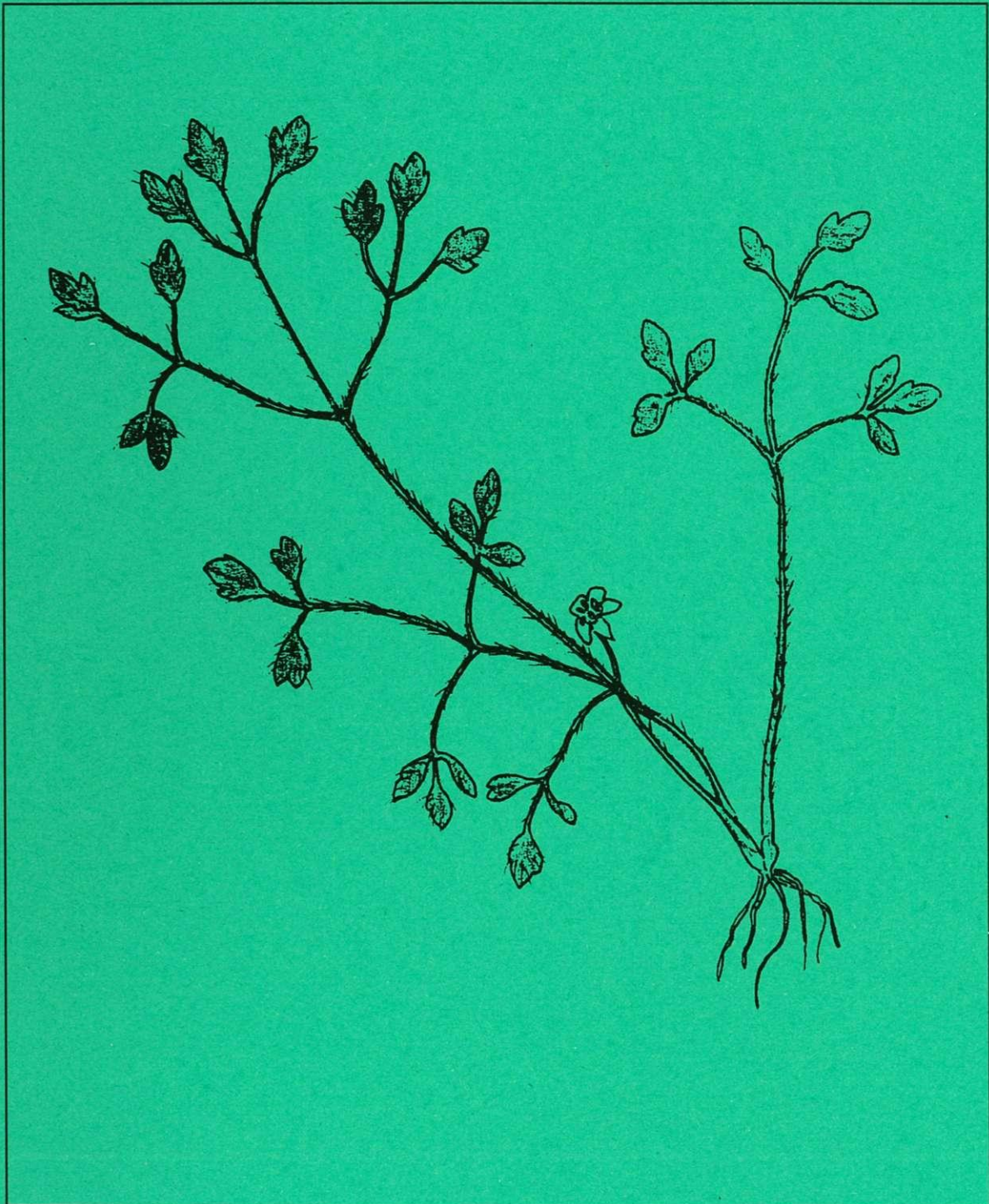


NEW ZEALAND BOTANICAL SOCIETY

# NEWSLETTER

NUMBER 59

MARCH 2000



## New Zealand Botanical Society

President: Jessica Beever  
Secretary/Treasurer: Anthony Wright  
Committee: Bruce Clarkson, Colin Webb, Carol West

Address: c/- Canterbury Museum  
Rolleston Avenue  
CHRISTCHURCH 8001

### Subscriptions

The 2000 ordinary and institutional subs are \$18 (reduced to \$15 if paid by the due date on the subscription invoice). The 2000 student sub, available to full-time students, is \$0 (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 28<sup>th</sup> February each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next year's subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

### Deadline for next issue

The deadline for the June 2000 issue (Number 60) is 25 May 2000.

Please forward contributions to: Joy Talbot  
23 Salmond Street  
Christchurch 8002

Contributions should be sent by e-mail to [m.king@irl.cri.nz](mailto:m.king@irl.cri.nz). Files can be in WordPerfect (version 7 or earlier), MS Word (version 6 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. Macintosh files cannot be accepted so text should simply be embedded in the email message.

### Cover Illustration

*Ranunculus ternatifolius*, listed as Vulnerable in the latest threatened plants ranking, is a small, soft, stoloniferous buttercup which lives in damp red tussockland or open, periodically flooded forest in the central North Island (two sites) and eastern South Island. Where it occurs it is sparse to locally common. Drawn by Lloyd Esler, 15 Mahuri Road, Invercargill. Drawing x2.



NEW ZEALAND BOTANICAL SOCIETY  
**NEWSLETTER**  
NUMBER 59 MARCH 2000

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## NEWS

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### New Zealand Botanical Society News

#### ■ From the President

##### Allan Mere Award

Hugh Wilson of Banks Peninsula recently became the first recipient of the Allan Mere under the new regime administered by the New Zealand Botanical Society (see 1). The award was donated by Dr Lucy Moore in 1982 to commemorate the outstanding contributions to New Zealand botany by Dr H.H. Allan, first Director of Botany Division, DSIR. It was in the past presented to deserving members of Botany Division staff, but may now be presented to any person who has made outstanding contributions to botany in New Zealand, either in a professional or amateur capacity.

The opportunity was taken to present the award during the launch function for the Flora of New Zealand Volume V: Grasses (see below) for which a large gathering of botanists assembled in the Canterbury Museum.

In his nomination, by the Auckland Botanical Society, three aspects of Hugh's contribution to New Zealand botany were discussed: his scientific publications, his role as a popular educator, and his commitment as an active conservationist. His major publications "Stewart Island Plants", "Wild Plants of Mount Cook National Park" both illustrated by Hugh himself, and his "Small-leaved Shrubs of New Zealand", illustrated by Tim Galloway, are invaluable as identification guides. Hugh's skills in observation and interpretation of botanical phenomena are outstanding, as are his leadership, enthusiasm and personal commitment to the conservation cause.

In presenting the award to Hugh on behalf of the New Zealand botanical community, I commented that he is a non-threatening conscience for us all in our efforts to assist the conservation cause - inducing, not guilt, but inspiration to do better. I thanked him for his contribution to our science, and extended our best wishes for its long and productive continuation.

##### Jessica Beever

###### Reference

(1) Beever J.E. 1999: Allan Mere award. *New Zealand Botanical Society Newsletter* 57: 2-3.

#### ■ From the Secretary/Treasurer

##### Balance sheet for the financial year 01 January – 31 December 1998

INCOME	\$	EXPENDITURE	\$
B/fwd from 1997	1,415.84	Printing Newsletter No 50 (1997)	1,001.25
		Posting Newsletter No 50 (1997)	189.60
1998 Subscriptions	4,499.02	Printing Newsletter No 51 (1998)	877.50
1998 Student Subs	53.00	Posting Newsletter No 51	192.00
Back Issue Sales	580.75	Printing Newsletter No 52	877.50
Donations	428.00	Posting Newsletter No 52	192.80
Advertising	130.00	Printing Newsletter No 53	1,051.88
Lucy Cranwell Donation \$US1,000	1,898.56	Posting Newsletter No 53	280.00
Interest Cheque Account	1.02	ECO Subscription	112.50
Interest Investment Account	51.72	Stationery	210.03
		Bank Fees	0.69
<b>Total Income</b>	<b>\$9,057.91</b>	<b>Total Expenses</b>	<b>\$4,985.75</b>

Excess income over expenditure of \$4,072.16 (represented by cheque account balance of \$669.95 and investment account balance of \$3,402.21) carried forward to 1999. Note that 1998 payments for printing *Newsletter 54* (\$1,005.75) and postage & stationery for *Newsletter 54* (\$312.70) did not come to account until early January 1999 leaving an effective carry forward to 1999 of \$2,753.71.

**Anthony Wright**, Treasurer, New Zealand Botanical Society

16 June 1999

Balance sheet for the financial year 01 January – 31 December 1999

<b>INCOME</b>	<b>\$</b>	<b>EXPENDITURE</b>	<b>\$</b>
B/fwd from 1998	4072.16	Printing Newsletter No. 54 (1998)	1005.75
		Posting Newsletter No. 54 (1998)	312.7
1998 Subscriptions	349	Printing Newsletter No. 55 (1999)	1258.88
1999 Subscriptions	4799	Posting Newsletter No. 55 (1999)	264.7
2000 Subscriptions	228	ECO Subscription	125
Sponsor a Student Sub Donation	322.5	Printing Newsletter No. 56	1258.88
Back Issue Sales	358	Posting Newsletter No. 56	280.1
Interest Cash Drawer Saver	36.18	Posting AGM Notice	89.6
Interest Current Account	18.02	Printing Newsletter No. 57	1258.88
		Posting Newsletter No. 57	271
		Manaaki Whenua Press	34
		General Stationery/Postage	210.75
		Bank Fees	2.5
<b>Total Income</b>	<b>\$10,182.86</b>	<b>Total Expenses</b>	<b>\$6,372.74</b>

Excess income over expenditure of \$3,810.12 (represented by current account balance of \$486.73 and cash drawer saver account balance of \$3,323.39) carried forward to 2000. Note that 1999 payments for printing *Newsletter 58* (\$1,005.75) and postage and stationery for *Newsletter 58* (\$337.68) did not come to account until early January 2000 leaving an effective carry forward to 2000 of \$2,466.69.

**Anthony Wright**, Treasurer, New Zealand Botanical Society

17 March 2000

• **Call for nominations for Allan Mere Award 2000**

Nominations meeting the following conditions are invited for the award of the Allan Mere for the year 2000.

Conditions of Allan Mere Award

1. The Award shall be made annually to a person or persons who have made outstanding contributions to botany in New Zealand, either in a professional or amateur capacity.
2. The award shall be administered by the New Zealand Botanical Society.
3. Nominations for the Award may be made by regional Botanical Societies, or by individuals, to the Secretary of the New Zealand Botanical Society. Nominations shall close on 30th June each year, except in 1999, when nominations will close on 1 November. Nominations shall be signed by a nominator and seconder, and accompanied by two copies of supporting information that must not exceed one A4 page.
4. Selection of the successful nominee/nominees shall be made by the Committee of the New Zealand Botanical Society, normally within three months of the closing date for nominations.
5. If, in the opinion of the Committee, no suitable nomination is received in any particular year, the Committee may refrain from making an award.
6. The Mere shall be formally presented to the recipient on an appropriate occasion by the President of the New Zealand Botanical Society or his/her nominee, but otherwise shall remain in the custody of, and be displayed by, the Herbarium Keeper of CHR at Landcare Research, Lincoln, together with the

book recording awards.

7. The recipient shall receive an appropriately inscribed certificate.

Nominations should be forwarded by 30 June 2000 to :

**Anthony Wright,**  
**Secretary, New Zealand Botanical Society,** c/- Canterbury Museum, Rolleston Avenue, Christchurch  
8001

■ **From the Editor**

*I have initiated a minor change to the format of the Newsletter (although some may consider it major). All articles with references will now have their authors directly following the title. This is in line with many other journals. The bullet system (■) still identifies author and subject changes throughout the Newsletter.*

**The launch of Flora of New Zealand Volume V: Grasses**

To be successful a book launch needs a welcoming ambiance; pleasing food and beverages, served with flair; witty and concise speakers easily heard; a receptive audience; and book sales. All were achieved when the Grasses Flora was launched at the Canterbury Museum on Friday 10<sup>th</sup> March, 2000.

Our host, Anthony Wright, Director of the Museum, introduced a number of speakers. Prof. Phil Garnock-Jones, speaking first, noted that "good things take time", which caused much laughter, and noted that this was the last of the tracheophyte Flora series produced by Botany Division, DSIR, and latterly by Manaaki Whenua Landcare Research. The series treats more than 4000 species in all 5 volumes. He ended with the thought that the 460 species in the Grass Flora were "complexly similar" i.e. "similar in a very difficult way" a statement which I, at least, can readily agree with.

Although the senior author, Dr Elizabeth Edgar, was not able to be present, Dr Henry Connor gave a humorous and erudite speech with some gentle play on latin terms and fulsome praise for Elizabeth - her attention to detail, her concise statements and her sound conclusions. Greg Comfort, of Manaaki Whenua Press, read a message from Elizabeth in which she thanked all her friends of the grass flora and noted how pleased she was that the flora had "ceased to become a 'tragic unfinished saga' handed down by word of mouth" and had instead "a fairytale ending".

Next to speak was Professor Alan Mark, a Trustee of the Miss E.L. Hellaby Indigenous Grasslands Research Trust. The Trust had contributed significantly to production of the Flora and Professor Mark presented a leather-bound volume of the Flora to the two authors, and to Sue Gibb, who had contributed significantly to the book's production.

Dr Andy Pierce, Chief Executive of Manaaki Whenua Landcare Research, gave a short speech thanking the authors and the many contributors to the production of the Flora, on behalf of Landcare. Special mention was made of Dr Colin Webb for his consistent support for the project over many years.

Dr Henry Connor noted in his speech that "the user determines it's (the Flora's) value not the writer". The value of this latest flora should be revealed over the next few months as workers in many different professions begin to use it for grass identification. I look forward to a user review. For those who have not yet sighted the book a review by Alan Mark is on p. 27 (written for the Botanical Society of Otago Newsletter). A copy of the pre-release flyer is on the inside back cover.

**Joy Talbot**

## **Regional Botanical Society News**

■ **Auckland Botanical Society**

**December Meeting**

The Christmas pot-luck dinner at the Auckland Regional Botanic Gardens was enlivened this year by a talk and slide show on Steve Benham's visit to the Namib Desert. Pictures of the bizarre *Welwitschia*



Leader: Derek Gosling 07-312-4454  
Sunday 6 August Mokoia Island, Lake Rotorua  
Leader: Paul Cashmore 07-348-4421 (home), 07-349-7432 (work)  
Sunday 3 September Wairere Falls, Western side of Kaimai Ranges  
Leader: Grant Milligan 07-349-4928 (work/home)  
Sunday 1 October Waipahihi Botanical Reserve/Opepe Bush near Taupo  
Leader: Philip Smith 07-378-5450 (work), 07-378-0571 (home)  
Saturday 4 November Ottawa/Otanewainuku  
Leader: Roger Crabtree 07-332-2326  
Sunday 3 December Pukahunui Valley, Southern Kaingaroa  
Leader: Willie Shaw 07-362-4315

#### Mt Te Aroha Field Trip

A small group of botanists went on the field trip to Mt Te Aroha in beautiful weather in December 1999, the last trip for the millennium. The trip covered vegetation and flora from the semi-coastal zone at the bottom of the track, to stunted silver beech forest near the summit.

**Sarah Beadel**, c/- Wildland Consultants Ltd, P.O. Box 7137, Te Ngae, Rotorua. email: wildland@wave.co.nz

#### ■ Wanganui Museum Botanical Group

[Field trips reports condensed - Ed]

Field Trip to Lamb Hill and Oneida Homestead gardens, 3 October 1999

Ten or so of us met at the historic gates of "Oneida" and proceeded down the long driveway to the beautiful 1870 house surrounded by trees of similar age. Araucarias were very well represented with *Araucaria bidwillii*, *A. heterophylla* and the only known pair of *A. augustifolia* to set fertile seed in New Zealand. We saw large elms and the largest Tasmanian blackwood (*Acacia melanoxylon*) I've ever seen. Above the old railway incline were good examples of messmate (*Eucalyptus obliqua*). Our next stop, "Netherdale", had few remaining old plantings, but there was by the historic home a very beautiful and unusual *E. obliqua*. The trunk diameter was massive with an unusual spiral; relative to the trunk it was not tall but a large dome.

From here we went to "Lamb Hill". This is also an historic home with much history to it. Several hectares to the north, perhaps fenced off from stock for the last 100 years or so, must have once contained many botanical gems. However, it is now largely modified by several dominant trees, suckering elm, sycamore, black wattle and Tasmanian blackwood with the ground covered with such things as *Tradescantia*, in fact impressive areas of just about any weed you could think of. "Lamb Hill" may also have the 'honour' of being the region's introduction point of evergreen buckthorn (*Rhamnus alaternus*), for there were plants of all sizes, small old trees and seedlings everywhere. While many trees had become weedy there were some outstanding examples of ash, oak, *Araucaria* and *Pinus*. The pine had us guessing - FRI later identified it as *P. ponderosa*. Also a little tree of *Buxus balearica* was flowering.

Field Trip to Castlecliff Dunes, 31 October 1999

Fifteen members enjoyed a calm and warm spring day walking along the dunes and cliffs west of the urban area of Castlecliff. Many of us were astonished to see the extent of garden escapes of South African flora, and others probably planted here originally. A number were obviously greatly enjoying the conditions and naturalising. These included colourful *Watsonia* (at least 3 species), *Babiana*, *Freesia*, *Scilla*, *Ixia*, *Tritonia* (2 species), *Gladiolus carneus*, *Lampranthus glaucus*, *Gazania*, *Arctotis*, and large areas of *Senecio glastifolius*, *S. elegans* and *Lupinus arboreus*. Amongst the almost outnumbered natives were mats of *Pimelea arenaria* in all stages of flowering. On the cliff face we discovered possibly another *Pimelea* species, not seen since our group visited the area 20 years ago. Nesting in tiny patches on seepages on the cliff, Colin found *Leptinella dispersa* ssp. *rupestris*, *Epilobium komarovianum*, *Selliera radicans*, *Samolus repens* and the native sowthistle, *Sonchus kirkii*.

Field Trip to Anderson's Bush, Westmere

It is always interesting to revisit an area of fenced bush after an interval of some years. Full of expectation and armed with a plant list from the last visit ten of us set out. As we climbed out of the first gully we



stopped to look at some of the native trees remaining there then continued along the fence line noting that both *Solanum aviculare* and *S. laciniatum* were in flower. Inside the fence the kawakawa had made a dense cover in places resulting in some loss of ground cover plants. We were not lucky enough to re-find *Bulbophyllum tuberculatum* which we'd put on the list on our last visit and could only add *Isolepis reticularis*. The owners had worked well in 1994 eradicating and spraying adventives such as *Clematis vitalba* and *Passiflora mollissima*. Unhappily, neighbouring properties were not so treated and some of these unwanted species are reappearing. There are now 97 native species listed inside the fenced area and 8 outside.

#### Forthcoming Activities: Evening Meetings

First Tuesday each month in the Wanganui Museum's Davis Lecture Theatre; commencing 8 am daylight saving time; 7.30 pm winter time.

4 April: Pat Robinson - Vietnam trip report.

1 May (Monday): Avi Holzapfel (DoC, Hamilton) - biology of *Dactylanthus*

6 June: Astrid Dijkgraaf - conservation in the Netherlands

4 July: Alan & Jean Martin - South Island Tour 1999

1 August: AGM, members' evening

5 September: Workshop on Ranunculaceae - leaders Colin Ogle, Ian & Jocelyn Bell

#### Field Trips

Sunday 5 March: Westmere Lake

Sunday 2 April: Paengaroa Scenic Reserve (one of DoC's six "Mainland Islands")

Leader: Graeme La Cock, 06 345 3630

Saturday 29 April: Moeawatea Gate, inland from Waverley.

Leader: Jim Campbell, 06 345 7272

Sunday 4 June: Wanganui Tree Trust nursery with George Jones

Leader: Doris Hamling, 06 343 6901

Sunday 2 July: Native plantings in Wanganui's school grounds. Mystery car tour.

Leader: Colin Ogle, 06 345 8593

Saturday 29 July: Mt Curl

Leader: Randal Springer, 06 345 0488

#### ■ **Nelson Botanical Society**

##### December Field Trip Report: Inwoods Ridge

An early surprise was a patch of *Pterostylis irwinii*, in the shrubby clearings dominated by *Coprosma propinqua*, *C. "tayloriae"*, *Hebe venustula* and the odd *Olearia cymbifolia* and *Acaena juvenca*. Further on, the clearings included masses of a dark purple-leaved *Thelymitra* and the heavy scent of *Pittosporum anomalum* and pale-barked *Coprosma decurva*. The forest opened out to a long broad spur with scattered *Hebe venustula*, matagouri and tussock grassland containing scattered *Aciphylla colensoi* but few new species. On the steeper slopes, rock patches contained species such as manuka, *Helichrysum parvifolium*, *Hymenophyllum villosum*, *Grammitis poeppigiana* and *G. givenii*. Near where most people turned back, *Raoulia bryoides* was abundant on the rocks. Gradually *Hebe aff rigidula* became common. Finally out into the natural carpet grassland *Ranunculus verticillatus* had just finished flowering and bare areas contained *Neopaxia sessiliflora* and *Raoulia grandiflora* in flower. For those who reached the summit ridge there was a good view and a late return to the vehicles.

##### January Field Trip Report: Mt Campbell

Around the repeater *Coprosma decurva*, *C. ciliata*, *C. "alpina"*, and *C. cheesemanii* provided debate. Other shrubs of interest were *Pimelea oreophila*, *P. prostrata*, *Ozothamnus vauvilliersii* (with very pink flowers, often growing alongside those with the normal cream flowers), *Olearia nummulariifolia*, *Brachyglottis bidwillii*, and lots of *Hebe topiaria*. Herbaceous daisies included *Celmisia dallii*, *C. traversii*, *C. monroi*, *C. incana*, *Lagenifera cuneata* (with its head wider than *L. strangulata*), *Raoulia grandiflora*, *R. glabra*, and *Anaphalioides bellidioides*. Down the road an area of disturbed forest and shrubby regrowth had a wonderful grove of mature *Olearia lacunosa*, mats of *Pratia angulata*, and good clumps of *Ophioglossum coriaceum*, *Lagenifera pinnatifida* and *Pterostylis oliveri*. The weather closed in so we headed home.

#### Anniversary Weekend Camp Report: Matakitaki Lodge

Saturday started overcast but we headed for Mole Saddle via the stream and hut. The first part of the track was fast and easy on an old farm track, first in rough pasture and then in forest. Interesting plants here included *Podocarpus acutifolius*, *Gaultheria macrostigma* (and hybrids). In the red and silver beech forest, pokaka, mistletoe (*Peraxilla colensoi*, on a plant barely a metre high) and a good range of ferns and coprosmas kept us busy. Next, along the banks and riverbed a wide diversity of species was present including *Raoulia tenuicaulis*, *R. hookeri*, *Chionocloa pallens* and *C. flavescens* (straying from the tops) *Coriaria sarmentosa*, *C. arborea* and *C. angustissima* and *Celmisia traversii*. Along the track section alpine species included red tussock, *Wahlenbergia albomarginata*, *Parahebe lyallii*, and *Astelia nervosa*. During lunch the rain intensified so we headed down Jamieson track. In wet areas near the hut *Lagenifera petiolata* and *Schizeilema nitens* were quite common and on the cushion bogs of comb sedge, *Drosera arcturi*, *Donatia novae-zelandiae*, masses of *Aporostylis bifolia* were in flower. Shrubs flashing by included *Coprosma decurva*, *Hebe anomala* and *Kelleria croizatii*. Down the ridge the track was covered by *Gaimardia setacea* and other sedges beneath a low canopy of mountain beech. By the time the main descent began, the rain precluded further botanising other than spotting fallen red mistletoe flowers but not the plant.

Sunday was showery on and off all day with only brief forays near camp to examine the divaricating shrubs but it did allow plenty of time to discuss and sort out the species list from the previous day. Monday proved little better. A brief respite as we packed up allowed a chance to seek out a patch of frost flat shrubland. Here *Meliccytus flexuosus* was abundant and in heavy fruit amongst a tangle of *Corokia cotoneaster*, *Coprosma rigida*, *Olearia virgata*, *Pittosporum anomalum*, *P. divaricatum* and *Raukaua anomalus*. Along the creek we spotted *Ourisia modesta* before rain brought the foray to an end and we headed home.

#### February Field Trip Report: Mt Murchison

The fine day brought out a huge contingent and a good supply of 4-wheel drive vehicles to get us to the summit. Before us lay almost continuous carpet grass. Emerging through this was a profusion of gentians, probably *G. gracilifolia* and a scattering of *Hebe moorei* and other shrubs. In the carpet grass the dull-leaved *Gaultheria depressa* var *depressa* shared space with the glossy-leaved *G. depressa* var *novae-zelandiae*, and *Kelleria multiflora*, *K. laxa* and *K. tessellata*. Other plants of interest included *Celmisia monroi* var *semicordata*, *C. petriei*, *Forstera mackayi* and *Ranunculus verticillatus*. To the east, along the main ridge bluffs contained *Raoulia rubra*, *Hebe ciliolata*, *H. aff. rigidula*, *H. topiaria*, *Coprosma serrulata*, *Brachyglottis bidwillii* and the grassland changed to mid ribbed snow tussock. The wetland areas in the south-east basin contained carpets of comb sedge (*Oreobolus pectinatus*), *Donatia novae-zelandiae* and *Psychrophila novae zelandiae*; *Epilobium macropus* along the streamside; swards of red tussock and mounds of sphagnum. Interesting plants here included *Abrotanella fertilis*, jelly bean plant (*Astelia linearis*) and *Dolichoglottis lyallii*. Finally an intriguing stout hebe sprawling on steep slopes, to date unidentified, and plants of *Pimelea suteri* and *P. oreophila* growing side by side in an apparently intergrading set, left two puzzles to resolve later.

Mar 19	Anakiwa
April 16	Rainey River
Easter Camp	Waihopai
May 15	Pretty Bridge

**Graeme Jane** 136 Cleveland Terr Nelson

#### ■ **Canterbury Botanical Society**

Summer Camp report, Cass Biological Station, 17-21 February 2000

The summer camp was held later this year, to avoid possible conflicts with the celebration of Y2K. By chance, the later time also corresponded with one of the best spells of weather in a wet summer, and, unexpectedly, was wasp-free. Twenty-two people attended, including two from Nelson Botanical Society.

People arrived at mid-day on Thursday and spent the afternoon walking up the slopes of Mt Sugarloaf in showery weather. This provided a good introduction to the plants of the upper Waimakariri Basin, as we

crossed grassland, manuka and mixed scrub, and mountain beech forest.

On Friday we first examined one of the summit bogs at Arthurs pass, where we saw the minute *Mitrasacme novae-zelandiae*, profusely flowering purple *Utricularia monanthos* and bright yellow *Euphrasia cockayneana*, and an unnamed *Nertera* resembling *N. balfouriana*. Then we walked up to Temple basin, noting the striking altitudinal sequence of species, especially in genera such as the snow tussocks and celmisias. Notable plants at the higher levels included *Hectorella caespitosa*, both species of *Dolichoglottis*, *Celmisa bellidifolia* still in flower, and the small alpine hebes *H. macrantha*, *H. lycopodioides* and *H. ciliolata*.

On Saturday the morning mists cleared as we drove down the true left of the Waimakariri valley to the bridge over the Poulter River. Just beyond, on a steep terrace face above the river bed, we explored the scrub, seeing such notable plants as the local endemic *Helichrysum dimorphum* in profusion, the liane *Carmichaelia kirkii*, *Olearia lineata*, as well as various other small-leaved shrubs and lianes, but curiously only one *Coprosma*, the ubiquitous *C. propinqua*. However, on the way back a stop at the Andrews Shelter allowed us to see *Coprosma wallii*, though we couldn't find the *Melicytus flexuosus* which had been reported from there. On Derek Cook's suggestion we spent a profitable hour on islands in the dry bed of the Hawdon River. These support a full range of pioneering *Raoulia* species, as well as *Helichrysum depressum*, *Coprosma atropurpurea* with wine-coloured drupes, and the minute native broom *Carmichaelia uniflora*.

We began Sunday with a walk up through pleasantly cool mountain beech forest to Brken River Ski Basin, and then up to the lunch hut on the ski field, where we tactfully declined offers of paint brushes by a ski club work party. Just above the hut a small scree supports a selection of typical scree plants, i.e. *Notothlaspi australe*, *Ranunculus haastii*, *Stellaria roughii*, *Epilobium pycnostachyum*, *Poa buchananii*, and *Leptinella* (probably *atrata*). Next, a scramble up the ridge showed us lots of the small vegetable sheep *Raoulia mammillaris*, the NZ edelweiss *Leucogenes grandiceps*, and the punative hybrid between them. A commendable number of members reached the summit of Nervous Knob (1820 m), to be rewarded with a panoramic view extending from Banks Peninsula to the Main Divide. *Haastia recurva* and *Hebe epacridea* were the main plants here. At least to a botanist, a negative feature of the day was seeing the spontaneous spread from experimental plantings of conifers and green alder (*Alnus viridis*). These plantings, carried out by the Forest Research Institute in the 1950's and '60's, seemed a good idea at the time, but the legacy is a biological time bomb.

On Monday we were homeward-bound, but still busy. Visits to the McCaskill and Enys Scientific Reserves showed us, on the one hand, limestone endemics (notably *Ranunculus crithmifolius* var. *pauciflorus* known only from this spot), and on the other, a stand of bog pine (*Halocarpus bidwillii*) which is probably a relict from just after the last ice age when it was widely dominant in the South Island. The bog pine is associated with other interesting shrubs including *Pittosporum anomalum*, *Coprosma intertexta* and the whipcord *Hebe armstrongii*. The last is currently known from only two localities, both in the Waimakariri catchment. Until the reserve was created there were only one or two plants surviving here, but DoC has successfully increased their numbers.

The dry bed of Little lake Lyndon supported minute-leaved mats of *Pratia perpusilla*, *Parahebe canescens*, *Leptinella maniototo* and *Galium perpusillum*. The first two have disproportionately large flowers that are white and blue respectively. It is a pity to conclude by having to report that our search for the shingle pea *Montigena* on screes to the east of lake Lyndon was unsuccessful, and that where there had been a large population of *Notothlaspi* on a scree at Porter's Pass during summer 1998-99, we could only find one plant.

Peter Wardle

#### Forthcoming Meetings

Friday 7 April: Sue Scheele, Landcare Research - traditional uses of native plants

Saturday 8 April: Field trip to Awa Awa Rata Reserve (McLennans Bush Rd), Mt Hutt Range.

Friday 5 May: Claire Newell, Landcare Research - plants and vegetation communities of the Southern Appalachian Mts, USA

Saturday 6 May: Field trip to forest remnant at Coopers Creek (Leader: David Rossiter)

Saturday 10 June: AGM followed by a sequel to "Probing the peaty paradise of the Subantarctic Islands"

by Janet Wilmshurst, and lunch.

**Roger Keey**, PO Box 8212, Riccarton, Christchurch email: wrtc@cape.canterbury.ac.nz

#### ■ **Botanical Society of Otago**

The Botanical Society of Otago has reappeared after a long recess

##### Field Trip to Cornish Head (Waikouaiti) on 4<sup>th</sup> December

Fourteen enthusiastic members explored several native plant communities of considerable scientific and conservation interest. These communities grow on Tertiary age sedimentary rocks at three discrete steep sites that face southeast, on the southwest margin of Cornish Point (I43 298075). It is ironic that this natural ecosystem has remained hidden and unrecognised at the site of the earliest organised European settlement in Otago, Matanaka (1840). All the significant sites found are virtual fire and stock refugia due to the difficulty of access and probable moisture constraints. The communities of great interest extend from near sea level to about 30 metres asl on coastal cliffs, and extend about one km along the coastline to Cornish Head. A little further inland, cliff faces extending to 165 m asl also harbour native plant communities of significance. The outer (eastern) coastline has been examined also and is of much less interest in terms of significant native plants and insects. Great care needs to be taken in examining all these communities due to the steepness and instability of the substrate at the sites.

Moist, mainly SE facing slopes are dominated by fragmented silver tussock, *Poa cita*, grassland containing abundant sedges, herbs and low shrubs. A colony of *Corybas macranthus* in full flower was especially impressive. Some of these refugia are extensive while others are less than 20 m wide. This community is significant for a number of reasons, among them:

- The presence of the tall form of *Gingidia montana*, otherwise only known in eastern Otago from Mopanui. At both sites it is rare and localised with less than 30 plants at Mopanui and less than 50 here. It was in flower when we saw it and very conspicuous.
- The biogeographical significance of the presence of this form of *G. montana*. The NE Otago diminutive blue-green form is found as far south as Mt Watkin, which is only 10 km to the NW of Cornish Head. Only two sites on the eastern Otago-Southland have populations of this taller form of the species with the small form present further north to Shag Point and inland to the Horse range and Macraes area.
- A large population, in excess of 130 plants, of an undescribed species of *Pimelea*, usually referred to as *P. urvilleana*. Further north on the coast road south of the Shag River mouth is another large population of this low shrub. These are the largest populations in eastern Otago and the Shag River population supports the only known population of a new species of diurnal moth in the genus *Notoreas*. It is possible that this colourful moth will be found at Cornish Head too as possible feeding damage was found.
- A diverse coastal remnant. This is the only remnant of this particular community known on the eastern Otago coastline. It is therefore a small window on the past vegetation of the Otago Coast.
- The size of the individual refugia and extent of the community appears to be sustainable in terms of the recruitment and stable on terms of threats.
- Aesthetically it adds much further interest to an impressive coastal area.
- The silver tussock supports the widespread tussock butterfly species *Argyrophenga antipodum* as its type locality. It was named in 1845 from specimens collected by Earl.
- Coastal grassland supports a large population of the tiny, diurnal moth *Mnesarchaea paracosma*. The species belongs to an endemic New Zealand moth family and is localised in its distribution.
- The community appears to be very little damaged by introduced animals with possums much reduced in numbers in recent years.

Impressive cliffs further inland support large areas of broadleaf forest with shrubland of *helichrysum lanceolatum*, *Corokia cotoneaster*, *Melicope simplex* and *Coprosma propinqua*. The localised liane *Scandia geniculata* together with *Parsonsia heterophylla* are draped over these shrubs. Yellow mistletoe, *Ileostylus micranthus* grows on the *Coprosma* in places. Another mistletoe, the dwarf *Korthalsella lindsayi* is also present. Drier and more sparsely vegetated slopes to the east support more flax and *Hebe elliptica*

with exotic *Plantago coronopus* prominent. Other herbs of the turfs include *Suaeda novae-zealandiae*, *Samolus repens*, *Senecio carnosulus*, *Cotula dioicia*, *Apium prostratum* and saltgrass, *Puccinellia novae-zealandiae*.

Although this diverse community has survived 150 years of European settlement, we must not be complacent. Changes in land management could threaten these sites and greatly modify them in short time.

Brian Patrick (Otago Museum)

[Lists of inter-tussock species and shrub and tree species was included in the write-up.]

Other articles in Newsletter no. 16 included:

Profile of a botanist: John Scott Thompson and Thompson's lichen collection in OTA - Jennifer Bannister

Book Review of "The Nature Guide to New Zealand Native Orchids" by Ian St George - Allison Knight  
*Peraxilla tetrapetala* (Pikirangi, red beech mistletoe): January's plant profile - Prof. Peter Bannister

**Barbara Anderson**, PO Box 56, Dunedin. Email: [barbjade@es.co.nz](mailto:barbjade@es.co.nz)

<http://www.botany.otago.ac.nz/bsa>

#### **FOR SALE, AT ST ARNAUD, BESIDE NELSON LAKES NATIONAL PARK**

Combination elite Homestay B&B and botanically based Eco-tourism Business - upmarket, profitable, lifestyle income. Much admired, superior wooden home, delightfully situated in natural beech forest, sunny, short walk to Lake Rotoiti. Great place to live. Home has four double bedrooms/four bathrooms, large lounge, and farm style kitchen. Separate extra large double garage and carport, self-contained sleep-out and games room.

Discerning guests, 90% international among them botanical experts and ecologists. Eco-tourism activities mainly alpine botanical, birdlife, geology, natural history/ecology, marvellous 4wd access to alpine. Biodiversity, alpines include *Haastia*, *Cheesemania*, eidelweiss, and many species of gentians, all within 4wd access. Tours all developed, DOC concessionaire. Room for growth of both business entities.

A photo of house and listing of ecotours can be seen in Friars Guide for Discerning Travellers, South Island Section, page 38. These businesses are admirably suited to a botanist/ecologist with teaching abilities and partner.

Colin Clarke, St Arnaud Homestay & Guiding Services Ltd., Postal Agency, St Arnaud, Nelson.

Tel 03 521 1028 or email: [c-clarke@st-arnaud.co.nz](mailto:c-clarke@st-arnaud.co.nz)

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## **NOTES AND REPORTS**

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### **Comment**

#### ■ **Reply to: Was Townson mistaken?**

**E.K. Cameron**, Auckland Museum, Private Bag 92018, Auckland

I read with interest Ian McLellan's comment ("Was Townson mistaken?") in the last *NZBotSoc Newsletter* (no. 58). W. Townson sent around 878 specimens to Thomas Cheeseman, which are held in the Auckland Museum herbarium (AK). This includes an undated Townson specimen of *Adiantum aethiopicum* (AK 135708) from "Buller Valley, at Bluewater, Junction, etc" (label written by Cheeseman). "Bluewater" appears to be a mistake for "Blackwater" (cf. Townson 1906: 429; and there appears to be no "Bluewater" in the Buller Valley). The specimen is of two upper fronds of *A. aethiopicum*. Therefore it appears that



Townson was not mistaken.

#### Reference

Townson, W. 1906: On the vegetation of the Westport District. *Transactions of the New Zealand Institute* 39: 380-433.

## Plant Records

### ■ New Records From Extreme Latitudes in Antarctica

**Vivienne Cassie Cooper**, Landcare Research, Hamilton.

While a great fuss is made of others whose sole aim is to make spectacular treks to the South Pole, scientists who makes treks in order to further the cause of knowledge of organisms inhabiting the harshest places on earth, and risking their lives in the process, receive little or no public recognition.

I refer to the achievements of Dr Paul Broady and his associates, who have collected, recorded and described taxa of algae, fungi and lichens from remote situations as far south as 86 degrees 30 minutes S, and in the vicinity of 147 degrees west. Among the 17 algae described by Broady and Wettstein (1998) was a rare cyanobacterium called *Ammatoidea normanii* W. et G.S. West, surviving "in a thin black mat..... in a fissure that crossed a west-oriented rock-face" (Broady and Ingerfeld 1999). *Ammatoidea* was growing not only with another cyanobacterium (*Gloeocapsa* sp.) and a chlorophyte (*Stichococcus bacillaris*. Naegeli), but also with epilithic lichens - the southernmost record in the world for these hardy organisms.

Surely the collectors of these hard-won records deserve some public recognition, at least by their fellow botanists, if not by the general non-caring, uninformed public?

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Broady, P.A. & Wettstein, R. 1998: Algae, lichens and fungi from the La Gorce Mountains, Antarctica. *Antarctic Science* 10: 376-385.

Broady, P.A. & Ingerfeld, M. 1999: *Ammatoidea normanii* (Cyanobacteria, Homoeotrichaceae) from the La Gorce Mountains, Antarctica. *Algalogical Studies* 95: 1-13 (= *Archiv fuer Hydrobiologie* Supplement 130).

### ■ *Uncinia strictissima*, a rare New Zealand sedge: its status in Southland and Otago.

**Neill Simpson**, P O Box 478, Queenstown.

#### Introduction

*Uncinia strictissima* is a distinctive, endemic, rush-like sedge which appears to be rare in New Zealand. In the last 100 years it has been collected from the central North Island south to the Auckland Islands, but most of the records are old with few recent collections.

#### Previous records

The type locality is Waitahuna, Tuapeka County, Otago where it was first collected by Petrie in 1886 (Hamlin 1959). In the same year Petrie collected it from Blueskin Bay and Waitati Bay, both on the coast north of Dunedin, the only other records for this plant in Otago, although The Flora of New Zealand Vol. II (Moore & Edgar 1970) mentions Roxburgh and Lawrence in its distribution notes. Cheeseman's Manual of the New Zealand Flora (1925) gives its distribution as "Probably not uncommon from the Clarence Valley southwards, ascending to 3000ft." It was collected from Auckland Islands by Chapman in 1890 then in 1919/20, in the Rangitata Gorge (swamp c. 300 m), Mt. Peel (damp ground on margin of swamp) both by Allan and in the Waitaki by Kirk. In the same period it was collected from the Hanmer plains (Wall) and later from Burnt Hill, North Canterbury (B. Molloy). In 1961 and again in 1966 *Uncinia strictissima* was collected from Mt. Robert, Lake Rotoiti where it has recently been seen again (Shannel Courtney, pers. comm.). More recent South Island collections are from Otaio, South Canterbury in 1984 (P. Wardle) and 1988 from above Kingston (Druce et. al.). Hugh Wilson collected it from two sites on Stewart Island in 1978/79 where he described it as rare (Wilson 1982).

Petrie also found it in the North Island at Turangariri, Rangitikei River. Four other records exist from the Central North Island, from Ngamatea Plateau and Ngamatea swamp, Hautapu River and Te Porere Redoubt, near Tongariro National Park.

### Present Survey

During the last decade, Brian Rance has recorded a few plants from several wide spread areas in Southland – from Tapanui and near Gore in the east, westwards to the Waiau Valley and Eglinton Valley. *Uncinia strictissima* was previously listed in the Threatened and Local Plants List (Cameron et al. 1995) as insufficiently known, so a survey of known and likely sites in Southland and Otago was undertaken during 1999 to check its current distribution and demography, to typify its habitat and likely threats to its survival. This survey confirms its present status in the revised Threatened and uncommon plants of New Zealand (de Lange et al. 1999) where *Uncinia strictissima* is listed as Threatened/vulnerable, with probably less than 800 plants in mainly small, local populations, primarily in grazed pasture and marginal land in Southland. Extensive searching of original sites in Otago has failed to find *Uncinia strictissima*, but two plants have been found recently just south of Millers Flat (Roxburgh area) on a damp hillslope with *Olearia lineata* and other shrubs.

### Description

*Uncinia strictissima* forms dense to somewhat open, generally erect, rush-like dark green to brown-green tussocks. Older (large) clumps tend to spread out at the top and do not appear so strict. Adult plants vary in height from 30-55 cm and are generally shorter than the *Juncus* spp. with which it is often associated. The glossy dark green or yellow-green, rounded culms are distinctly rush-like with smooth culms when old. Young culms tend to be trigonous and scabrid in the upper part, older culms terete to sub-terete. Leaves are few, narrow and generally shorter than the culms, although sometimes almost equal to the culms. The narrow utricles are glabrous with persistent glumes, hardly spreading when ripe, the spikes 4-10 cm long and subtended by a leafy bract 1.5 to twice as long as the spike which, at least late in the season, readily distinguishes it from a rush, the bract drying and becoming membranous and light brown in colour giving it a different appearance to the often adjacent *Juncus* spp. The pale utricule is usually longer than the glume, tapering at both ends and faintly striated.

### Present Habitat (Table 1)

*Uncinia strictissima* tends to favour damp grassland or open shrubland of alluvial terraces, rolling hill country and foot slopes where the fertility is high. It is probably a basicole. Moderate to high rainfall may also be a prerequisite. At Greenvale, just south of Kingston, about 80 plants grow between the Allen Creek and the adjacent footslopes on alluvium with *Juncus gregiflorus* and exotic grasses including *Dactylis glomeratus*, *Agrostis capillaris* and *Holcus lanatus*, or up slope on small seepage and slump zones with *Coprosma* species, *Carmichaelia petriei*, matagouri and regenerating broadleaf trees. Mixed beech forest (*Nothofagus fusca*, *N. solandri*) is just around the corner in the Glen Allen Scenic Reserve. At Clifden, two plants grow at the top of a limestone outcrop in open grassland with some *Poa cita*. *Olearia fragrantissima* is nearby and remnant podocarp forest below. The largest population seen is in the Eglinton Valley, bordering red beech (*Nothofagus fusca*) forest and the Fiordland National Park. Here more than 400 plants are found. A small number grow on the south side of the highway on a wet, grassy terrace around the edge of a small swamp with *Carex secta* and *Juncus* spp. Across the road, the larger population extends from the road edge up a wet hillslope of grassland and shrubs with patches of beech forest and well pugged by cattle. The plants are found along the slope for about 1 km, in rough pasture and below regenerating shrubland and an extensive limestone bluff system. The six Waiau Valley sites are marginal farmland with regenerating shrubland from which

Site	No. of plants	Young present
Croydon Bush Scenic Reserve	14	
Stoney Creek	42	*
Clifden	2	
Mangapiri	9	
McLees – area 1	33	
area 2	12 +	
Blackmount	36	
Diggers ridge	9	
Redcliff Creek	1	
Eglinton Valley	400 +	*
Greenvale P L/Glen Allen Scenic Reserve	79	
Te Kere Haka Scenic Reserve	1 + ?	
Millers Flat	2 + ?	

Table 1. Sites found, number of *Uncinia strictissima* recorded at each site and where young plants were noted.

the original podocarp forest has been cleared. All are damp footslopes with rushes and scattered shrubs, mainly *Coprosma propinqua*. Two sites on the eastern Hokonui Hills differ from other sites, both being at the top or near the top of a hill. At Stoney Creek, *Uncinia strictissima* is found in grazed grassland amongst open manuka with *Poa cita*, *Juncus* species, *Polystichum vestitum* and *Uncinia* aff. *affinis*. This was the only site where a plant was found growing directly under the shrub canopy rather than outside the cover of other plants. The adjoining Croydon Bush Scenic Reserve is an area of tall podocarp forest with *Olearia hectorii* along one edge. *Uncinia strictissima* occupies the top of a grassy knob from which the podocarp forest has been removed by fire. Here the native shrubland and forest is gradually returning with gorse, bracken, *Aciphylla glaucescens*, *Uncinia* aff. *affinis* and tall grass, mainly *Dactylis glomeratus* with patches of dense *Agrostis capillaris*. This was the driest site seen.

Few young plants were found and no seedlings recognised. Young plants were only seen where the competition from exotic grasses was reduced by shading, such as along the edge of red beech forest in the Eglinton Valley and at the edge of dense manuka shrubland at Stoney Creek.

#### Discussion

At virtually all sites, *Uncinia strictissima* is associated with *Juncus* species, exotic grassland and open shrubland, although it is not necessarily within the shrubland. It is also occasionally associated with poorly drained ground where *Carex secta* and *Carex coriacea* grow but it appears to stay on the drier fringes in these instances. Most areas are grazed by both sheep and cattle and in closely grazed grassland looking for tall clumps of grass (cocksfoot) was one way to find the *Uncinia* as it is not preferentially grazed and protects the cocksfoot and brown top from browsing. Seed may be spread by stock. Plants once established appear to be able to compete with grasses and continue to enlarge. They may be quite long lived. Farm development appears to be the most likely cause to the decline of *Uncinia strictissima* and competition from exotic grasses appears to be the main inhibiting factor to seedling establishment. Pieces taken from the wild grow readily in the garden. The habitat of *Uncinia strictissima* in Otago and Southland is one that is likely to be overlooked by botanists as proving unrewarding.

#### Original habitat

*Uncinia strictissima* appears to have been a plant of forest edges on damp ground where it may have been found on alluvial stream terraces where the cover was not too dense, as well as on flood plains in association with matagouri and *Coprosma propinqua* or manuka. It may also have occupied slump faces and seepage areas in forest or shrubland, associated with rushes and other sedges. Perhaps less likely places are forest openings caused by poor drainage where, providing the fertility was sufficient, it would have been confined to the drier edges, perhaps under open manuka. Open disturbed sites within shrubland on damp, fertile substrate is another likely habitat. A few plants occur in remnant red tussock along a stream edge at Blackmount.

As mentioned in Cheeseman (1925), this plant was probably not uncommon in the early part of this century when land clearance was taking place and disturbed, damp, shrubby sites likely to be plentiful.

#### List of species associated with *Uncinia strictissima*

<i>Aciphylla glaucescens</i>	<i>Coprosma virescens</i>	<i>Kunzea ericoides</i>
<i>Agrostis capillaris</i>	<i>Corokia cotoneaster</i>	<i>Leptospermum scoparium</i>
<i>Anthoxanthum odoratum</i>	<i>Crepis capillaris</i>	<i>Lolium perenne</i>
<i>Carex coriacea</i>	<i>Cynosurus cristatus</i>	<i>Lotus pedunculatus</i>
<i>Carex dissita</i>	<i>Dactylis glomerata</i>	<i>Melicytus</i> sp. aff. <i>alpina</i>
<i>Carex secta</i>	<i>Digitalis purpurea</i>	<i>Olearia bullata</i>
<i>Carex testacea</i>	<i>Discaria toumatou</i>	<i>Olearia lineata</i>
<i>Carmichaelia petriei</i>	<i>Festuca novae-zelandiae</i>	<i>Oreomyrrhis ramosa</i>
<i>Cerastium fontanum</i>	<i>Gonocarpus aggregatus</i>	<i>Phormium cookianum</i>
<i>Cirsium arvense</i>	<i>Helichrysum filicaule</i>	<i>Poa cita</i>
<i>Cirsium vulgare</i>	<i>Holcus lanatus</i>	<i>Polystichum vestitum</i>
<i>Coprosma decurva</i>	<i>Hydrocotyle novae-zelandiae</i>	<i>Pteridium esculentum</i>
<i>Coprosma propinqua</i>	<i>Hydrocotyle moschata</i>	<i>Trifolium repens</i>
<i>Coprosma rigida</i>	<i>Hypochaeris radicata</i>	<i>Uncinia</i> aff. <i>affinis</i>
<i>Coprosma rugosa</i>	<i>Juncus effusus</i>	
<i>Coprosma</i> sp. aff. <i>parviflora</i>	<i>Juncus gregiflorus</i>	

## Acknowledgements

I thank Brian Rance, Department of Conservation (DoC), Invercargill, for useful comment and field assistance, and Brian and John Barkla, DoC, Dunedin, for making this interesting survey possible. Thanks to Wendy Nelson, Te Papa for copies of records of WELT specimens and to Doug Rogan and Ewen Cameron, Auckland Museum for records of AK specimens.

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## ■ The naturalisation of *Banksia integrifolia* in New Zealand; time for action!

E.K. Cameron, Auckland Museum, Private Bag 92018, Auckland

## Introduction

Coast banksia (*Banksia integrifolia*), native to coastal south-east Australia (Queensland to Victoria, Tasmania) from sea level to > 1,000 m asl, is predominantly autumn- and winter- flowering and grows to 5-25 m tall (Taylor & Hopper 1988, Harden 1991). In Australia three varieties/subspecies of coast banksia are recognised on the basis of leaf size, shape and arrangement on the stem. Intermediates appear to exist and no attempt is made here to recognise varieties or subspecies.

In New Zealand it has been cultivated for a long time, but the earliest record I could find was in a 1930 nursery catalogue (Hay & Son 1930) advertised for 2/6 pence per plant. The largest cultivated tree seen was at 613 Mt Albert Road in Auckland. It measured 110 cm diameter at 1 m, c.15 m tall x 10 m wide and was planted c.1950 (F.V. Moore pers. comm., 1999). As in Australia, the main flowering period in New Zealand is early autumn to November, with occasional trees flowering in any month of the year. The seedlings have coarsely-toothed leaves, unlike the smooth-margined adult leaves. In the Wollongong area in Australia coast banksia spreads by root suckering (Rob Whelan pers. comm., 1999). Root suckering appears to be unusual in New Zealand, but after a tree was cut down on Waikato University campus in 1992 it sent up many root suckers (P.J. de Lange pers. comm.). The reasons that it is a popular tree to cultivate, i.e., fast growing and extremely hardy, make it a potential weed.

## Wild records

The first wild seedling collected was by a cultivated tree in Rotorua in 1989 (AK 207280), and the first published wild record was by Duguid (1990) from northern Horowhenua (SW Foxton): "a number of well-grown shrubs have established from planted trees on the margin of Waitarere pine forest." Coast banksia was treated as fully naturalised in New Zealand by 1993 based on wild plants from seven areas (Bay of Islands to Horowhenua District) (Webb et al. 1995).

The following chronologically ordered 42 wild records are based on herbarium specimens (at AK, AKU, CHR, NZFRI, WAIK and WELT), personal communications, and one published record:

**1989:** Rotorua (habitat: gravel pile) (see Appendix for expanded voucher records); **1990:** Karikari (roadside scrub), near Medlands (roadside bank), south-west Foxton (pine forest margin); **1991:** Claris (roadside scrub on sand), east Hamilton (roadside ditch), Ohaupo (roadside), Tauranga Harbour (sandspit), Kawhia (roadside), north-east Bulls (roadside ditch), north Foxton (macrocarpa stumps), south Foxton (road cutting), Te Harakiki (unconsolidated dune) and Linden (cliff scrub); **1992:** Te Haumi (roadside bank), Whangapoua (coastal sandy spit), Mokau (roadside bank), north Rapanui (river cliffs), Urenui (beach cliffs) and Santoft, west Bulls (coastal sand flat, roadside); **1993:** Mokohinau Is (abandoned garden), Waikawau (sand dunes), Greenhithe (roadside scrub), Rotongata (roadside bank) and Waitara (roadside bank); **1995:** Coatsville (roadside) and south Waihi Beach (sand dunes); **1996:** Mangawhai

(gumland scrub) and Diamond Harbour (garden context). **1997:** Queen Charlotte Sound (low scrub); **1998:** Ohakune (roadside scrub) and Newmarket (bark garden); **1999:** Henderson Bay (roadside bank), Pukenui (coastal cliffs) and south Pukenui (open cliff-top), Cable Bay (clay road bank), Takou Bay (roadside scrub), Tutukaka (clay roadbank), west Omapere (roadside kikuyu), Waipoua Information Centre (garden) and Waipu (roadside clay bank); **2000:** Ahipara (roadside scrub).

#### Pollination

Why does a species that has been cultivated in New Zealand since at least 1930, but probably much earlier, suddenly start to naturalise 59 years later almost simultaneously throughout the North Island? Many species appear to have an acclimatisation period (lag phase) before they begin to naturalise in a new country. Based on a study in Germany, the lag phase for woody species takes an average of 170 years for trees and 131 years for shrubs (Kowarik 1995). Rogan (1997) documented that *Fatsia japonica* had been cultivated in New Zealand since at least 1867 and that the first wild record was 109 years later.

An alternative possibility to "acclimatisation" is that coast banksia required a pollinator that has only recently arrived in New Zealand. Taylor & Hopper (1988: 124) list 275 possible pollinator records for coast banksia in Australia: birds (74.2%), moths/butterflies (3.9%), bees/wasps/ants (19.5%), beetles (1.2%) and mammals (1.2%). In New Zealand, honeyeaters (tui and bellbird) and kaka visit coast banksia and probably several other bird species as well. But these birds would also have visited the flowers before 1989.

On the other hand, a narrow beetle 3-4 mm long was present in copious numbers in most coast banksia flower heads examined during 1999 (see Fig. 1, p. 17). The first collection of this beetle appears to be in 1995 between Waihi Beach and Bowentown (W. Stahel, CHR 505699). Flowering material from these naturalised plants was sent to Landcare Research at Lincoln (CHR) where Melanie Newfield (pers. comm.), when unwrapping the specimen, noticed the beetles. Jan Klimnafzewski tentatively identified them as the Australian rove beetle (family Staphylinidae), possibly *Austrolophrum cribriceps* (Fauvel). This identification has recently been confirmed by Margret Theyer and Richard Leschen from the 1999 beetle collections. Margret Theyer noted that this beetle seems to be pretty closely associated with banksia material in Australia but not exclusively so (her Australian records for this species also include: *Xanthorrhoea* flowers, *Acacia*, a gilled fungus, ant nest under eucalyptus bark, *Eugenia* litter and smoke bush flower). So far these beetles in New Zealand are only known as far south as Rotorua, but to date there have been only 3 coast banksia flower heads searched for this beetle further south (see Fig. 1, p 17). In fact only 4 flower heads examined during 1999 lacked the rove beetles. Rob Whelan (pers. comm., 1999) suggested to me that coast banksia is unlikely to be pollinated by a specialist beetle because he thought the flowers had some sort of stimulated opening, i.e., the perianth segments stay 'closed' even after the flowers are mature, and the 'ripe' flowers spring open when something largish wanders over the inflorescence (evidence suggested honeybees were not heavy enough or strong enough to stimulate this flower to open). Even so, the apparent recent widespread distribution of *Austrolophrum cribriceps* in the northern half of the North Island, strongly corresponding (where searched for) to the naturalised coast banksia localities, suggests that it would be worth investigating to see if these rove beetles are actually pollinating coast banksia in New Zealand.



Figure 2. Several wild coast banksia plants up to 1.8 m tall and already fruiting on the Waikawau Bay dunes NE Coromandel. The seed has been blown across from a shelter belt some 300 m to the west. October 1997.

#### Discussion

In a period of 10 years, the widespread cultivated coast banksia has naturalised rapidly and widely in the North Island and at least at two sites in the South Island. Several of the wild populations already cover quite large areas. The seed is winged and wind dispersed, but most seedlings are within 100 m of an



adult plant (note - the wildlings on the Waikawau dunes (Fig. 2) were c.300 m east of adult plants). The seedlings grow rapidly and seem capable of flowering by 3-5 years old. Because they mature rapidly this species can spread and build up quickly in suitable areas. Coast banksia appears to be self fertile because a single cultivated specimen in the remote abandoned lighthouse garden on Burgess Island, Mokohinau Islands, January 1984 produced seedlings which were collected in 1992 and 1993 (AK 226968, 218538). It is very hardy, tolerant of salt spray and capable of growing in a wide range of open habitats, from sea level to at least 620 m asl (Ohakune). The main habitats are sand dunes, cliffs and open (shrubby) roadside banks. Many species of birds and insects visit the flowers in New Zealand but the actual pollinator(s) are only suspected and not definitely known. Australian information would support that the pollinators are unspecific and largish, but rove beetles (*Austrolophrum cribriceps*) may be pollinating it in New Zealand.

#### Recommendations

Coast banksia should be removed from open natural areas, such as sand dunes, cliffs and banks (if cut down beware that it may root sucker). The rapid rate at which this species is naturalising and the types of habitats where it is establishing is of concern. There is already enough evidence that it should be banned from sale immediately. Alternative species, such as hardy natives or different banksia species, should be recommended as replacements.

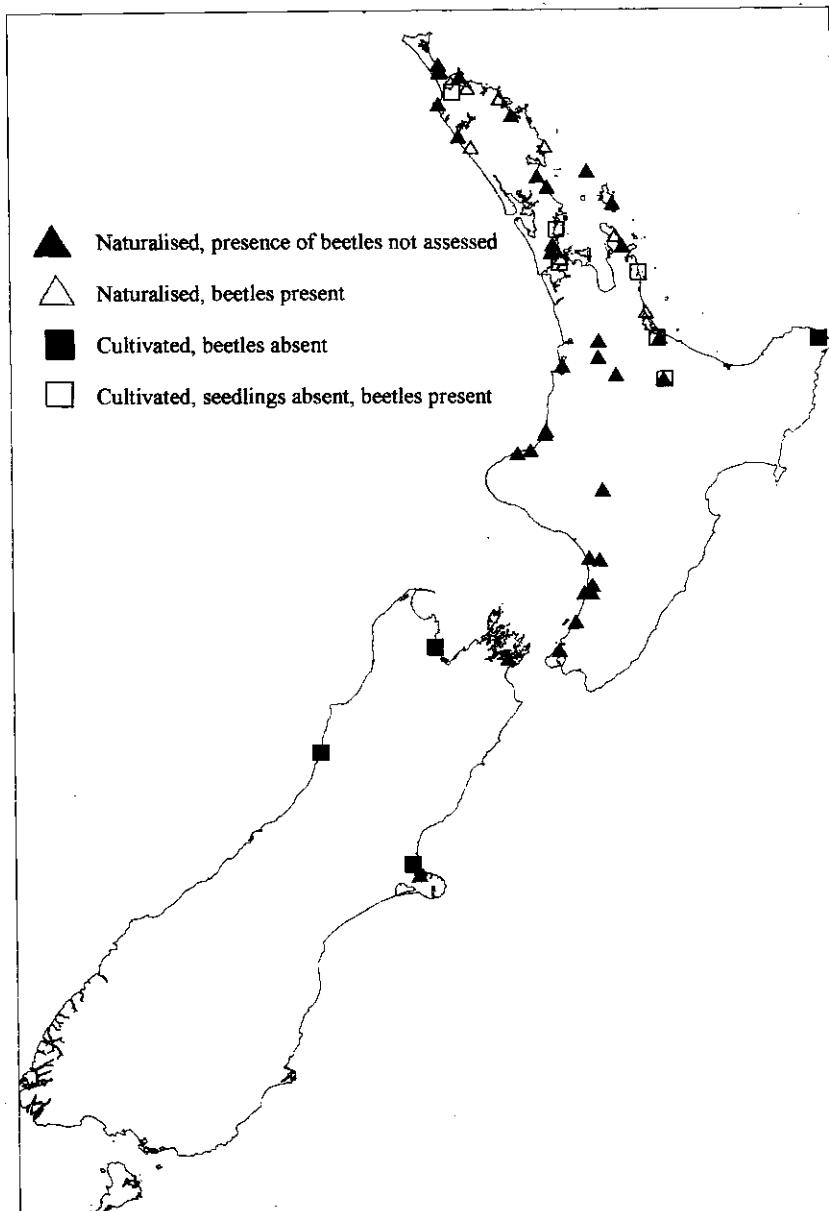


Figure 1. Distribution of all wild coast banksia and rove beetle records.

## Acknowledgements

Peter de Lange, John Early, Lisa Forester, Lance Goffart-Hall, Phil Knightsbridge, Mike McGlynn, Fleur Maseyk, Elizabeth Miller, Melanie Newfield and Bill Sykes for responding to my 1999 request to send me flowering material of coast banksia, seedlings or comments; Peter de Lange for collecting the largest number of wild seedlings; Rob Whelan, Alex George and Bob Makinson supplying comments or references on pollination of banksia in Australia; Jan Klimnafzewski, Richard Leschen and Margret Theyer for identifying the rove beetle; John Early and Rosemary Gilbert for checking the banksia flower heads, vouchering the rove beetles and arranging for their identification; keepers of AKU, CHR, NZFRI, WAIK and WELT herbaria for label information of banksia herbarium specimens; and Doug Rogan for producing Figure 1.

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**Appendix.** Source of all wild coast banksia and beetle records (where there are several herbarium records from the same locality only the first record is cited). All 52 records are plotted in Figure 1 under the headings below. Note - most of the rove beetles collected in 1999 are vouchered in the Entomology Department collection, Auckland Museum.

Naturalised records (arranged north to south), presence of beetles not assessed.

Henderson Bay 34° 45' (*E.K. Cameron* 9712, AK 239431) Jul 1999; Pukenui 34° 49' (*E.K. Cameron* 9695, AK 239433) Jul 1999; south Pukenui 34° 50' (*E.K. Cameron* 9710, AK 239432) Jul 1999; Karikari 34° 53' (*J. Fox*, WELT 81571A&B) Nov 1990; Ahipara 35° 11' (*P.J. de Lange*, AK 245553) Jan 2000; Te Haumi, Bay of Is 35° 18' (*P.J. de Lange* 1761, AK 212340, dup CHR) Oct 1992; west Omapere 35° 32' (*F. Maseyk*, AK 244235) Jan 2000; Burgess Id, Mokohinau Is 35° 54' (*P.J. de Lange* 268, AK 226968, dup CHR) Nov 1993; Waipu 35° 58' (*L.J. Forester* pers. comm.) Aug 1999; Mangawhai 36° 05' (*L.J. Forester* pers. comm.) Sep 1996; Claris, Great Barrier Id 36° 15' (*P.J. Garnock-Jones* 2079 CHR 470168) Mar 1991; near Medlands, Great Barrier Id 36° 16' (*P.J. de Lange* 166, WAIK 12121, dup CHR) Feb 1990; Coatsville 36° 43' (*P.J. de Lange*, AK 224007, dup CHR) Oct 1995; Whangapoua 36° 43' (*P.J. de Lange* 1712, AK 210973, dup CHR) Sep 1992; Greenhithe 36° 48' (*P.J. de Lange* 2246, AK 224344, dups AD & CHR) Oct 1993; Motuopuhi Id, Tauranga 37° 43' (*P.J. de Lange* 937, AK 203596) Aug 1991; east Hamilton 37° 47' (*P.J. de Lange* 932, AK 203341, dup CHR) Aug 1991; south Ohaupo 37° 57' (*P.J. de Lange* 939, CHR 473617) Aug 1991; Kawhia 38° 03' (*P.J. de Lange* 604A, AK 202108) Feb 1991; Rotongata 38° 08' (*P.J. de Lange* 2270, AK 224335, dup CHR) Dec 1993; Rotorua 38° 10' (*E.K. Cameron* 5600, AK 207280, dup NZFRI) Aug 1989; Mokau 38° 46' (*P.J. de Lange* 1335, AK 208515 dup WELT) May 1992; Rapanui 38° 48' (*P.J. de Lange* 1332, AK 208519) May 1992; Urenui 38° 59' (*P.J. de Lange* 1328, AK 208530) Apr 1992; Waitara 39° 01' (*P.J. de Lange* 2128, AK 231076, dup CHR) Aug 1993; Ohakune 39° 24' (*E.K. Cameron* 9402, AK 238017) Oct 1998; Santoft, west Bulls 40° 09' (*C.C. Ogle* 2206, CHR 476929) Jan 1992; north-east Bulls 40° 10' (*P.J. de Lange* 899, AK 203339, dup CHR) Jul 1991; north Foxton 40° 27' (*P.J. de Lange* 921, AK 203343, dup CHR) Jul 1991; south-west Foxton 40° 32' (*Duguid* 1990) Mar 1990; south Foxton 40° 32' (*P.J. de Lange* 940, AK 203345, dup CHR) Aug 1991; Te Harakiki 40° 51' (*P.J. de Lange* 942, CHR 473620) Aug 1991; Linden 41° 10' (*P.J. de Lange* 943, AK 204233 dup CHR) Aug 1991; Queen Charlotte Sound 41° 16' (*P.J. de Lange* 3224, AK 232686) Feb 1997; Diamond Harbour 43° 38' (*W.R. Sykes* pers. comm.; cf. CHR 513059) May 1996. [total = 35 records]

2. Naturalised records (arranged north to south), beetles present.

Cable Bay 35° 00' (*F.J. Forester*, AK 240949, 241639) Sep 1999; Takou Bay 35° 07' (*M.J. McGlynn*, AK 240949) Sep 1999; Tutukaka 35° 38' (*L.J. Forester*, AK 241639, dup NSW) Sep 1999; Waipoua Forest HQ 35° 39' (*F. Maseyk*, AK 242371) Sep 1999; Waikawau, north-east Coromandel 36° 36' (*E.K. Cameron* 7327, AK 233375) Sep 1993 (beetles actually collected Jan 2000); Newmarket, Auckland 36° 52' (*P.J. de Lange* 3456, AK 235046) Feb 1998 (beetles actually collected Jul 1999); south Waihi Beach 37° 26' (*W. Stahel*, CHR 505699A&B) Sep 1995. [total = 7 records]

3. Cultivated trees (arranged north to south), beetles absent.

Te Araroa 37° 39' (*E.K. Cameron*) Sep 1999; Motueka 41° 08' (*M. Newfield*) Aug 1999; Barrytown Flats 42° 16' (*P. Knightsbridge*) Aug 1999; St Albans, Christchurch 43° 31' (*W.R. Sykes*) Aug 1999. [total = 4 records]

4. Cultivated trees (arranged north to south), no seedlings present, beetles present.

By Awanui 35° 03' (*L.J. Forester*) Aug 1999; Waiwera 36° 33' (*E.K. Cameron*) Aug 1999; Mt Albert, Auckland 36° 55' (*E.K. Cameron* 9745, AK 239646-7) Jul 1999; Tairua 37° 00' (*J. Early*) Nov 1999; Tauranga 37° 43' (*E.K. Cameron*) Aug 1999; Rotorua 38° 10' (*E. Miller*) Aug 1999. [total = 6 records]

## Herbarium Report

### ■ Otago Herbarium (OTA)

The OTA herbarium is currently one of the more active New Zealand University based Herbaria and last year processed 2703 accessions. This included 1676 mosses and liverworts (mostly old specimens that hadn't been numbered), 890 lichens, 130 angiosperms (mostly Australian species in New Zealand genera), 5 algae, and 2 gymnosperms.

At present the Herbarium curators are Jennifer Bannister and Janice Lord. "Friends of the OTA" has been established to allow interested botanists not associated with the Botany Department greater involvement with the herbarium on a voluntary basis. At present there are 12 members of "Friends of the OTA" and Professor G.T.S. Baylis is the patron.

Current active research projects using the Herbarium include work on the New Zealand lichen flora by David Galloway, Jennifer Bannister and Alison Knight; the New Zealand bryophyte flora by Ray Tangney; the taxonomy of *Pachymenia* (Rhodophyta), Lisa Russell: and evolution in *Coprosma*, Adrienne Markey.

**Botanical Society of Otago Newsletter No. 16, January 2000** (see Regional Botanical Society News).

## Note

### ■ Native mistletoe materials available

Free colour posters and brochures on New Zealand beech mistletoes are now available. Both materials describe what mistletoes are, why they are important, and why they are threatened. The writing is not technical and is meant to encourage interest among the general public in native plant species. If you would like copies of the poster or brochure, please contact Laura Sessions at: PAMS Department, University of Canterbury, Private Bag 4800, Christchurch; phone: 366-7001 ext 7645, fax: 364-2083, e-mail: l.sessions@botn.canterbury.ac.nz.

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### ■ Tribute to Dr Margot Forde, botanist, botanical explorer and pioneer woman botanist in agriculture.

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

Dr Margot Bernice Forde (née Ashwin, 1935-1992), like Dr Joan Radcliffe (1938-1997) another pioneer woman botanist in agriculture, trained as a botanist though her most notable contribution was to agriculture. A brief obituary to Margot was published in the Newsletter in 1992 (2).

Margot was a leader in the collection and storage of temperate pasture species collected world-wide. This project provides for the conservation of germplasm of species likely to be useful for pasture plant improvement, by the introduction of new species as pasture plants, by plant breeding, or perhaps by the use of the introductions in genetic engineering programmes. Margot was curator of the New Zealand Forage Germplasm Centre at the former DSIR's Grasslands Division at Palmerston North (now AgResearch Grasslands). After her death in 1992, the Centre was renamed The Margot Forde Forage Germplasm Centre of New Zealand in her honour.

Margot was born in Wellington, the daughter of Sir Bernard and Lady Ashwin. Sir Bernard (1896-1975) was Secretary to the Treasury for the duration of World War II and chief financial and economic adviser to the Government.

Regarding Margot's schooling, her husband Dr Bernard J. Forde (b.1935) writes (4), "Margot attended St Catherine's Convent School for her Primary education though her family were Presbyterian. The Nuns concentrated on English and particularly grammar, arithmetic and singing. Margot corresponded with some of the Nuns who were still alive until shortly before her death." Margot then attended Queen Margaret College in Wellington, leaving at the end of the 6th Form at age 16½. Margot attended Victoria University College and graduated B.Sc. (1955) and M.Sc. (1958) with First Class Honours in botany. Her thesis was entitled "A study of variation in *Haloragis erecta* with notes on allied species" and the practical work involved considerable travel and tramping collecting *Haloragis erecta*. Her M.Sc. research was later published in the *N.Z. Journal of Botany* (5) and was completed while she was on the staff of the former DSIR's Botany Division in Wellington. Bernard Forde comments on Margot's research for her M.Sc. (4),

"Because the then Director of Botany Division was not keen on women doing masterates, she was only given Friday and Monday afternoons to attend the honours lectures (as the sole student) and do thesis work. Consequently there was considerable burning of the midnight oil and a sizeable part of the weekend was devoted to plant raising and observation." Margot was an outstanding student at Victoria University College, a Senior Scholar, and was awarded the Lady Stout Bursary for the outstanding woman student for her year of graduation, and a University of New Zealand Postgraduate Travelling Scholarship -the highest value scholarship available to a New Zealand woman at that time.

Margot was appointed in 1954 to DSIR's Botany Division and worked at the Division until 1959. She was an assistant to Dr H.H. Allan (1882-1957) and Dr Lucy Moore (1906-1987) in the preparation of Volume I of the "Flora of New Zealand" (1) and prepared the sections in the Flora on *Euphrasia*, *Hebe* (whipcord species), *Parahebe* and *Pygmea*. In the acknowledgements to Volume I, Dr Lucy Moore records the assistance provided by Margot, "...who prepared most of the final typescript and index, verified references and in many other ways maintained a keen and constant vigilance over the text during four critical years."

Margot married Bernard J. Forde in 1959 and the couple left for California - Margot as a Fulbright Scholar - where both completed Ph.D. degrees at the University of California, Davis. Margot and her husband are included in my compilation of notable husband and wife researchers in science in New Zealand (to be published in "New Zealand Women in Science"). Both graduated from Victoria University College with M.Sc. First Class Honours degrees in botany, both graduated Ph.D. from the University of California, and both were employed in the former DSIR. The Fordes have three children, Timothy, Rachel and Lucy.

Margot's viewpoint on women in science and in other professional activities and her career in DSIR was related by her husband (4), "Margot could be extremely critical of anyone who wished to appoint her to some position or perform some task as a 'token' woman but she tried hard to encourage women not only into science but to fulfill their potential generally... Although she achieved considerable success in science, Margot said that she always felt that she had to work harder as a woman to achieve recognition for her work than would have a male scientist. With one possible exception... I never saw evidence that she was discriminated against as a woman. The sheer power of her intellect seemed to preclude that." Sir Brian Elwood (b.1933) in a eulogy at Margot's funeral (3) said,

"She preceded the era where women publically strived for achievement. Margot achieved for what she was, for who she was."

The Forde family have an interesting link with New Zealand's foremost botanist, Dr Leonard Cockayne (1855-1934) when he lived in Colombo Street, Wellington in the early 1900s (14).

Margot was an enthusiastic gardener and Dr Bernard Forde comments on this aspect (4), "Margot was very keen on gardening and kept up the gardens at her parent's Lower Hutt home with a large garden, as well as the garden of about an acre at their Raumati (north of Wellington) holiday home. I think that initially she saw botany as an offshoot of her gardening activities though it developed into something very much more than that. Margot was a very good High School friend of Robyn McMeekan whose father [C.P. McMeekan, 1908-1972] was the Director of the Ruakura Animal Research Station. Margot stayed with the McMeekans from time to time and I understand that Dr McMeekan strongly encouraged her interest in science as a teenager."

On the suggestion of Dr A.L. Poole (b.1908), Director-General of the N.Z. Forest Service and a former Director of DSIR's Botany Division, Margot's Ph.D. research at the University of California was a study of three natural populations of *Pinus radiata* in the ancestral home of the tree in California. Considering the economic significance of this species in New Zealand forestry, the study was especially significant. Her Ph.D. thesis was entitled "Variation in the natural populations of Monterey pine (*Pinus radiata* Don)". The results of Margot's research were published when she was on the staff of the Forest Research Institute, Rotorua, though she was located in Palmerston North. They include four papers of seminal importance on this most commercially-significant tree in New Zealand (6,7,8,9). The study also signalled Margot's interest in the conservation of genetic resources, plant exploration and introduction from the centres of origin of species, a concept developed by the Russian Plant geneticist N.I. Vavilov (1887-1943, see 15) and elaborated in his "The Origin, Variation, Immunity and Breeding of Cultivated Plants" (16).

After returning to New Zealand with her husband, from 1968-73 Margot was a part-time Lecturer in botany

at Massey University. She was appointed to the former DSIR's Grasslands Division in 1973 to develop a Plant Introduction Centre at Palmerston North. After she moved to DSIR she continued to run honours lectures for botany students from the Forde home in Palmerston North, once a week. Margot was an Honorary Lecturer at Massey University for many years, and was involved with student thesis supervision. She organised the Massey Herbarium on a sound basis and was Honorary Curator up until her death.

From her position on the staff of the Grasslands Division, Margot became a leader in plant exploration in relation to pasture species and in the conservation of forage germplasm at the Division. Margot was a specialist in plant exploration and she collected a wide range of pasture species which will provide a great resource in the future for pasture improvement. Her seed collection work commenced in 1973 (2). In 1986 she participated in the former DSIR's first international seed collection expedition through several Mediterranean countries and she travelled to Inner Mongolia and China in 1987. Regarding her travels in China, Deric Charlton (2) records that she was, "...enthusiastic and sincere towards the people with whom she worked during her Chinese travels. Her humour was one of her endearing characteristics, and she created a deep impression with her Chinese colleagues." Margot was held in very high regard by the Chinese and their Embassy in Wellington sent two representatives to her funeral in 1992. She also travelled and collected seed in the Southern regions of Russia in 1989 as a member of a U.K./U.S.S.R. expedition. These expeditions provided the New Zealand Germplasm Centre with more than 70,000 different accessions which are held under long-term storage conditions.

Margot's plant exploration was a pioneering effort on a project of immense practical importance. It was a project that required great personal determination and courage and some special characteristics such as being able to work in often difficult environments, and having a sense of practical diplomacy, and developing a friendly rapport with diverse peoples. The project also required practical skills in botany which can sometimes be lacking in researchers in plant science. A good sense of humour was also another essential characteristic that she possessed. During these overseas travels Margot was a fine ambassador for New Zealand.

As a development of the plant introduction and plant conservation theme, Margot was convenor of the *Ad Hoc* Committee established in 1981, concerned with the conservation of plant genetic resources in New Zealand. She was largely responsible for the Report of the Committee which was published in *Proceedings of the Royal Society of N.Z.* (11).

During the 1970s Margot and a Grasslands colleague, Mr F.E.T. Suckling organised and collected white clover plants from North Island hill country, from which Dr W.M. Williams in association with Margot, produced 'Grasslands Tahora', the first white clover cultivar bred for wet North Island hill country. Margot's talent in observing and utilising variation helped make this selection possible.

In total, Margot published some 57 research papers mostly in New Zealand botanical and agricultural journals. By the age of 30 she had published 10 papers and prepared accounts of 4 genera (*Euphrasia*, *Parahebe*, *Pygmaea* and *Hebe*: whipcord species) for Volume I of the "Flora of New Zealand" (1).

Margot's publications included a booklet on pollen for Glaxo Ltd., "Allergen Producing Grasses within New Zealand - A Regional Guide" in collaboration with Massey University botanists, as an aid to people suffering from hay fever.

Margot in the 1980s undertook pioneering research with Dr Susan Gardiner on the use of silica gel electrophoresis for distinguishing between species and cultivars on the basis of the protein bands (e.g., 13). This work has application in defining forage cultivars. An account of the technique and its application was presented at International meetings. Included in her many applied commitments in botanical science was forensic work for the police, especially *Cannabis* identifications.

Just before she died Margot was working with Dr Elizabeth Edgar on a taxonomic project on grasses and published posthumously with Dr Edgar a checklist of pooid grasses (12).

Margot willingly gave her time and expertise for projects outside her formal work and as an example, in November 1989 she gave a lecture on New Zealand's foremost botanist, Dr Leonard Cockayne, to the Palmerston North W.E.A. as one in a series on distinguished New Zealand scientists. She was for many



years a member of the N.Z. Genetical Society and took an active part in its activities being President of the Society in 1987 and a member of its Council on a number of occasions.

Outside her specialist interests in science, Margot was a member of the Ruahine Forest Park Advisory Board for about 10 years and she helped with the Management Plan. When the Board was incorporated into the Wellington National Parks and Reserves Board she was appointed to this board because of her experience as a botanist. She was also appointed the first chairperson of the Hawkes Bay/Rangitikei Conservation Board and even though her illness became progressively worse during her term, she only resigned a few months before her death.

Margot was actively involved in the planning and building of the Sixtus Lodge Outdoor Education Centre in the Southern Ruahine Ranges near Apati. She was a foundation member of the Trust which completed the building in 1978, and supervised the environmental development of the Centre up until her death. Shortly after her death the Centre's Arboretum of native trees and shrubs - many planted by Margot - was named The Margot Forde Arboretum, in her honour.

Outside science, Margot was active as a PSA delegate for some years with particular responsibility for women members, and was a member of Zonta for several years. She was also on school PTAs and was a Committee Member, then a very active President, of the Palmerston North Pony Club.

Margot's honours include the award of the Allan Greenstone Mere in 1991 for meritorious service to botanical science in the former DSIR's Botany Division. She was also awarded a New Zealand 1990 Commemoration Medal for services to science.

Margot's daughter Rachel writes (10), "Margot died in June 1992, aged 57, after a long battle with cancer. Knowing that her scientific career was going to be cut short by an early death was a source of profound frustration, and she continued to work as long as she was physically able - including from her hospital bed at times. One of her greatest regrets was being unable to take part in a 1992 grass and legume collecting expedition to South America, organised by her colleague Syd Easton [Dr H.S. Easton], who had accompanied her on previous expeditions. Affection for Margot at Grassland Division - particularly from many of the female staff - was obvious. Technicians from the Herbage Laboratory collected flowers from the Grasslands gardens for her weekly or twice weekly for many months before she died, both when she was home and when in hospital. She treasured these flowers, as they represented a link with her work".

Margot's warmth and wit, her cheerfulness, and her courage in fighting the disease that cut her down at the peak of her career, and her great determination to maintain her research to the last possible moment, will remain a lasting memory of this notable woman scientist.

#### Acknowledgements

Dr Bernard J. Forde and Ms Rachel Forde kindly provided biographical information about Margot and commented on the essay.

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■ **Biographical Notes (37): William Spearman Young (1842–1913)**

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W.S. Young, surveyor and pioneer farmer, was the son of William Young (1813-1893) who arrived at the Bay of Islands from Sydney on the *Buffalo* on 16 April 1840 as a commissariat officer with a contingent of the 80th Regiment. This was sent from Australia to support the new governor, Captain William Hobson. When Auckland became the capital William was transferred there, and, after resigning his commission, was appointed Landing Waiter and Tide Surveyor. He was a friend of the Hobsons, a leader in the social life of early Auckland, and rose to become Controller of Customs and Navigation at the port.

On 22 July 1841, William Young married Eliza Hargreaves, and on 22 July 1842, their first child, William Spearman, was born. He was mainly brought up in the families of friends because Eliza died on 21 April 1845; and after his father remarried in June 1851, William Spearman was sent to Mr Frank Gould's boarding school in Russell, followed by Wesley College in Auckland (1).

At the age of 14 Young began learning surveying from George Clarke in Russell; and a year later, in 1857, his father allowed him to go south as a surveyor's cadet. He carried a letter of introduction from Clarke to Thomas Cass, who had also surveyed in Russell, and was now Chief Surveyor in Canterbury. Cass recommended Young to Edward Jollie who was about to begin a survey of the Canterbury-Otago boundary and a search for a pass to the West Coast. The pair were associated in three expeditions from 1857 to 1859. In their first season they worked their way up the Waitaki River and over the Lindis Pass to Lake Hawea. Next year they went further to Lake Wanaka, and in the third season explored the Matukituki. A pass eluded them (1, 2).

At the end of January 1862, Young accompanied Julius von Haast (the Canterbury Provincial Geologist), and two others, including Arthur Dudley Dobson, through Burkes Pass to Lakes Tekapo and Pukaki. During their exploration of the region they were the first white men to visit Mt Cook. Haast arrived back in Christchurch on 31 May. In November-December 1862, Young surveyed again in the MacKenzie, and then, with his ex-sailor chainman, Warner (later to own Warner's Hotel, Christchurch) went south to the Wanaka region (1, 3). H. von Haast (3) wrote: "Mr William Young, a young surveyor with bush experience, now joined Haast as topographical assistant to accompany him in the attempt to find a pass to the West Coast." On 13 January 1863 the party of five rode round to the western side of Lake Wanaka and then sailed to the head, camping at the Makarora bush. From here they probed north, discovered the Haast Pass, reached the coast, and returned to Makarora after an arduous 6 week journey. On the way home Young surveyed the Wanaka region, the Young River, and the Wilkins River. After this the party returned north to the MacKenzie country where Haast "departed with regret from his cheerful companion Young, and after some geological explorations in that country reached Christchurch on May 12" (1, 2, 3).

On 11 June, 1863, Haast wrote to J.D. Hooker at Kew: "I should be thankful to you if you would name among the novelties of this year's season one after my young friend Mr William Young, assistant surveyor, who was my faithful and energetic companion during my last West Coast journey and assisted me very much collecting. You will see that I collected very carefully *Gramineae* and *Cyperaceae* and as much as possible all in flower and I should be very much astonished indeed if there were no novelties amongst them." Haast added that Young had told him of a variety of N.Z. flax in small creeks near Lake Elsemere (*sic*) "the flower of a yellow waxy colour and shorter and broader in the calyx." (4).

Young then joined the Canterbury Survey Association which became the Canterbury Lands and Survey Department. In Christchurch he surveyed the Port Hills and named Jollies Pass after his old boss; and in the Ashburton-Hinds sector he surveyed the Canterbury Plain (1).

In 1866 Young returned to Auckland where he married Eliza Horne from Glasgow. They farmed at South Head, Kaipara Harbour, from 1868 to 1881, and then took up land at Otakeho on the South Taranaki coast. Young suffered from bronchitis and asthma and in 1893, in search of relief, he moved with Eliza and one son to Hicks Bay, just west of East Cape, where they leased Maori land and farmed. In 1904 they returned to the Otakeho farm, "Riverside", which had been managed by some of their sons, and here

Young died in 1913. His daughter-in-law wrote (1): "at his request he, and later Eliza, were buried in Auckland at St Andrew's Epsom, the church where his son Arthur had for so long been a vestryman and later a warden. Although William Spearman had spent so little of his life in Auckland he wanted to be buried in the city of his birth, where he had spent his early childhood and where he felt he belonged."

Young's grandson, Hon. Venn Young Q.S.O. held several portfolios in National Governments including that of Minister of Lands, Forests and the Environment (1975-81) when "he played a major role in lifting New Zealand's awareness of environmental issues" (5).

### Eponymy

1864 *Gnaphalium (Helichrysum) youngii*. "Middle Island : mountains above Lake Hawea alt. 6000 ft.; forming patches; summit of Mount Torlesse and Mount Cook on shingle alt. 6500-7000 ft. *Haast*; Otago, Lake District *Hector and Buchanan*. Named in honour of Mr William Young, Mr Haast's fellow traveller and able assistant both as a surveyor and botanical collector." J.D. Hooker *Handbook NZ Fl.* 152.

1864 *Agrostis youngii*. "Middle Island : dry hillsides, sources of the Waitaki; *Haast*" J.D. Hooker *Ibid.* 330.

1864 *Trisetum youngii*. "Middle Island : Macaulay Valley, alt. 3000-4000 ft., *Haast and Young*. Named in compliment to Mr Haast's able and indefatigable assistant surveyor, who has paid much attention to collecting the grasses of the southern alps." J.D. Hooker *Ibid.* 335.

1864 *Triticum youngii*. "Middle Island : grassy flats, sources of the Waitaki, alt. 3000 ft., *Haast*" J. D. Hooker, *ibid.* 343.

Young Range: between Lakes Hawea and Wanaka.

Young River : south of the Haast Pass about opposite Makarora.

### Acknowledgements

Dr A.D. Thomson kindly drew my attention to the Young biography, and *The Press* report. Thanks also to Wendy Weller, for typing this note.

### References

(1) Lesley Young, 1976 *Father & Son, A Young Saga* Pegasus Press, Christchurch; (2) John Pascoe, 1983 *Early Explorations in New Zealand* A.H. & A.W. Reed, Wellington; (3) H.V. von Haast, 1948 *The Life & Times of Sir Julius von Haast*, Wellington; (4) D.J. Galloway 1976: Julius von Haast's botanical explorations. *N.Z. Alpine Journal* 29: 88-108; (5) J. Bolger, 1993: Young 'had rare political courage'. *The Press* 16 Jan.

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## PUBLICATIONS

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### ■ Book Reviews

**Salmon, John T. *The Trees in New Zealand: Exotic Trees - The Broadleaves*. Reed Books, Auckland, New Zealand. 372 pp. \$120.**

This book aims to provide a guide to over 350 species of exotic broadleaved trees in New Zealand and is illustrated with some 1200 colour photographs. There is certainly a need for a comprehensive book on exotic trees in New Zealand and this book helps to fill a gap in our literature but unfortunately it has serious flaws.

The tree species are arranged into families and genera but for the convenience of space and publication do not appear in strict systematic order. With the families in a rather random order the index has to be relied on to find anything whereas an alphabetical sequence of families or genera would have made it easier to find a particular species. Even a list of the families on the contents page would have been helpful.

A wide range of species is covered but some very common trees have been omitted. For example, there is no mention of *Eucalyptus macarthurii*, one of the most common trees on New Zealand farms.

There is an interesting introduction by Julian Matthews and an excellent guide to leaves, flowers and fruits with clear drawings. There are relatively brief notes on each family and genus and there is a short

descriptive account for each species. Most of the text is well written but there are occasional glitches. On page 291 for example, the description of the family, Myrtaceae flower buds “covered apically by a conical or beaked cap” ... etc. is correct for the genus *Eucalyptus* but does not apply to the whole family, and the sentence stating that leaves have a midrib and either parallel veins or these are at an angle greater than, or less than, 60 degrees does little to describe the family!

The statement on page 237 “*Racosperma (Acacia)* is a large worldwide genus of trees, shrubs, climbers and occasional herbs” requires comment. The genus *Acacia* includes over 1200 species of trees, shrubs, and a few climbers but no herbs. It is distributed widely with many species in Africa and Australia. It has been proposed to split the genus *Acacia* into three genera (Pedley, 1986) and if this was accepted, the genus *Racosperma* would include most of the 800 Australian species and a few from Melanesia, but it is certainly not a worldwide genus. However, there is doubt whether the name *Racosperma* was originally validly published, debate over the way that *Acacia* should be split (Maslin, 1989), and most taxa of *Racosperma* have not been formally transferred from *Acacia* (Pedley, 1990). Consequently the name *Racosperma* has not been widely accepted and has not been used in any of the recent Australian botanical texts such as the Flora of New South Wales or Flora of Victoria and will not be used in the forthcoming Flora of Australia series (Entwistle *et al.*, 1996). It is unfortunate that it was used in volume four of the Flora of New Zealand. It would be much better if the name *Racosperma* was forgotten until this large group was more thoroughly sorted out.

The text for each species indicates where the species originates from, provides a simple, brief, description, and mentions where it grows in New Zealand. It does not provide information on how to grow the trees and there is no highlighting of the key features for identifying them which is so useful but rarely done.

The colour photographs provide great visual appeal. The one on the cover is an excellent choice and there are some very good photographs throughout. However, more close-up photos of flowers and fruit are essential if such a book is to really help the reader identify the more difficult species. There are two excellent close-up photos on the bottom of page 300, but they are upside down! There are many lost opportunities to illustrate a plant more fully where the same subject is duplicated for no apparent reason other than to fill space (cf. Fig. 74 and Fig. 76 on pages 178 and 179).

Unfortunately there are numerous mistakes in the identification of the trees photographed including placing the specimen in an incorrect genus and family, e.g. *Liquidambar formosana* instead of *Acer monspessulanum*. A list of corrections is provided below to enable the book to be used more reliably to identify broadleaved trees. Botanical names are listed for photos that have been identified with reasonable certainty. There may be other errors, particularly where the photos fail to provide the necessary detail for accurate identification. Fortunately I have been able to match some of the photos with specimens collected by the author. In the authors preface it mentions that these voucher specimens were lodged with the Victoria University herbarium but they were unable to store them and the specimens are now at the *Forest Research* herbarium in Rotorua.

This book is not up to the standard of the authors excellent book “The Native Trees of New Zealand” and with numerous mistakes reducing its usefulness I consider it expensive at \$120.

#### Corrections:

Page	Fig.	Caption	Comments
19	15	<i>Salix chrysocoma</i>	<i>Salix fragilis</i> ? Note the branchlets are not hanging.
44	73, 74, 75, 76	poplar hybrid	<i>Brachychiton populneus</i> , but the photos on page 353 of <i>Brachychiton populnea</i> (sic) are correct.
95	50	<i>Quercus acutifolia</i>	<i>Quercus acutissima</i>
109	38, 39	<i>Zelkova carpinifolia</i>	<i>Nothofagus obliqua</i>
110	40, 43	<i>Zelkova serrata</i>	<i>Nothofagus obliqua</i> . This tree is in the grounds of Forest Research, Rotorua.
114	6	<i>Corylus colurna</i>	<i>Corylus avellana</i>

144	1, 2	<i>Eucommia ulmoides</i>	<i>Parrotia persica</i> , see photos on p. 147.
173	54, 55	<i>Acer nikoense</i>	<i>Acer negundo</i>
178	73, 74, 75	<i>Acer monspessulanum</i>	<i>Liquidambar formosana</i> , c.f. fig. 77.
179	76	<i>Acer monspessulanum</i>	<i>Liquidambar formosana</i>
187	11	<i>Rhus verniciflua</i>	This is likely to be <i>Rhus succedaneum</i> , which is common in New Zealand. I have no records of <i>R. verniciflua</i> in New Zealand.
209	15, 17 16	<i>Sorbus sargentiana</i> <i>Sorbs sargentiana</i>	<i>Rhus succedanea</i> <i>Melia azedarach</i>
234	2	<i>Racosperma baileyana</i>	<i>Acacia dealbata</i>
237	11	<i>Racosperma dealbata</i>	<i>Acacia baileyana</i>
238	16	<i>Racosperma dealbata</i>	<i>Acacia baileyana</i>
244	43, 44	<i>Racosperma polifolia</i>	<i>Acacia buxifolia?</i>
245	48, 49	<i>Racosperma pycnantha</i>	<i>Acacia longifolia</i>
264	22, 23 24, 25	<i>Juglans mandshurica</i>	<i>Juglans ailantifolia</i> . I have no record of <i>J. mandshurica</i> growing in New Zealand.
267	31, 32 33	<i>Pterocarya fraxinifolia</i> <i>Pterocarya fraxinifolia</i>	<i>Pterocarya stenoptera</i> <i>Juglans ailantifolia</i>
268	34, 35	<i>Pterocarya fraxinifolia</i>	<i>Pterocarya stenoptera</i>
291	1	<i>Eucalyptus pulchella</i>	This figure and the bark description on page 307 are incorrect as this species has smooth bark to the base.
292	5, 8	<i>Eucalyptus ficifolia</i>	<i>Eucalyptus leucoxylon</i>
295	22	<i>Eucalyptus globulus</i>	These leaves are the wrong colour and shape and are probably <i>E. regnans</i> .
296	23, 24, 25, 26, 27	<i>Eucalyptus fraxinoides</i>	All the captions are incorrect but the photos cannot be identified with certainty.
297	28 29 30	<i>Eucalyptus fraxinoides</i> <i>Eucalyptus fraxinoides</i> <i>Eucalyptus regnans</i>	<i>Eucalyptus delegatensis</i> <i>Eucalyptus macarthurii</i> <i>Eucalyptus delegatensis</i>
298	34 35	<i>Eucalyptus regnans</i> <i>Eucalyptus regnans</i>	<i>Eucalyptus delegatensis</i> . Branchlets of <i>E. regnans</i> are never white and glaucous. <i>Eucalyptus globulus</i> or <i>E. nitens</i> .
309	85, 86, 87, 88	<i>Eucalyptus camaldulensis</i>	<i>Eucalyptus maidenii</i>
310	89, 90 92, 93 94, 95	<i>Eucalyptus camaldulensis</i> <i>Eucalyptus microcarpa</i>	<i>Eucalyptus maidenii</i> <i>Eucalyptus radiata</i> . I have no records of <i>E. microcarpa</i> in New Zealand.
311	4	<i>Eucalyptus melliodora</i>	<i>Eucalyptus gunnii</i>
312	6, 7, 8, 9, 10	<i>Eucalyptus stricklandii</i>	<i>Eucalyptus cypellocarpa</i> . I have no records of <i>Eucalyptus stricklandii</i> in New Zealand.
313	11, 14	<i>Eucalyptus grandis</i>	With the leaves hanging down rather than horizontal this is not <i>E. grandis</i> .
315	23	<i>Eucalyptus obliqua</i>	<i>Eucalyptus delegatensis</i>
316	25, 26, 27, 28, 29	<i>Eucalyptus citriodora</i>	<i>Eucalyptus pauciflora</i>
321	45, 46	<i>Eucalyptus mannifera</i>	<i>Eucalyptus pulchella</i>
323	52	<i>Eucalyptus saligna</i>	<i>Eucalyptus botryoides</i> . <i>Eucalyptus saligna</i> has smooth grey bark.
326	65	<i>Eucalyptus tereticornis</i>	<i>Eucalyptus viminalis</i>
362	11, 12	<i>Franklinia altamaha</i>	<i>Stewartia sinensis</i>
363	14, 15, 16, 17	<i>Stewartia pseudocamellia</i>	Not <i>Stewartia pseudocamellia</i> .

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**Chris Eckroyd**, Herbarium Curator, FRI, Private Bag 3020, Rotorua

**Edgar, E. and H. E. Connor, *Flora of New Zealand Vol V. Grasses*. Maanaki Whenua Press, Lincoln, 2000. 650pp.**

At last, a comprehensive grass flora of New Zealand, that even those of us in (early) retirement have been anxiously awaiting for all of our professional lives. Its completion represents dedication beyond the normal call of duty for its co-authors Elizabeth Edgar and Henry Connor, who both retired from Botany Division, DSIR, more than a decade ago and have served as Research Fellows at Landcare and Canterbury University, respectively, to see the job through.

Compilation of this flora represents the fifth and last in the series on the New Zealand flora and clearly has been the most demanding one of all. Its a real credit to its authors, in terms of both accomplishment and determination. All of the currently known grasses in the N Z Biogeographical Region are included, comprising 157 endemics, 31 other indigenous species, naturalised grasses (226 spp.) and even "transients" (46 spp.), some 460 in all. They have all been treated equally apart from synonymy, which is complete only for the native species. There is a valuable key to the 21 tribes and to each of the genera. Each species predictably has a comprehensive taxonomic description as well as generally brief notes on distribution.

The extended preface (29 pp.) is highly informative, with some content and style that are unmistakably Henry, being both perceptive as well as provocative, even acerbic in places. It is thoroughly delightful and offers great relief in an otherwise inevitably generally technical production. There are sections dealing with aspects of history; the challenge of unravelling the taxonomy of many of the indigenous taxa (we are told the authors spent "no longer than necessary" on nomenclatorial matters so as to devote as much time as possible to the more demanding taxonomic studies); experimental aspects; floral dimorphism and reproductive biology; typification; biogeography; ecology (eg. calcicoles and weediness, including "surveillance grasses"); conservation status (of endemic species); and naturalisation (the naturalised flora exceeds the indigenous component); chromosome numbers; and lastly an insightful, more personal perspective in a section headed "*De Auctoribus*" (about the authors), which I wouldn't attempt to precis.

We are also told that "the names of New Zealand grasses reflect nothing of indigenous origin at generic level and there are only two Maori words, "*toetoe*" and "*unarede*" used at specific level. Thus "no political overtones, no conservation ploy, no historic person, event or place is called into commemoration, even though there were many opportunities. Our grass flora is singularly free of overtones."

There is also a valuable 40 page section devoted to "*Annals of taxonomic research*" in New Zealand, as well as 24 very helpful whole-page figures of floral parts of indigenous and exotic grasses plus 12 high quality colour plates that range from landscapes to single specimens, or their more diagnostic parts (e.g. tiller bases of some *Chionochloa* species). There are also two superb plates of dorsal views of florets from 16 species of *Rytidosperma*.

Obviously bugged by the cladists involved in refereeing the many revisions, the authors justify their refusal to accede in terms of the still inadequate, relevant information. In a book of this size and complexity, there are inevitably a few typos and other glitches but these are quite minor and do not detract from this book of great value (which also acknowledges the generous financial support of the Hellaby Indigenous Grasslands Research Trust). I strongly commend this book to the many others who I know have been struggling for decades to acquire a better knowledge and understanding of our distinctive New Zealand grasses. Now there is no excuse!

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■ **Journals Received**

New Zealand Native Orchid Group Journal 74

March 2000, Edited by Ian St George, 22 Orchard St, Wellington. Email: [istge@rnzcgp.org.nz](mailto:istge@rnzcgp.org.nz)

Original papers in this issue are: Ian St George - Craigie Lea; Ian St George - *Caleana minor*; Peter de Lange - Stewart Island and Waikato Orchids.

A 2<sup>nd</sup> edition of the Group's *Field Guide* is planned for late 2000, incorporating taxonomic changes and recent distribution reports. If you are aware of orchid sites not included in the current maps please write to the editor as soon as possible.





Manaaki  
Whenua  
P R E S S

# Flora of New Zealand Volume V: Grasses

PRE-RELEASE FLYER – AVAILABLE END OF FEBRUARY 2000

By E Edgar & H E Connor

*Flora of New Zealand Volume V: Grasses* is the first fully integrated Flora in the series, covering both native and naturalised grasses, and completes the vascular Flora of New Zealand. Included are formal nomenclature, descriptions, distributions records, ecological information, and keys to genera of about 400 species. It also features excellent line drawings by Sabrina Malcolm and colour illustrations by Keith West, with photographs by Peter Johnson.

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There has been no consolidated taxonomic account of the New Zealand grasses for 75 years. To precede the publication of this volume, Drs Edgar and Connor wrote a long series of revisions of large and difficult genera, but even the smaller genera needed consideration. These tasks took almost 20 years.

**Dr Elizabeth Edgar** worked in Botany Division, DSIR on grass-like plants, rushes and sedges, for Volumes II and III of *Flora of New Zealand* and latterly, as a Research Associate at Landcare Research, on the true grasses for this final volume.

**Dr H. E. Connor** worked and published extensively on grasses and grasslands at Botany Division, DSIR. Since retirement, he has been an Honorary Fellow at the University of Canterbury where he continued work on this volume.

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