floor front room, which clearly had been the sitting room, was occupied by Victor D. Zotov and his technician - the only technician on the staff - Ivo W. Davey. Next door, the Herbarium. A single windowed, former dining room, reeking oppressively of naphthalene. And if I try just a little at this very moment I can still feel overpowered by it.

Herbarium boxes, of that still surviving, stiff, strong board, lined the walls. All boxes were labelled by the Herbarium Keeper, Dr H.H. Allan. The folders were labelled by the Herbarium Keeper, Dr H.H. Allan. The contents were checked by the Herbarium Keeper - Dr Allan. And, as I reflect on it, the only user I saw was the Herbarium Keeper - Dr H.H. Allan. Victor Zotov kept the grass collections in his own front room, and no one but himself and Ivo Davey touched anything - it remained a personal fiefdom even after he retired in 1968.

Finally the laboratory. The former small kitchen was the lab. It had water laid on, a Cambridge rocker, Coplin jars, methylene-blue and safranin. A complete laboratory for the times.

That is "The Portrait of Botany Division as a Young Man". And in February of 1940 that same young man had never before met someone who was an MA, a Doctor of Science, a Fellow of the Linnean Society London, and a Fellow of the Royal Society of New Zealand. Although I had experienced lots of teachers with MA's, such distinctions as his were unknown to me.

And it was all contained in a man of modest mien. Not very tall. Not very robust. Be-spectacled. Close-cropped grey hair. Always in a collar, tie and jacket. A heavy smoker. A 12-hour-day man. A 6-days a week man. A fountain pen man. And over and above it all he was quiet. Quietly spoken. Quietly about the Division. Lucy Moore wrote in his Obituary for the Royal Society[1] "He had a reputation for silence but was listened to with well-earned respect when he spoke." Another unsourced observation Lucy recorded said "He was so different from anyone else, so shy, so incorruptible, and while so shy so willing to do battle ..."

For me quiet and industrious are the most reliable descriptors of H.H. Allan. I rarely saw him not writing, though what it was about I could never detect, and much that he was writing during 1945-1948, when I saw him most in the somewhat unattractive accommodation on 8 The Terrace, may never have been published.

When not writing he might be seen at his Bausch and Lomb dissecting microscope, glasses pushed up on his forehead, and a cigarette between his lips, its smoke curling upwards. Not the sort of habit that was comfortable when I tried to emulate it. But one consequence of his heavy cigarette habit was the abundant

supply of cigarette tins from 50's of Greys, Ardarth, and Capstan which were used to hold specimens of all kinds for many years.

And that industry I admired was accomplished through 12 hour days. I tried a couple of times to get to Botany Division before he did. One could get off the interisland ferry i.e. Lyttelton -Wellington ferry - and walk to the Division by 7.10 a.m. Who was already there, cigarette between the lips, fountain pen in hand, and writing at his desk? H.H. Allan, of course.

Write prose he could. Read his papers and see the diction, the breadth of classicism and erudition he added to his botanical information. And today if you want an exciting, diverse, cultured paper re-read "Tussock grassland or steppe?" published in the N.Z. Geographer[2]. He told me it took him less than half a day to write.

At the time I am describing, the 1940s, Botany Division was engaged in what we would today call Economic Botany or Service Botany. Lindsay Poole and David Cairns had just written up ragwort. Lucy Moore was engaged to work on hard fern – a regional topic. N.Z. Flax, *Phormium,* was another economic project at Moutoa in the Manawatu with W.R. (Rud) Boyce. And emphasising the utilitarian nature of the Division the "Handbook of the Naturalised Flora of N.Z." written by H.H. Allan was published in 1940 as DSIR Bulletin 83. It was the precursor to the Weed Books –Vols 3 and 4 of the Flora of NZ Series. As the war progressed more Economic Botany – Lucy Moore on seaweeds, David Cairns on Medicinal Plants, Ruth Mason on linen flax, Victor Zotov on koksaghyz, and Arthur Healy on nassella tussock.

H.H. Allan himself had two main themes as seen from his botanical papers, the one the Economic Botany I have remarked on, and the other taxonomic botany. But the service of botany to other sciences and to users marks him out long before stakeholders and clients and contracts. After all, his Hudson Lecture of 1951[3], concluding as it did with the quotation from Ovid *Numen inest,* was entitled "Botany in the Service of the State". It is still worth an hour of your leisure time. I can only wonder who was the root cause of his indictment in that paper: "My contacts with young professional officers cause me to fear that too often they view the amateur as an intruder into a sacred circle. Indeed I have heard it stated by one of them in a congress in this country that the amateur botanist should not engage in problems that, in his view, only a professional should tackle. The amateur, I interpreted, should "keep off the grass" and "out of the forest" ...." Who was it? Could it have been..?

What intellectual stimulus did H.H. Allan provide for his staff? He had been an experimentalist in hybrids. He was one of the leaders in the newly evolving study of natural hybridism and knew about pollen sterility, dominance etc. He knew of cytology, genetics, morphology, ecology because he had read the masters, old and new, and practised ecology and morphology. He wrote for Huxley's "New Systematics"[4] of 1940, for Genetica, twice for Botanical Review[5], and the Transactions. Who among us has ever been asked to write once for Botanical Review? His reputation was well established. It is hard to judge the intellectual effect of his leadership, though one should endeavour to. But I can speak reliably of his role in the educational development of his staff. It could pass unnoticed in a general way, but would be particularly acknowledged with gratitude by each of the beneficiaries.

Quite simply, Dr Allan allowed eight Botany Division staff to obtain University degrees while working at the Division. All were thus part-time students - seven at Victoria and one at Massey. Six already held Bachelor's degrees and proceeded to Masters. A.L. Poole on *Nothofagus* (1949); W.F. Harris on fern spores (1947); M.E. Roberts (1949) on *Phormium* embryology - not the first thesis on that topic; N.T. Moar (1950) on ecology at Gollans Valley; T.W. Rawson (1950) on *Hebe* taxonomy; A.J. Healy (1944) M.Agr.Sc. on *Nassella* tussock. Official work was allowed to develop into theses.

Two of us graduated BSc and MSc. V.D. Zotov completed an MSc (1946) on the taxonomy of *Danthonia* — not the first thesis on that topic. He had been Dr Allan's original assistant in Palmerston North and joined him in 1928.

H.H. Allan propelled me into University study in May 1943 when I had been released from the Army during a temporary lull in the War. In two terms of that year I did Botany I. By January of 1946 I was collecting transplants and seeds of the grass *Agropyron scabrum* which became my post-polio thesis topic for MSc.

Just for balance and to complete the picture, six of the staff he engaged had Masters degrees at the time they joined the Division. Half of us were Allan Scholars. There were no PhD's then.

I believe I have answered my question of intellectual stimulation. He directed our preparation for research work, allocated the topics, and left it to the individual's time and trained mind.

But I do recall the one salient scientific issue discussed during two staff meetings on Saturday mornings in 1944 — the first on June 24, and the second on July 29. These I would classify as intellectual stimulation. The topic was "The Species Concept". Today, 57 years later, I can't recall the detail except H.H. Allan settling an overexcited V.D. Zotov back in his chair when the discussion became overheated.

Was H.H. Allan a friendly man? It was acknowledged that he was shy. Did he speak of his association with Cockayne, the Thomsons, or George Simpson? Or of Lotsy's visit, or Skottsberg's. Well, he didn't show off. He never said "Skottsberg and I" or "I had to correct Lotsy's error about F_1 intermediacy". Although he had plenty to be proud of he was modest. Modest, yes. Friendly?

He was never brusque, although one of his successors was. He was never impolite, nor were his successors. He had a gentle smile. I never heard him issue an order, give an instruction, or rebuke anyone. He was never lax, though I can't recall testing him. I don't think it was something we did. The H.H. Allan mystique I think was this, "Nothing should interfere with my own botanical work".

One assessment of his attitude to us might be determined by our nomenclature of him. How did we refer to him in a familiar way? Not to his face, but in our conversations. Nancy Adams and I always referred to him as H.H. And still do. Arthur Healy who knew him longer than any extant botanist, always refers to him as Dr Allan to this day, even in ordinary conversation.

I never heard anyone call him Harry, and perhaps only once or twice heard him referred to as Harry Allan. What did his scientific colleagues at the Royal Society call him? Allan? Harry? Bob Falla, Gilbert Archey, always seemed to be binomials, but Dr W.R.B. Oliver was Dr Oliver. Bruce Levy was always that couplet. What did Cockayne call him, or how did he address him in a letter? This is a very inadequate attempt to penetrate the somewhat reserved exterior of the man of whom I think we all stood in awe. I think we lived and worked in the shadow of his renown. No one lived in fear of him. We tried to live up to his expectations of us, not our expectations of him.

I was 26 years old when Dr Allan retired and passed the Division over to Lindsay Poole — not Mr Poole, please note the change in form of address. I may not have been percipient enough to comprehend the man or may have been constrained by respect for the man who was for me a kind, generous, thoughtful director, and who had created opportunities and launched me on a life-time career.

And though I have been trying to reflect our attitude to him, I am unable to estimate his attitude to us, other than his efforts at improving the academic calibre of his staff. He was never distant nor unwelcoming, though one rarely seemed to go into his office. He never seemed to crack a joke although asking me to watch the development, flowering and fruiting of *Chenopodium bonus-henricus* might have been an esoteric one.

And of his early staff: David Cairns was ambitious and left in 1944. Artist Nancy Mary Adams blossomed in his time. Bill Harris led Neville Moar to historic botany in palynology. A.J. Healy never departed from one of H.H. Allan's interests, naturalised plants. Vic Zotov was a grass man until his death. Ruth Mason developed the seed herbarium which became a foundation for the Webb-Simpson 2001 book on seeds of dicotyledons and gymnosperms. Lindsay Poole outshone everyone — he became Director General of Forests. John Hair, A.P. (Tony) Druce, Martin Bannister, and Philippa Barker who joined the Division late in his administration attained their own distinction.

I am unsure of the origin of the concept of the new flora of New Zealand series. It had DSIR support, for sure. At that time DSIR held the botanical ascendancy; the Universities and the Museums then did not have the people trained for that task. The idea was meritorious, that's clear. And it must have originated before 1948 because Dr Allan began work on it in 1949. I never heard a word about it in 1947 or 1948. I may have been too junior, but I was also preoccupied with an MSc, and had been absent for quite a long time in 1948. Things were happening about me and the "need to know" rule probably applied then, as now.

As co-author of the final volume of the Flora of NZ I acknowledge Lucy Moore as the saviour of Volume 1, and of the series. The honour, nevertheless, lies with the originator, H.H. Allan, first New Zealand born

author of a Flora of NZ.

To whom could there be a more fitting tribute, fifty years after his death, than to H.H. Allan, gentle scholar and shy leader; and what could be more appropriate than that the herbarium he founded almost 75 years ago be given his name in recognition of his merit, and to the pleasure of us who are in his line of descent.

Perhaps these few lines from Wordsworth fit H.H. Allan:

I have learned
To look on nature, not as in the hour
of thoughtless youth; but hearing often times
The still, sad music of humanity

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[5] Allan, H.H. 1937: Wild species hybrids in the phanerogams. *Botanical Review 3:* 593-65.
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Plant Record

■ ***Calytonia alsinoides* – a new naturalised record for New Zealand?**

Hugh Wilson, Hinewai Reserve, Long Bay Road, RD3 Akaroa 8161

On 30 November 2001, while making a botanical inventory of a 13 hectare block up the Western Valley near Little River, Banks Peninsula, I found a plant I had never seen before. Little pink flowers were growing among damp, partially shaded grass along a track leading from Batchelors Road through regenerating native bush to a stream. On the other side of the stream was a caravan, planted in a rather more open grassy clearing. The plant's family connections were obvious – Portulacaceae – and back home with my books it was easily identified as *Claytonia alsinoides* Sims, pink purslane, native to North America, naturalised in Europe and Britain, but as far as I know not recorded as wild before in New Zealand.

Claytonia is a genus of 24 herbaceous species in North America, extending across the Bering Strait into northeastern Asia (Mabberley 1997). New Zealand Portulacaceae have been variously placed in the genera *Claytonia, Montia* and *Neopaxia*, but currently none are regarded as belonging in *Claytonia* (Heenan 1999). One naturalised *Claytonia, C. perfoliata*, miner's lettuce is abundantly naturalised on parts of Banks Peninsula although not in the higher rainfall south-eastern corner where I live. It has tiny white flowers and stem leaves completely united into a circle. *Claytonia alsinoides* may have been intentionally introduced to the Western Valley site, perhaps as an unusual salad vegetable. It is fully but very locally wild there now, with a few hundred plants along about 40 metres of track.

The grid reference is NZMS 260 Sheet N36 926196, and the altitude is about 250 m. A specimen will be lodged at CHR.

References
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Mabberley, D.J. 1997: The Plant-book. 2nd ed. Cambridge University Press.

POSTSCRIPT
Since writing the note above I paid a visit to the Allan Herbarium, Lincoln, where Peter Heenan showed me another very recent collection from the Canterbury foothills, named *Claytonia sibirica*. In the book I had consulted at home, *C. sibirica* L. was given as a synonym of *C. alsinoides* Sims, but it appears that *C. sibirica* is the name we should be using for this taxon. It would also appear that it is native to Siberia (as well as the American northwest? I have yet to find out). Bill Sykes ventured an opinion on its invasive potential – he thought it unlikely that it represented much of a threat as a weed.

BIOGRAPHY/BIBLIOGRAPHY

■ Biographical Notes

E. J. Godley, Research Associate, Landcare Research, PO Box 69 Lincoln.

(44): George Stevenson (1878-1960)
In this note (Dec. 2001) I erroneously stated that Martha King was the artist for Cheeseman's *Illustrations of the New Zealand Flora* (1914). It should, of course, be Matilda Smith. The portrait requires the following caption: "George Stevenson c. 1904 (original held by Alan Stevenson, Blenheim)."

(45): John Smaillie Tennant (c. 1865-1958)
Although J.S. Tennant rose to become the first Professor of Education at Victoria University College, his entries in *Who's Who in New Zealand* are very brief. In 1979 I attempted to fill some of the gaps (1) and since then have gathered the further information included here. But Tennant's early life still needs illumination.

According to his Death Certificate Tennant was born in Dunedin, the son of John Tennant of the Customs Dept. The year is not given, but as Tennant died in April 1958, at age 92, his year of birth is either 1866 or 1865. If the latter, he was born in the same year and city as R M Laing.

I do not know which schools Tennant attended. He is not in the published Registers for Southland, Otago, or Christchurch Boys' High Schools, or Christ's, Nelson or Wellington Colleges. Waitaki BHS did not open until 1883. We can record, however, that Tennant first appears in the Dunedin Electoral Rolls in 1887 where he is listed as a school teacher living in Caversham (at apparently the same address as his father in College Street). This entry continues to 1893. In 1886 he appears in the University of New Zealand Calendar as having kept 1 year's terms at the University of Otago. In 1887 he had kept 2 years' terms and this entry is repeated in 1888 and 1889, a halt in progression hard to understand (perhaps country service as a teacher?). In 1890 he had completed 3 years' terms, and he graduated BA in 1891 and BSc in 1892.

By this time Tennant knew Donald Petrie (1846-1925), the Senior Inspector of Schools for Otago and the well-known botanist. They appear in the attached group photograph from the Canterbury Museum labelled as "McKinnon's hut, Lake Te Anau c. 1890." The hut was at Garden Point (2) across the lake and north of Te Anau township; and the time was probably January, 1892, when Petrie visited the lake and the Clinton River at its head (3). Quintin McKinnon (c. 1853-92) was an explorer and guide who discovered the McKinnon Pass on 17 October 1887 with Ernest Mitchell, and was drowned in November 1892 (2). J P Maitland (1831-1902) was Commissioner of Crown Lands for Otago (4), and F W Platts (d. 1941), a university contemporary of Tennant, was a young Port Chalmers solicitor who later became a stipendiary magistrate and Chief Judge, Cook Islands (5). He was the father of the late Dr W Platts, Christchurch. The group could have been on official business.

Tennant was elected a member of the Otago Institute on 11 July 1893, and is mentioned as follows in records of subsequent meetings.

1895 (13 August): "Mr J Tennant brought before the notice of the Institute a MS catalogue shortly to be printed of the indigenous flowering plants found within a radius of 25 miles of Dunedin. The catalogue had been prepared by the members of the Naturalists' Field Club and was founded upon

a similar list prepared some years ago by the former Field Club" (*TNZI 28*). This announcement could just as appropriately have been made by B C Aston, the secretary of the Field Club and a leader in its reinstitution in 1894; but Aston did not become a member of the Otago Institute until 12 May, 1896 (6).

1897 (12 October): "Mr J S Tennant BA, BSc, read a paper on some New Zealand freshwater algae collected by him, and exhibited a series of specimens. Mr Crosbie [sic] Smith gave an account of some seaweeds collected by him in the neighbourhood of Dunedin, exhibiting a large and well-preserved collection. At the close of the meeting Mr Tennant and Mr Smith exhibited microscopical preparations of several of the more interesting algae in the collection." (*TNZI 30*). Tennant had collected his freshwater algae in the summers of 1896-97 and later included a list of 22 genera in a note by Aston (7).

1898 (9 August): "Mr J S Tennant exhibited specimens of the nitrogenous nodules found on the roots of leguminous plants. The specimens were of unusual size and were on the roots of lupins growing on the Ocean Beach sandhills" (*TNZI 31*).

Tennant was a member of Council (1895), Vice-President (1896), and Treasurer (1897• 1899).

At age 29 (c. 1894) Tennant had married Edith Johrab (8) and the couple moved to Maitland Street (Electoral Roll, 1896). Tennant was described for this period as "a lecturer in the [Dunedin] Technical School and sometime Lecturer in Botany at the University of Otago" (9). The latter resulted from the death of the Professor of Biology, T J Parker, in November 1897. Tennant and W Mawson carried out the class work in botany and zoology during the first session of 1898 until Professor W B Benham arrived from England in May to take Parker's place (10,11). In 1899 Tennant graduated MA. (Details of subjects are not given in the University Calendar because he is in the list without honours.)

In 1894 Petrie had gone north to become Senior Inspector of Schools at Auckland. In 1899 Aston went north to Wellington to become "an Analyst to the Government" as from 1 May (6); and Tennant went north to become Headmaster, Ashburton High School. He stayed in Ashburton until 1905, when he became an Inspector under the Wellington Education Board (12,13). Here he was reunited with his Dunedin friends in the following expeditions:

1907 (January) Tararua Range: a three-day ascent of Mount Hector from Otaki, with Messrs. D Petrie, B C Aston, A Hamilton, W C Davies, and Alfred Jones ("an expert bushman") (14).

1907 (9-30 November): Tennant was a member (with Aston, Cockayne, Benham, etc.) of the Auckland Is party (Carnley Harbour) of the Canterbury Philosophical Institute's Subantarctic Island Expedition. He concentrated on collecting lesser-known plants : grasses (with Aston) and mosses, liverworts and lichens (15).

1908 (January) Tararua Range: three days on Mount Holdsworth with Messrs D Petrie and B C Aston (14).

1911 (January) Kaimanawa Mts: a week with B C Aston (16).

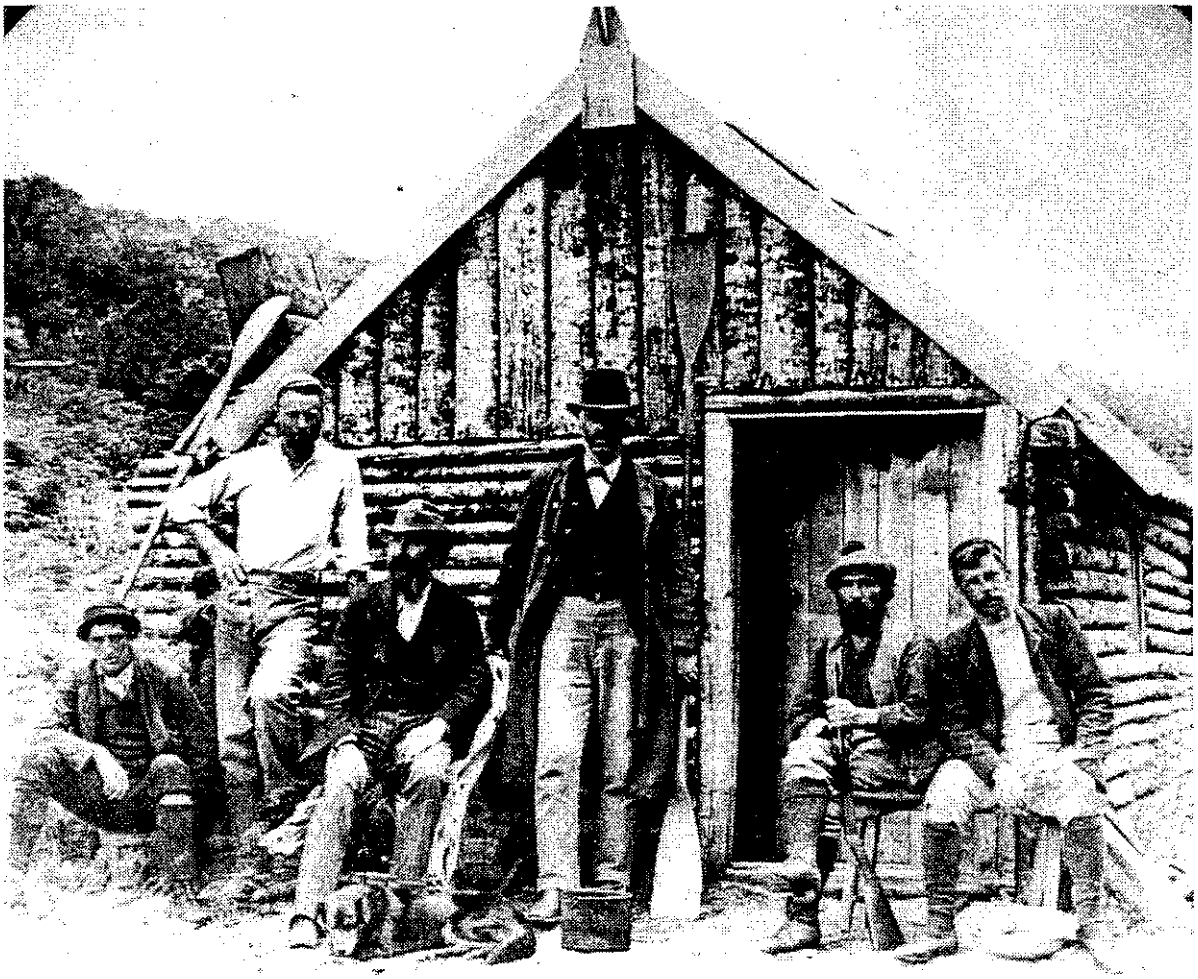
In 1912 Tennant was appointed Principal of the Kelburn Teacher's Training College and *ex officio* lecturer in education at Victoria University College. When a new Chair was created he became the first Professor in 1923. At age 60 (in c. 1925) he remarried (to Jessie Maitland in Wellington), and in 1927 retired to Kelburn, moving later to Tahunanui, Nelson (8,17). Tennant died on 7 April, 1958, and was cremated in Nelson (8). He left a sum of money for the use of the Botany Dept., University of Otago (18).

J C Beaglehole wrote in his *Victoria University College* (1949) that "Tennant's calibre was considerable – with both literary and biological interests he was a really well read man, and could quote Holy Writ to advantage. In courtesy he was second only to Kirk."

Eponymy

1909 *Poa tennantiana* - Auckland Islands; B C Aston ! J S Tennant ! The Snares; T Kirk ! D Petrie *In* Chilton *Subant. Is. N.Z.2*: 476.

Tennant Lecture (Botany Dept., University of Otago).



Group at McKinnon's Hut (Garden Point) Lake Te Anau, probably Jan. 1892. *From left:* assisitant; J S Tennant; J P Maitland; D Petrie; Q McKinnon; F W Platts (purchased from Canterbury Museum, Kennedy Collection 15121).

Acknowledgements
For help with this note I am very grateful to Ruth Lewis, Peter Wardle, and Wendy Weller, all of Landcare Research, Lincoln.

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(1) E.J. Godley 1979: The 1907 expedition to the Auckland and Campbell Islands and an unpublished report by B C Aston. *Tuatara 23*: 133-158 (Tennant in group photo); (2) K. Milburn 1998: McKinnon, Quintin McPherson (c. 1853-1892). *Southern people, A dictionary of Otago Southland Biography*; (3) B G Hamlin 1958 Itinerary of Donald Petrie's botanical expeditions with a bibliography of Petrie's botanical papers *Rec. Dom. Mus. 3*: 89-99; (4) G H Scholefield 1940: Maitland, James Pillans (1831-1902) *A dictionary of New Zealand biography*; (5) Otago Boys' High School, Old Boys' Centennial Register 1863-1963; (6) E.J. Godley 1996: Biographical Notes (22): Bernard Cracroft Aston (1871-1951) *N.Z. Bot. Soc. Newsletter (June)* 26-28; (7) B C Aston, 1899: List of plants supplementary to the Dunedin Field Club's catalogue of Dunedin plants. *TNZI 31*: 747-748; (8) Death certificate; (9) Anon. 1903: The Ashburton High School. *Cycl. NZ 3:* 819; (10) G.E. Thompson, 1920: *A history of the University of Otago (1869-1919)*; (11) D Miller, 1952: Sir William Blaxland Benham, KBE, FRS (1860-1950) *Trans. Roy. Soc. NZ 80*: 103-112; (12) *Ashburton High School 1881-1951 70th Anniversary Celebrations* (portr.); (13) W F Watters. A retrospect..*Ashburton High School 1881-1965 85th Anniversary Celebrations*; (14) B C Aston, 1910: Botanical notes made on a journey across the Tararuas *TNZI 42*: 13-25; (15) records in C Chilton, 1909: *The subantarctic islands of New Zealand 2*: 472-481, 528-538; (16) mentioned in B C Aston, 1914: Notes on the phanerogamic flora of the Ruahine mountain-chain with a list of the plants thereon. *TNZI 46*: 40-54; (17) *Who's Who in New Zealand* Edn. 3, 1932; (18) pers. comm. Prof. G T S Baylis.

■ Notable New Zealand women botanists: Betty Molesworth Allen

A.D. Thomson, Centre for Studies on New Zealand Science History, 5 Karitane Drive, Christchurch 8002

Mrs Betty Eleanor Gossèt Molesworth Allen (née Molesworth) followed Dr Lucy Cranwell Smith as botanist at the Auckland War Memorial Museum and held the position from 1944 to 1947. Betty was not a university graduate and Dr Cranwell Smith (6) referred to her as a "self-made botanist". She is included in "New Zealand Women in Science" (11) which aims to embrace as wide a spectrum of notable pioneer researchers as possible. The road to achievement in any endeavour can be varied and Betty's route shows ability, dedication and enthusiasm in her study of plants.

Betty was born at Opotiki and through continued ill-health in her childhood had little formal schooling and was mainly privately educated. In presenting the prestigious international H.H. Bloomer Award to Betty in 1995, the President of the Linnean Society of London said (5), "Mrs Allen spent more of her first twenty years in hospital than out of it and today she insists that TB, polio and cancer have made her remarkably tough in later life".

Betty's mother was a friend of the Pankhursts and when Betty was young her mother spent time in England with the Pankhursts on marches and lectures (3).

In reply to a request for information on what kindled her interest in botany, she replied (3), "Possibly through my mother's great interest in gardening and my father's vague interest in birds which made me observant". Betty's mentor was Dr Lucy Cranwell Smith and the President of the Linnean Society commented (5), "...illness defeated her resolve to go up to Cambridge [England], but she persevered with natural history through the botanist Dr Lucy Cranwell, at the Auckland Museum who introduced her to systematic biology and encouraged Mrs Allen's growing enthusiasm. One of her earliest tasks was to remount some of Banks and Solander's original material". Betty recounts that when she worked for Dr Cranwell Smith (3), "...it was her terrific botanical knowledge and dynamic personality and great help that started seriously my botanical career". She also acknowledges the help of Dr J E Holloway (1881-1945) who, "...giving me what he called a 'visitor's seat', instilled my lifelong love of ferns". Betty avers that she had no formal scientific training.

It was Dr Holloway who imbued her with an interest in the fern ally genus *Psilotum* which she looked for in whatever country she was residing in. She found the plant in Spain though it had not previously been known in Europe. This notable discovery was a tribute to her careful observation and knowledge of the plant.

After war service with the RNZAF, Betty became botanist at the Auckland War Memorial Museum when Dr Lucy Cranwell Smith left for the USA in 1944. She resigned in 1947. Betty made important additions to the moss collection in the Museum herbarium (12, p.69). Major accessions during her term as botanist included specimens collected on the Three Kings Islands by E G Turbott (b.1914) and Major G Buddle, sedges from Varner Cook, and the botanical correspondence and field notebooks of T F Cheeseman (1846-1923).

Betty then moved to Malaya, "She was offered a two-year bursary to study in Basle, Switzerland. Travelling through Malaya to familiarise herself with tropical families, she met Geoffrey Allen, married him and, with apologies to Switzerland, began collecting in Borneo, Malaya and Thailand, publishing her observations on Malayan ferns" (5). Geoffrey Allen was a noted ornithologist (5). They stayed in Malaya for 15 years. Betty and her husband were able to go into the forests in the region where they were stationed. Her period in Malaya coincided with the terrorist emergency and she showed determination and indeed courage to venture into the forests during this period. Though she never came into contact with the terrorists, "I doubt whether they would have harmed me, as they concentrated on the economy of the country - miners (tin) and planters - in their large estates of rubber earning many dollars just after the 2nd World War. Neither of which was my husband. Still, we used to hide if we did see any figures in the jungle (smelling cigarettes was my best warning).... I did go into jungle areas on my own - the males all working and females on the whole, not interested enough to put up with leeches, heat, etc. But it was unfortunate for 11 years of our time out there (Malaysia) it was guerrilla warfare. Not so in Thailand nor Borneo or Sarawak then in which we often spent from 3 months to a year at a time" (4). In her studies on ferns on the Malaya Peninsula, Betty was greatly helped by the authority on ferns in the region, Dr R E Holttum (1895-1990) in Singapore. Two ferns were named after Betty, and a limestone tunnel! (3). Betty and her husband retired in 1963; her husband died in 1989.

Dr Lucy Cranwell Smith points out (6) that the area in Spain where Betty lives near Cadiz is, "...right on the migratory bird route to N.Africa; this became a study area for her husband and herself. She found the first specimens of *Psilotum* in Europe and is best known in Europe for this find". Betty comments (3), "The country of S. Spain was little known fern-wise, and so again I was very lucky. The form of *Psilotum* here has been named after me (perhaps wrongly - it may not be really different)".

Betty's publications have been in the form of the more popular botanical books, including field-guides. Her published work in New Zealand included contributions to "New Zealand Ferns" (7) which are detailed in Editor's Preface by Marguerite Crookes (1898-1991), "To Miss Betty Molesworth (now Mrs H.G. Allan [sic]) for drawing most of the figures on plates I, II, III and IV, and for all her very real help in the preparation of this book". At the Sixth Royal Society of N.Z. Science Congress in 1947, she presented a paper entitled "T F Cheeseman and the making of a great herbarium" (9, p.185). Included in her publications in Malaysia, are contributions to Holttum's "Ferns of Malaya" (8), and articles on ferns and some jungle plants in the *Gardens Bulletin* (Singapore), and the *Malayan Nature Journal,* as well as the *Kew Bulletin* on Araceae. Betty has published three books relating to Malaysian plants: "Some Common Trees of Malaya" (1957), "Malayan Fruits" (1965, 1967), and "Malaysian Fruits" (1975, 1988). She has also published "Herbs and Spices for the Kitchen" (1978) which was published in England. In Spain, Betty has published mainly on ferns in *Lagascalia* (the Journal of the Universidad de Seville) and has published a book "Hierbas y Especias Para La Cocina" (1982). None of these publications have been seen by the writer. Betty's recent book entitled "A Selection of Wildflowers of Southern Spain" (2) describes more than 200 common plants of the region and includes fine illustrations of each species. She has contributed to "Flora Europaea" and to "The European Garden Flora". In recent years Betty has devoted her time to making people more aware of the plants of Andalucia and her book "A Selection of Flowers of Andalucia" was published in 1993, "...when she was 80, and she continues to write, research and carry out fieldwork with increasing vigour" (5).

Betty participated in the foundation of the Auckland Botanical Society and was a member from 1939 to 1972, and was its first Secretary (1). She published 4 items in the *Auckland Botanical Society Newsletter* in 1945 and 1947 and a useful small booklet "Auckland Salt Marshes"(10) in the Auckland Botanical Society Bulletin series.

Betty comments on her status as a woman in her field of science (3), "I was so fed up with men doing everything that I learned to pilot a launch, drive a lorry, etc., so that whilst on a job, I could get to isolated places to botanise. Few got grants for botany or zoology, then; how I envy the young and how they are financed when they want to travel".

Betty's honours include the H.H. Bloomer Award of the Linnean Society of London. This important international award is made to naturalists who have made important contributions to biological knowledge and who are not attached to recognised institutions such as a university or a government scientific agency. Hugh Wilson of Hinewai, Banks Peninsula, was the first Southern Hemisphere biologist to receive this award (1991). Betty was made an Honorary Daughter of Los Barrios, where she lived, a rare distinction for a non-Spaniard (5).

Acknowledgements
Mr Ewen Cameron kindly provided data on Betty's publications when she was botanist at the Auckland Institute and Museum and Mr Anthony Wright provided biographical data. The late Dr Lucy Cranwell Smith generously provided information on Betty's career.

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UNIVERSITY THESES

■ University of Auckland, School of Biological Sciences

Students awarded botanical Masters Theses in 2001

Craighead, Anthea: The development of flower colour at the cellular level.

Heibner, Charlotte: The development and ecophysiology of *Asparagus scandens* Thun.

Hinchliff, Timothy: Seasonal fluctuations in anthocyanin levels and their function in five native New Zealand forest species.

Jones, Daniel: Comparative genome analysis in hard pines *(Pinus* subgenus *Pinus)* using PCR-based EST mapping.

Keenan, Gerald: Anthocyanin synthesis and function in relation to ontogenetic ageing in native New Zealand plants.

Lee, Tet Verne: Genome release and replication of a multi copy plant episomal vector.

Milich, Raechel: Characterising *GIGANTEA,* a gene that regulates photoperiodic flowering in *Arabidopsis.*

Rajamohan: Linkage of hydroxycinnamic acids to polysaccharides.

Richards, Amanda: Identification of molecular markers for resistance to apple scab disease.

Smith, Richard: The function of anthocyanin in developing leaves of *Elatostema rugosum* A. Cunn. The effect on light and photosynthesis within leaves.

Students enrolled for botanical PhD's in 2001

Balmorj, Ezequiel: Co-suppression of gene expression in plants.

Bootten, Tracey: Plant cell wall organization.

Bus, Vincent: Genetic and molecular characterisation of genes involved in resistance to the scab fungi *(Venturia* spp) in the Pomoideae.

Carnachan, Susan: Changes in the structure and composition of the cell walls of radiata pine *(Pinus radiata)* during growth and development.

Cato, Sheree: Gene mapping in *Pinus*

Datson, Paul: Cytogenetics, hybridisation and evolution in *Nemesia.*

De Lange, Peter: Plant conservation genetics: introgressive hybridisation and the extinction of rare and endangered plants.

Drummond, Revel: Divalent cation transporters, principally Mg.

Farreyrol, Karin: Characterisation of viruses of vanilla and interaction studies.

Fitzgerald, Anna: Molecular characterisation of the apple - *Venturia inaequalis* interaction using a proteomics approach.

Fung, Wai Man (Raymond): Sucrose phosphate synthase in kiwifruit.

Höfig, Kai: Genetic engineering of male sterility in *Pinus radiata.*

Kami, Viliami: Plant virology (Viruses of squash in Tonga).

Krauskopf, Erwin: Isolation and characterisation of cellulose synthase genes from *Pinus radiata.*

Lee, Soon Aun: Perception of ethylene in fruit.

Möller, Ralf: Development of tracheary elements *in vitro* and *in vivo.*

Moore, Carolyn: Dark green Islands.

Murphy, Peter: Transient expression and disease resistance in apple.

Neill, Samuel: Anthocyanin biosynthesis and function in *Quintinia serrata.*

Salter, Joshua: The life cycle of *Prumnopitys* Podocarpaceae.

Trethewey, Jason: Cell walls of monocotyledons

Tsai, Shin-Ling: The control of root hair initiation, growth and survival.

Tutone, Ana: Isolation of magnesium transporters from plants.

von Konrat, Matthew: A systematic study of the liverwort genus *Frullania* in New Zealand.

Voogd, Charlotte: Viral vectors in *Arabidopsis*

Win, Joe: Fungal molecular biology: Fungal signal ligands involved in eliciting plant resistance responses.

Yoon, Minsoo: Functional analysis of a small subunit of RubisCO.

Botanical PhDs Awarded 2000

Bishop-Hurley, Sharon: The Isolation and Molecular Characterisation of Genes Expressed during Somatic Embryogenesis in *Pinus radiata*.

Fowler, Sarah: Isolation and Characterisation of the *Arabidopsis* Flowering-time Gene *GIGANTEA*.

Ran, Yidong: Genetic Analysis of the Genus *Clivia*.

Walden, Adrian: Genes Expressed During the Development of *Pinus radiata* Male Cones.

Zhang, Liang Tao: Identification of *Hordeum vulgare* x *H. bulbosum* Recombinants Using Cytological and Molecular Methods.

Brian Murray, Associate Professor, Plant Science Research Group, University of Auckland, Private Bag 92019, Auckland.

■ **Victoria University, School of Biological Sciences**

CURRENT BOTANICAL STAFF

Kevin Burns (Kevin's primary research interests are in plant community ecology and biogeography, and he is particularly interested in avian seed dispersal mutualisms, niche dynamics and plant morphology.)

Phil Garnock-Jones (Systematics of flowering plants, especially the New Zealand *Veronica* complex; phylogenetics and evolution; plant reproduction.)

Linley Jesson (Linley is particularly interested in the influence of ecology on evolutionary processes. These include interactions between plants and their pollinators, and plant invasions.)

Geoff Rickards (Genetics and cytogenetics)

Position vacant (Marine algal biology)

In addition, **Barry Sneddon** is collection manager for the *H.D. Gordon Herbarium* (WELTU). The herbarium has reduced the space it occupies by mounting the cabinets on compactor units and by donating some research collections to other herbaria. WELTU now houses about 20,000 plant specimens.

Several retired botanical staff maintain research programmes associated with the School: John Dawson, Margaret Gordon, Bruce Sampson, and Barry Sneddon.

Our botanical teaching now contributes to new majors (*Ecology & Biodiversity* and *Marine Biology*) since the Botany and Zoology majors were withdrawn in 2000. The net effect of this is that, although there are fewer botany classes, first year botany is taught to 120 students and second and third year botany classes now have around 50 students each. Geoff Rickards' teaching contributes to the BSc major in Cell & Molecular Biosciences and the new Bachelor of Biomedical Science degree.

Further information is available on the school's web site (www.sbs.science.vuw.ac.nz).

CURRENT BOTANICAL THESIS STUDENTS

PhD

Susan Fraser. Spore viability and development of *Gigartina circumcincta*.

Harshi Gamage. Growth of congeneric homoblastic and heteroblastic plants in sun and shade environments, in a New Zealand rainforest.

Evonne Low. Evolution of sexual dimorphism in *Hebe*.(Scrophulariaceae)

Kate McAlpine. Recruitment limitation of Darwin's barberry (*Berberis darwinii*)

Kevin Mitchell. Comparative flavonoid chemistry of the genus *Hebe* (Scrophulariaceae): independent characters for taxonomic and phylogenetic studies.

Fanie Venter. Taxonomy of the genus *Dracophyllum* (Ericaeae – Epacridoideae).

Susie Wood: Toxic Cyanobacteria - what factors contribute to their incidence and toxin production in New

Zealand waterbodies?

MSc (part II)

Richard FitzJohn. Sunfleck utilization and shade tolerance.

Mark Kearney. Reproductive biology of New Zealand *Ranunculus* (Ranunculaceae)

Bianca Maich: Allozyme assessment of taxonomy of New Zealand *Sophora* (Fabaceae)

Hayley Meehan. Pigeons and rainforest trees in Tonga: their interdependence in shrinking forest remnants.

Catherine Seamer. The production of yessotoxin by *Protoceratium reticulatum*.

Cara Weston: Morphological and flavonoid variation in *Hebe stricta* (Scrophulariaceae)

Sarah McLean: Recruitment limitation in *Libertia grandiflora* (bush iris), *Piper excelsum* (kawakawa) and *Melicytus ramiflorus* (mahoe).

MConSc

Sheree Christian: Growth and longevity of the adventive Asian kelp *Undaria pinnatifida* from the intertidal zone - Wellington Harbour and South Coast

GradDipSc

Mike Burtenshaw: A morphological study of New Zealand bottle gourd, *Lagenaria siceraria* to assess its origin.

Completed in 2001

Karena Eton (BSc[Hons]): The association of homologous supernumerary (B) chromosomes during mitotic interphase nuclei of *Puschkinia libanotica*: a confocal microscope study.

Hafeel Kalideen (PhD): Arbuscular mycorrhizal associations of *Metrosideros excelsa* and *M. robusta* (Myrtaceae).

Phillipa Scott (MSc): Reproductive biology of Senecio angulatus and S. mikanioides (Asteraceae).

Justine Wilson (BSc[Hons]): Seed germination in light gaps and shade in Karori Wildlife Sanctuary.

Phil Garnock-Jones, Professor of Plant Science, Victoria University of Wellington, PO Box 600 Wellington.

- **University of Otago, Department of Botany: Theses for 2001**

Burnett, David Alexander (2001): Polyploidy, genome size and DNA content in relation to plant growth parameters. MSc, 171 pp.

Derraik, Jose (2001): Plant-invertebrate relationships in a modified native shrubland, Otago, New Zealand. MSc, 116 pp.

Johnston, Simon (2001): *Prumnopitys ferruginea* (miro) seedling recruitment patterns in the Catlins, New Zealand and dispersal by *Hemiphaga novaeseelandiae* (New Zealand pigeon). MSc, 45 pp.

Luxlord, Andrew (2001): The ecology of the Sutton Salt Lake Scenic Reserve, Central Otago, New Zealand. MSc, 128 pp.

Neill, Kate (2001): The endemic red seaweed *Gigartina lanceata*: Population dynamics and phycocolloid chemistry in Otago, New Zealand. PhD,153 pp.

Painter, Sarah (2001): The influence of light quality of adventitious shoot initiation and development *in vitro*. MSc, 114 pp.

Phillips, Julia (2001): The nitrogen ecophysiology of intertidal seaweeds. PhD, 214 pp.

Scott, Andrew (2001): The plant ecology of an urban forest fragment: the Dunedin Town Belt. MSc, 156 pp.

Sherwood, Elizabeth (2001): An ecological study of a podocarp/broadleaf forest remnant, Southland Plains. MSc, 184 pp.

Stubbs, Wendy (2001): Studies of niche limitation within two coastal habitats, PhD, 256 pp.

Ward, Molly (2001): Upland Plants at low altitude: a quantitative comparison of life forms in two cushion bog plant communities in Southland, South Island, New Zealand. BA (Hons) Johnston Center for Integrative Studies, University of Redlands, 57 pp.

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PUBLICATIONS

Book Review

■ **"Seeds of New Zealand gymnosperms and dicotyledons" by Colin J Webb and Margaret J A Simpson.** Manuka Press, Christchurch. 2001. 428 pp. Hardback. Price NZ$90.00 (incl P&P); $72.00 for BotSoc members. ISBN 0-9583299-3-1.

Bal Fader, Botany Dept, Auckland Museum.

A bright set of carmichaelia seeds in joyous release from their pods makes an apt front cover to this "seed atlas", towards which Colin (since 1989), Margaret (until her death in 1995), and also Ruth Mason, Julie Shand, and others of Botany Division DSIR/Landcare Research, have worked so long and so well.

A biographical note has Colin as NZ's foremost expert on native plant seeds: a veritable seed Atlas himself one might say. Atlas support-money has come over the years from the DSIR, Lottery Board and FORST, open handed stakeholders to be congratulated on investing in a work of such practical value to NZ natural sciences. We can hope that some Xmas not too far away Colin, Landcare Research and Santa Forsta will be delighting us with a sister-volume on the native monocots.

The b & w photographic illustrations are copious, more than 1 750 it is said (my technician refuses to count them) and cover all species in a genus except where variation is slight, e.g. *Hebe*. There are additional plates and tables, some in colour and some to elaborate on size variation or other kinds of variability best displayed in a diagram. In genera like *Apium, Callitriche, Oxalis* and *Myoporum,* where introduced taxa resemble native ones, notes are given for distinguishing the seeds of the two groups. Australasian taxa related to ours are sometimes commented on and illustrated, e.g. in *Cheesemania* and *Coprosma.*

Colin's systematic and pragmatic talents have been well exercised in providing keys to the genera (grouped into major seed types: stones, cypselas, mericarps, etc) and in making clear and comparable species' descriptions. New seed characters have been found that either reinforce old taxonomies or give pause about accepted ones, e.g. for the latter the introduction cites *Olearia* and *Helichrysum.* It is surprising what unlikely groups lend themselves to a seed-driven taxonomy, a notable example being *Metrosideros* and *Kunzea/Leptospermum.*

Scanning this work will bring the general reader many a frisson: well-kept secrets in *Colobanthus* and *Scleranthus;* new hope in *Coriaria* and *Hoheria;* a useful account of *Senecio* fireweeds; neat distinctions in *Muehlenbeckia;* progress in *Acaena* biology; novel differences in *Rubus* and *Solanum;* a joke in *Scutellaria.* My favourite would be the elaboration for *Coprosma,* where subtleties and striking distinctions are revealed. Just one example: Michael Heads drew attention to the strange deep notch on the inner face of the pyrenes of *C. obconica* and *C. wallii* (Heads 1996: 403) but here we see that several other species have it too, including, remarkably, the utterly dissimilar *C. chathamica* (Chatham Is.) and *C. pilosa* (Norfolk Is.).

A reviewer must leave aside larger questions like "Are seeds <u>really</u> conservative structures?" and be content with assisting in a minor way. So I have fished out below a few small carps, from places where I think material is misleading or where published work has been overlooked. To conclude this part of the review, while I don't accept what the introduction says about seeds usually being treated "superficially at best" in the general run of NZ taxonomic revisions that is certainly the case for our current dicot Flora volume. We can be confident that the next big task for Landcare Research taxonomists, the writing of an Excursion Flora, will find this seed atlas indispensable.

Now for some closer analysis. Firstly, a pointer from the business arm of my department. The weight of the glossy pages means that one is handling here almost 2 kg, about the same as those big 600 pp. "Flora of New South Wales" volumes. I suspect that the atlas's binding might not be up to such a manly task — there is a lot of flex between boards and body and the endpapers are not cloth-reinforced (cf. the fate of many copies of Flora NZ IV, now saccate through use, love and the occasional dropkick).

The families are arranged alphabetically, as are subfamilies etc. (unlike the reprehensible practice of Flora NZ IV & V). But the DNA revolution means that readers must now cope with the problem of "jumping

genera" (quick – which family is *Nothofagus* in?), so an index to families and genera on an inside cover would have been helpful. Also, the extensive list of voucher specimens could well have been put somewhere else than between the more frequently consulted glossary and index.

Some of the b & w photographs have been taken with the stereomicroscope (SM) and the others with the scanning electron microscope (SEM). Those of the SM are presented mostly at about x 3-15, generally on a black background. Even where they are on a paler ground shadow is lacking. My gripe then is that they are generally rather bland, and this is coupled with the certain lack of crispness usual in SM work (depth-of-field problem). For example, *Clematis* achenes, laid out flat and lit in darkfield illumination to show off their plumage, have given clear and artistic plates, but those of the equally interesting but small and chunky *Ranunculus* achenes are much less successful. And apparently because of reliance on the SM the larger seeds and stones *(Corynocarpus, Corokia, Beilschmiedia, Carpodetus, Hedycarya* etc.) are not well shown – a 35 mm camera with a macro lens would have given a better result.

My own preference for objects of seed-size is for stereo-pair photography – see accompanying Figure 1, and also the splendid images of Eric "Silver Screen" Scanlen in issues of the NZ Native Orchid Group Journal.

In the atlas's introductory material Moore & Irwin (1978) is cited, the best place *(pace* Bentham & Hooker) to learn about things like orientation of the ovule and embryo. We are told that anatomy is not part of the subject matter but in fact quite a number of endocarps are shown in section *(Myoporum, Prumnopitys, Scaevola, Tetragonia,* etc). To give a lead into that subject the references should have included Corner (1976) – lese-majesty not to – and also the more straightforward account of Werker (1997). The seed-coat terms "unitegmic" and "bitegmic" have been used *(Peperomia)* but are omitted from the glossary. And despite Corner's first maxim of seed-study – find the micropyle – this term is not in the glossary either. (Through a curious coincidence the reclusive micropyle is clearly visible only in the photos of one of Corner's specialities, *Streblus).*

The terms used in describing seeds are outlined in a glossary and there is an SEM plate of testa patterns. Stearn's "Botanical Latin"* should have been referred to here, especially for its well-loved sketch of such patterns. There is also a colour chart (cf. Gardner 2001), though its bits are set out in an unusual fashion and named in a non-Latinate way.

The seeds are described as plane objects not solid ones, thus elliptic rather than ellipsoid, etc. This is perhaps a less serious crime than non-Latinized colour names and does make for brevity when shape varies according to which side the seed is viewed from.

The terms "dorsal" and "ventral" are used in describing fruit stones, the former generally for a longitudinally-ridged face and the latter for one that is swollen. To do so may be natural but is not strictly correct: pyrenes of *Coprosma* have dorsal and ventral faces but an axis-centred structure like a stone does not. An unfortunate slip is that the glossary reverses the definition of these two terms with respect to "abaxial" and "adaxial".

Entries for particular groups raised questions in my mind, as follows.

In the podocarps the all-important location of the micropyle is not indicated in the photos nor mentioned in the descriptions.

In the *Atriplex (Theleophyton) billardierei* complex, the experience of de Lange et al. (2000), who grew an extensive range of plants over a number of years, amplifies the atlas's account; that is they found that seed size did not vary excessively on an individual plant and could be used to distinguish two taxa.

For *Beilschmiedia* with its intriguingly layered structure in both fruit wall and seedcoat see Gardner (1996a). Our two species are very different in anatomical details; also, the persistence of the calyx lobes on the fruit of *B. tawa* is unusual in the genus.

There is a lovely four colour-plate treatment of *Carmichaelia* and allied genera but we are given no hint of any biological reason for the brightness and patterning of these seeds. Perhaps, as suggested for *Gahnia*

* William Thomas Stearn (1911-2001), taxonomist and botanical historian, *vir perfecte planeque eruditus.*

nuts (Gardner 1997a), their picturesque dangling once piqued the interest of parrot and moa?

It is said that in *Coprosma, Galium* and *Nertera* there are what appear to be white appressed hairs on the endocarp surface. These are raphides, cells bearing longitudinally-bundled crystals of calcium oxalate which tend to become prominent in dried material. See Figure 1A, *Leptostigma setulosum (Nertera setulosa).*

The illustration for *Homalanthus polyandrus* takes some working out – the seeds appear as pale when they are naturally dark and two of the three are hardly typical in shape. Also, fresh or preserved material should have been used to show the very distinctive aril.

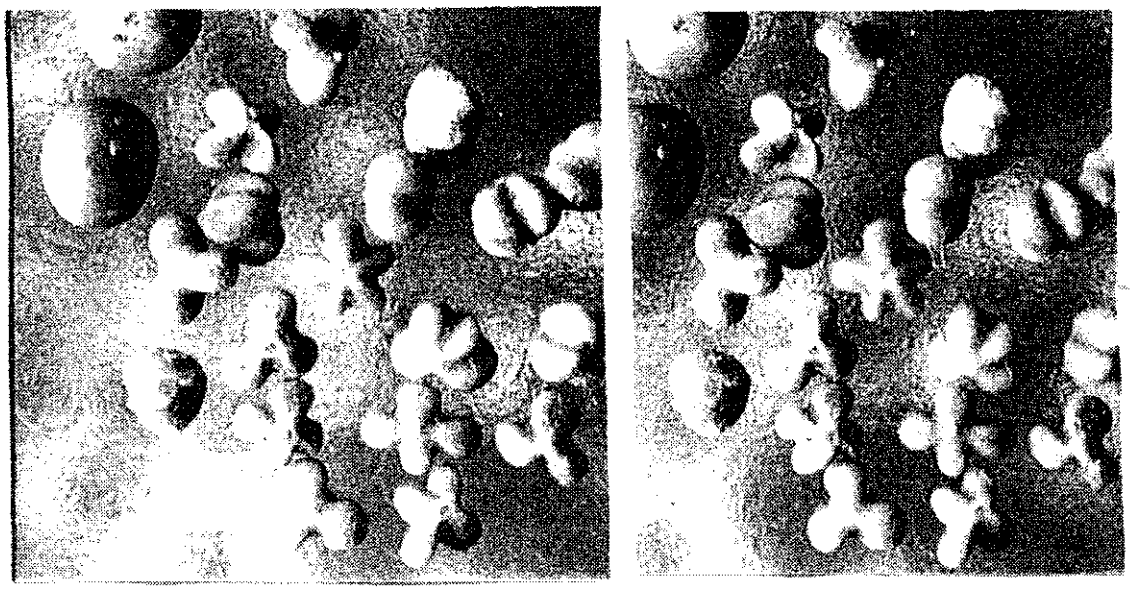

Figure 1

A. [upper stereopair] *Leptostigma setulosum* (Rubiaceae). Fruit and pyrenes; these variously fresh, weathered, and dissected to show the position of the operculum.
Note the long antrorse hairs on the fruit and the raphides on the pyrenes.
Scale grid of 2 x 2 mm.

B. [Lower stereopair] *Macropiper melchior* (Piperaceae). Fruitlets and seeds. x c. 3.5.

In *Kelleria* and *Pimelea* what is described as the seed is actually the stone (Heads 1990).

Macropiper melchior is described as having "3 (very rarely 4)" ridges to its seed, but see Figure 1B and also Gardner (1997b, fig. 3E).

In *Melicope* the seed is described as being ejected on a funicle. There is in fact notable variation in "seed attachment" in the genus – in our species the funicle is very short and the seed is held out from the open fruit on a partially detached axile strip of pericarp (Hartley 2001).

For *Melicytus* the squib of Gardner (1995a) has been overlooked. Seeds in this genus tend to have a fleshy outer coat or apical cap, and, though birds are likely to be primary dispersers, insects perhaps carry off spilt seed.

Arillate seeds of *Pomaderris* were drawn by Gardner (1996b) after he had seen an ant dragging a seed of *P. kumeraho* into its nest. The Australians are in no doubt that in this genus the aril is an elaiosome (Berg 1975). Similarly, the latter author refers to Australian *Phebalium* species as being ant-dispensed, and the seed of our *P. (Leionema) nudum* does have a somewhat fleshy pad at its hilum.

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New Publications

■ Kermadec Islands Flora – Special Edition

W.R. Sykes, C.J. West, J.E. Beever and A.J. Fife, Manaaki Whenua Press 2000. RRP $59.95

Kermadec Islands Flora – Special Edition was published at the end of 2000 but may have escaped your notice until now, as the publisher missed several opportunities to announce its arrival in this newsletter! Manaaki Whenua Press would like to apologise to New Zealand Botanical Society members for this protracted oversight.

Bill Sykes' *Kermadec Islands flora – an annotated check list* (1977) was a definitive work but had gone out of print. It has been reprinted in *Kermadec Islands Flora – Special Edition*, and updated by the inclusion of several recently published papers, a colour photograph supplement and a new Preface by Bill Sykes. The resulting compilation provides a single reference of the Kermadec flora to meet a vital need for plant data in that region.

Copies are still available from Manaaki Whenua Press, and Botanical Society members receive 20% discount off the RRP. The price includes post and packing and is NZ dollars for NZ customers only. (RRP for overseas customers is US$59.95.)

Online ordering through website at www.mwpress.co.nz

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Journals Received

New Zealand Native Orchid Group Journal No. 82 – March 2002
Edited by Ian St George [ISSN 1170-4543]

Original papers in this issue are: Gary Penniall – Some *Prasophyllum* pollinators?; Graeme Jane & Gael Donaghy – Ruapehu and Taranaki – two puzzles.

Notes

Notes

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