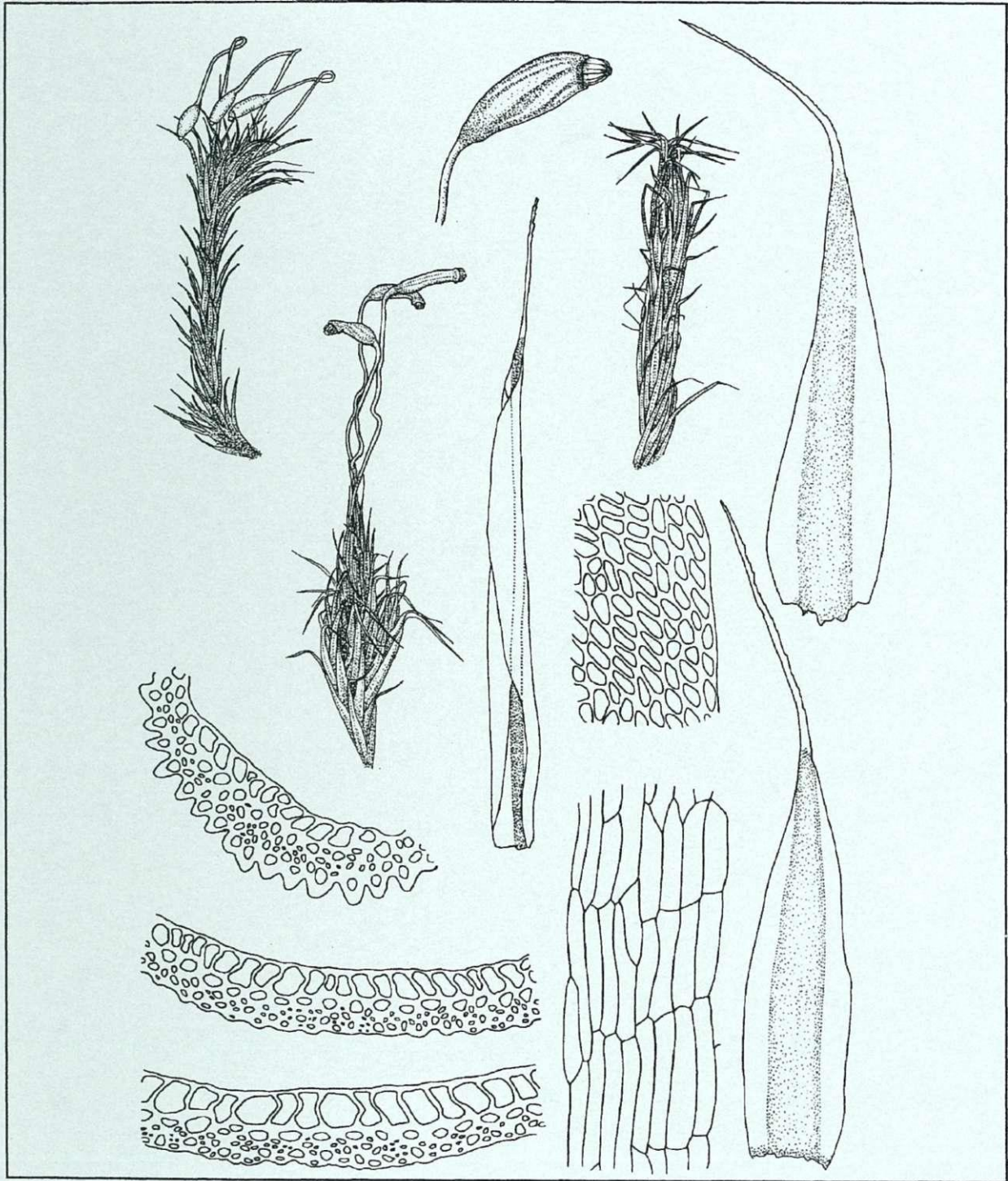


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 65

SEPTEMBER 2001



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 2001 ordinary and institutional subs are \$18 (reduced to \$15 if paid by the due date on the subscription invoice). The 2001 student sub, available to full-time students, is \$9 (reduced to \$7 if paid by the due date on the subscription invoice).

Back issues of the *Newsletter* are available at \$2.50 each from Number 1 (August 1985) to Number 46 (December 1996), \$3.00 each from Number 47 (March 1997) to Number 50 (December 1997), and \$3.75 each from Number 51 (March 1998) onwards. Since 1986 the *Newsletter* has appeared quarterly in March, June, September and December.

New subscriptions are always welcome and these, together with back issue orders, should be sent to the Secretary/Treasurer (address above).

Subscriptions are due by 28th February each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next year's subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

Deadline for next issue

The deadline for the December 2001 issue (Number 66) is 25 November 2001.

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

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

Cover Illustration

Campylopus introflexus (Hedw.) Brid. is a widespread and generally common bryophyte species throughout New Zealand, occurring also in Australia and southern South America. Although variable, the species is usually readily recognisable by the strongly reflexed hyaline hair points of the leaves. The broad costa (or mid-vein) and cygneous seta are features shared with all members of the genus. *C. introflexus* is a weedy species of wide environmental tolerance. It forms turves of up to several square metres in extent on mineral or humic soils, duff, peat, rotten or burnt wood and is often abundant following fire or mechanical disturbance.

Campylopus introflexus is one of the few southern hemisphere bryophytes to have become established as an adventive in the northern hemisphere. In Europe, where it was first found in 1941, it is an aggressive species of open habitats and continues to expand its range.

Line drawing by **Rebecca Wagstaff** for the Moss Flora of New Zealand being written by Allan Fife, Landcare Research, Lincoln. Height of fruiting plant in upper left corner is 20 mm.

NEW ZEALAND BOTANICAL SOCIETY
NEWSLETTER
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NEWS

New Zealand Botanical Society News

■ From the Secretary/Treasurer

Call for nominations

Nominations are called for the following positions of Officers and Committee of the New Zealand Botanical Society for 2002:

President
Secretary/Treasurer
3 Committee Members

Nominations for all positions opened 1 September 2001 and close on 20 November 2001. Nominations shall be made in writing to the Secretary, and shall be signed by the Proposer, the Seconder, and by the Nominee to indicate their acceptance of nomination. If necessary, ballot papers for a postal election will be circulated with the December Newsletter.

Notice of meeting

A General Meeting of the New Zealand Botanical Society Incorporated will be held following the symposium "New Zealand seeds - their morphology, ecology and use as indicators" at 4.30 - 5.30 p.m. on Thursday, 29 November 2001, at Lincoln University, Canterbury (Room yet to be announced).

General Business will include:

- (i) The Allan Mere
- (ii) Threatened Plant Committee
- (iii) Threatened Plants - progress report from Task Group

Further items for the agenda should be forwarded to:

The Secretary NZBS
Anthony Wright
C/- Canterbury Museum
Rolleston Avenue
Christchurch 8001

to be received before 20 November.

Regional Botanical Society News

■ **Auckland Botanical Society**

June Meeting

ABS joined with the North Shore branch of the RSNZ for the 2001 Cockayne Memorial Lecture, delivered this year by Dr Matt McGlone from Landcare Research, Lincoln. Matt's main research interests of vegetation change of the last Pleistocene-Holocene period, climate change, impact of human settlement and plant biogeography, led to a thought provoking discussion of how the vegetation cover of New Zealand came to be, how it was disrupted, and the alternative futures that lie ahead.

June Field Trip

Steve Cook led the outing through two North Shore reserves; firstly, Smiths Bush, adjacent to the motorway, and then Eskdale Reserve at Birkenhead. Smiths Bush is quite unique, with the high arching

branches of large puriri forming the canopy, very little sub-canopy, and a carpet of ferns – mainly *Arthropteris tenella*, *Asplenium lamprophyllum* and *Microsorium scandens*. The bush has been much used and degraded over the years, but Steve, in his former job as Parks Supervisor for the North Shore, was responsible for initiating the building of wooden walkways, and weirs on the channel that drains the bush, with the aim of raising the water table. These moves, together with a programme of weed eradication, mean that the bush is recovering well.

The bush in Eskdale Reserve is a complete contrast. There are a variety of habitats, with secondary broadleaf forest, some gumland scrub on the higher areas, and swamps in the gullies. A good grove of swamp maire was found, accompanied by the pneumatophores that are commonly found with this species. The reserve has a bad weed problem, with wild ginger and privet being the main culprits.

July Meeting

Tristan Armstrong, an Australian now working for Landcare Research, researched alpine *Ranunculus* for his PhD. The alpine region in Australia covers a tiny part of the continent, yet five species of *Ranunculus* grow and hybridise there. Each species grows in a different habitat, with hybrids growing in the narrow ecotonal areas between habitats. Tristan's work in hybridisation and planting led him to propose that environmental selection maintains these lineages as distinct units.

July Field Trip

Despite an early torrential downpour, the day was miraculously fine for a trip to Rangitoto concentrating on ferns and bryophytes and led by John Braggins. The wet conditions meant that these smallest of plants were in tiptop order. The wetter, shadier places were carpeted with a lush covering of kidney fern and the filmy ferns, *Hymenophyllum sanguinolentum* and *H. cupressiforme*. The scoria, gravel and pohutukawa bark all sported an amazing assortment of mosses and liverworts, including a liverwort, *Plagiochila bazzanioides*, that is endemic to the island.

August Meeting

For his PhD Avi Holzapfel worked on *Dactylanthus taylorii*, and presented a summary of his findings to the well-attended meeting. His studies included flower anatomy, pollination, seed germination, host root infection and vegetative reproduction. He also presented the latest information on the genetic diversity of populations in New Zealand. There are a couple of historic records of *Dactylanthus* having been found near Auckland, and Avi's talk was inspiration to get out there and find it again.

August Field Trip

Where the Manukau Harbour touches the Penrose manufacturing area is an unlovely site criss-crossed by railway lines and bounded by industrial buildings. Despite the unprepossessing appearance of the lava flow beside Anne's Creek, there are some little botanical treasures still holding their own against the weeds. Leader Rhys Gardner was the ideal person to explain the differences between three geranium species, *Geranium retrorsum*, *G. solanderi* "large petals" and *G. solanderi* "coarse hairs". The ferns *Asplenium flabellifolium*, and *Cheilanthes sieberi* clung to rock crevices, and *Coprosma crassifolia* was present. After lunch nearby Hamlin's Hill was visited to view ARC plantings.

FORTHCOMING ACTIVITIES

- 5 September Ewen Cameron – Vegetation of Western Australia
- 15 September Dunn's Bush, Puhoi
- 3 October Ken Hill – Lucy Cranwell Lecture
- 20 October Rata Ridge Track, Hunua
- 7 November Matt Renner & Tim Martin, Student talks
- 17 November Man-o-War Bay, Waiheke

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

■ **Waikato Botanical Society**

RECENT ACTIVITIES

July Meeting

Theresa Downs spoke about the original and current native vegetation of Hamilton City. Older native forest is now reduced to small remnants such as Claudeland's Bush and Hammond Bush, while secondary vegetation dominated by mahoe, pate and tree fuchsia is relatively common in some of the city's major gully systems. Theresa also outlined some of the restoration projects under way to restore native ecosystems and introduced the 52-page Gully Restoration Guide recently published by the Hamilton City Council.

August Field Trip

On a gorgeous winter morning we visited a 16 hectare gully restoration project with a difference; that being it is encircled by a 2.4 km pest-proof fence, designed and tested on the Karapiro property by the landowners and a team of scientists. Pre-restoration vegetation was dominated by a vast and dense array of weeds, with patches of kanuka forest and tree ferns. Following weed clearance over 30,000 native plants have been planted in the past few years. The innovative fence and protected valley is creating a lot of interest, including that of the Department of Conservation, who are considering the site as a temporary home for young kiwi.

UPCOMING ACTIVITIES

All evening talks are held at Landcare Research, Gate 10 Waikato University, off Silverdale Road, Hamilton. This is also the Hamilton departure point for society field trips.

Monday 10 September Waikato wetlands

Bev Clarkson will speak about Waikato's freshwater wetlands (bogs, swamps and fens), including their special features, threatened plants and history of development. 7:30pm.

Saturday 13 October Koropupu Scenic Reserve, Waitomo

View matai-kahikatea forest and special limestone flora including limestone ferns and *Teucrium parvifolium*, a threatened native shrub. Meet Hamilton 8:30am.

Monday 12 November Introduction to Fungi

Renowned local photographer Don Horne will present us with an illustrated introduction to the colourful and interesting world of fungi. 7:30pm.

SPECIAL PROJECT - BOTANY OF THE WAIKATO PUBLICATION

Work on this project is now full-steam ahead, with over \$20,000 in funding now secured for publication. At least 1,000 copies of the book, which is packed with full-colour illustrations, will be printed initially. We are on target for a pre-Christmas release, so watch this space for further updates.

Theresa Downs, Dept Biological Sciences, University of Waikato, Private Bag 3105, Hamilton.

Email: t.downs@waikato.ac.nz

■ **Wanganui Museum Botanical Group**

TRIP REPORTS

"Tyrone" Farm, Makuhou, north of Marton, 31 March

A small party visited the Stewart property "Tyrone" on Makuhou Road on a beautiful day. The property lies between the Turakina valley and Tutaenui rising to 300m. From the tops the towers at Wanganui can be seen.

Hugh Stewart provided transport in the form of a 4-wheel drive farm bike and a trailer. The first site visited was one of the high points in hill country grazing on which was an area of silver tussock (*Poa cita*) (see article p 22). Two areas of unfenced bush in valleys were next visited. On the edges of these, divaricating shrubs were quite abundant. An unusual plant in the first was *Arthropodium candidum* and in the second

Mazus novaezeelandiae subsp. *novaezeelandiae*. On a ridge between these two valleys (which comprise an area of some 180ha of hill country grazing and bush remnants) was a small wetland of interest. Although grazed when water levels are low, it was dominated by *Carex secta* and *Poa anceps*. We noted several unusual plants in this area including *Epilobium pallidiflorum*, *Olearia virgata*, *Juncus distegus*, *Hypolepis distans* and *Hydrocotyle pterocarpa*. Colin Ogle's list of native plants for the day, excluding those found in the tussockland, contains some 110 species.

On the way to the bush areas we passed a spring-fed totara water trough about 80 years old and still in use. Hugh says that the trough holds water perfectly provided it is not allowed to dry out.

Reports of *Korthalsella salicornioides* growing on kanuka trees on the roadside in the adjacent Makuhou Scenic Reserve were not confirmed, mainly because we found no trees growing near the roadside and time was getting on.

Randel Springer

Higgie's Bush, 29 April

Only five members met Clive Higgie at the end of Denlair Road. We had intended to go by car across the farm to a fenced area of bush, but we walked down the track to look at the bush in the gully and Clive pointed out a giant nikau and two huge rata trees. We decided to clamber down a steep hill and explore. On the edge were masses of climbing rata (three species). Clive left us to carry on and we scrambled through supplejack accompanied by Ngatapu (Clive's dog) and eventually found the nikau and ratas. There were also a number of different divaricating shrubs and ferns and a sizeable ngaio. Our climb back up the hill was eased by detours to collect peacock feathers, so it was lunchtime when we arrived back at the cars. Two of our company had to return home so the remainder enjoyed a wander through Paloma Gardens. The growth and change in the gardens has been breathtaking since our last visit.

Beulah Tate

Some Wanganui gardens, 30 June

The interest generated last winter by our tour of some plantings in school grounds brought together 14 members for a similar trip this year. We began at Wanganui Collegiate where we expected to see many old trees. Extensions and additions to the school buildings over the years probably have led to the loss of some early plantings but we found several very large and unusual trees for the city and some newer plantings that included native species. The latter included young trees of wharangi (*Melicope ternata*) and various *Hebe* cultivars, with the West Australian *Kunzea baxteri*, in flower. Just in from Liverpool Street, the old trees included a paperbark (*Melaleuca*, probably *M. alternifolia*), with a massive forked trunk, and several large eucalypts. Beyond the school buildings was a Grampians gum (*E. serranensis*), the only mature tree of this species known in the city. Its bark was spiralled on a short twisted trunk and it had very thick oval leaves and bunches of quite large sessile flowers and capsules. Jim Howard pointed out large shrubs of *Escallonia bifida*, a new species to me. A number of leafless deciduous trees were beyond any of us to identify for certain. Although the grounds were generally very tidy, weeds in some of the hedges and shrubberies had us itching to do some control – a couple of the group couldn't resist removing one smallish old man's beard, but larger vines remained. Others were Japanese honeysuckle, boneseed, climbing asparagus (*Asparagus scandens*), smilax (*A. asparagoides*) and the fine-textured *A. plumosus* (= *A. setaceus*). The last is a rare weed in the city but I pointed out that it might become much worse, at least in warmer parts of NZ, judging by its weediness on Lord Howe Island.

Joan and Ada Liddell invited us back to have our lunches on their sunny patio. On the way, I suggested that we make a 'brief' stop on the street front at Purnell House, mainly to see another *K. baxteri* in flower and a row of winter flowering gums (*E. leucoxydon*), each with a different flower colour, from white to deep rose-pink. However, other plants distracted us further. Old dunes at the rear of buildings had a row of maybe 10 large she-oaks (*Allocasuarina verticillata*), each laden with either male 'catkins' or female 'cones'. Ian and Jocelyn identified another paperbark as *M. nesophila*, and among the unmown veld grass were many self-established red-flowered lachenalia (possibly *Lachenalia pendula*). Even the playing field was intriguing; in places, grass was less common than the leaves of two cormaceous plants, probably *Tritonia lineata* and *Romulea rosea*, and the large, rich pink-flowered *Oxalis purpurea*.

Joan and Ada's garden was not on the original schedule for the day, but we were impressed with the ongoing redevelopment of it. Although some of the large trees have gone in the past several years, there are still lots of smaller plants of great interest, both native and exotic.

Our last scheduled stop was 'Hikurangi Rest Home', once the site of a large old garden. We found fewer plants of special note than we'd hoped for, again because new buildings have been added to the original homestead. Nevertheless, there was a very large red oak (*Quercus rubra*) and an unfamiliar, tall, slender *Cotoneaster*, later identified as *C. X watereri*. Among the trees, it was almost impossible to explore off the formed paths because of thickets of self-sown Chinese windmill palms (*Trachycarpus fortunei*) and some young nikau, all laced together with thorny elaeagnus.

Our thanks to Chris Ecroyd of Forest Research in Rotorua for identifying several of our finds, and to the property owners for sharing their gardens with us. Colin Ogle

PROGRAMME

2 October

Colin Ogle and Graeme La Cock will give us an expanded and illustrated account of their paper on old man's beard (*Clematis vitalba*) around Taihape that was presented at a combined conference of the NZ and Australian Ecological Societies and published in 'Austral Ecology' last year. Wanganui Botanical Group members helped with some of the data collection at Taihape and Paengaroa Scenic Reserves. The talk shows how this weed and its control have altered the forest structure and composition at Taihape, and led to the local extinction of 25% of the reserve's native species, including some already on the national threatened plants list.

6 November: Practical evening 'A rose by any other name' - even if it's a bidibid?

This is another of those popular practical evenings based on a plant family, this time the family Rosaceae. The evening will follow the same pattern. Bring pen/pencil, hand lens if you have one and any suitable plants in flower or fruit. The Rosaceae includes rose, apple, peach, blackberry, strawberry, *Potentilla*, *Geum*, *Acaena* (bidibid), *Cotoneaster*, loquat and hawthorn.

4 December: Christmas social evening

5 February 2002: Araucariaceae in NZ

An illustrated talk about the variety and vigour of planted trees of *Agathis* and *Araucaria* around NZ. Clive Higgin.

5 March: Plants in China

Jim Howard has offered us an illustrated talk on his recent trip.

2 April: Show and Tell

This is a members' evening with a difference (i.e. no slides!). Everyone must have an interesting botanical object which they can bring along to show us - a book, picture/painting/photo, potted plant, wooden object, seed-head, cone, etc. Hopefully you'll say a few words about it as well!

FIELD TRIPS

Saturday 29 September: Edmonds' Covenanted Bush, Kai-iwi

Leader: Alan Martin. Meet at Claphams, 100 Great North Road, 9.30am.

Sunday 4 November: Corballis's Covenanted Bush

Since about 1989 we have had several trips to Neil and Jill Corballis's forest patches at 'Marangai', Kaitoke. Even if you went last time, prepare to be amazed at the recent regeneration - and see how the nationally threatened dwarf mazus has changed its habitat and abundance. Meet at the Marangai Blockhouse (off SH3) at 9.30 am. Leader: Colin Ogle (ph: 347 8547)

Saturday 1 December: Western dunes of Castlecliff Beach

On previous trips here, we have never walked more than 1 km or so west of the last houses. Last Easter, a couple of us guided the Wellington Botanical Society here and re-found the unnamed *Pimelea* 'Turakina' at the base of the cliffs. This time we plan to head further west, with the help of a 4 wheel-drive vehicle from DoC. As well as searching for more *Pimelea* 'Turakina', we'll document sand pimelea (*P. arenaria*)

and check on the colourful weeds (garden escapes). We start at the car park at top of Longbeach Drive at 9 am. Leader: Ian Bell (ph: 343 7686).

Saturday 2 February: Karioi/Rangipo Desert Trip to see matagouri, alpine *Melicytus* and lots of *Carmichaelia odorata*, between Karioi Pine Forest and Rangipo Desert. Meet at corner of State Highway 49 (Ohakune-Waiouru) and Karioi Road Station Road (the road to Rotokuru Lakes) at 9.15am; those leaving from Wanganui meet at Bell St police station at 7.30 am.

Transport co-ordinator: Colin (ph: 378 8547); field leader: Nick Singers, DoC, Turangi.

Thursday 14 February: Picnic at Bason Reserve Meet top car park 6pm. Bring picnic tea.

Saturday 2 March: Preston's wetland, Raetihi

As well as visiting this privately owned wetland, we'll make 2 stops beside SH4 to see (a) *Dactyloctenium*; (b) yellow mistletoe (*Alepis flavida*). Meet Bell Street police station at 8 am. Leader: Jim Campbell (ph: 348 7272).

Sunday 31 March: Mangaweka Scenic Reserve

As well as *Dactyloctenium* (flowering, we hope) and mistletoes (*Ileostylus*, *Tupeia* and *Korthalsella salicornioides*) near the track in the 'southern block' of the reserve, we hope to visit the little-known 'northern block'. Meet Bell Street police station at 8.30am. Leader: Graeme La Cock (ph: 345 3630).

Secretary: Robyn Ogle, 22 Forres Street, Wanganui. Phone: 347 8547

■ Manawatu Botanical Society

PAST MEETINGS AND TRIPS

From the Desert Road - Peter van Essen - 5 April 2001

From the Desert Road to Kuripapango - a five day vegetation reconnaissance via the Moawhango, Kaimanawa and Kaweka Mountains (March 2001). Peter van Essen gave a slide show of a fast paced 5 day trip (covering over 80 km) to have a quick look at the tussock grasslands in the Moawhango area (feral horse country) and beech forest health in the southern Kaimanawa and Kaweka Ranges, exiting at Kuripapango on the Taihape - Napier Road.



Volcanoes Ruapehu and Nguaruhoe from Kaimanawa Ranges.

The trip started at the Summit of the Desert Road and initially followed the poled route that separates the Moawhango Army Land from the Kaimanawa Forest Park, before dropping into the headwaters of the Moawhango River where previously very high feral horse numbers had caused a lot of damage to the wetlands and tussock lands. On this trip four horses were seen in this area so numbers are much lower, but damage from browsing of the flush zones around the valley floor is still obvious even with lower horse numbers. From the Makomiko and Rangitikei Rivers, Peter then travelled up the Mangamaire River that divides the Kaimanawa Forest Park from

Ngamatea Station. The sika deer sign in this valley was extensive and in places severe browse had completely removed the understory. Sika are more cagey than red deer so, even though numbers are high and you often hear them whistling warnings and crashing off through the forest, one seldom sees them when just tramping. Next, heading across country to the Ngaruroro River and over into the Ngaawapurua (Harkness) Valley, Peter arrived in a true Kaweka Valley with mountain beech clad slopes but open tussock valley floor and lower slopes. Many of these tussock areas and also areas of regenerating *Leptospermum* shrublands are evidence of previous fires which helped create the current

breaks in the beech forest cover. Sika deer sign was very high here too even though a lot of deer had been taken out of the area recently through DoC undertaking search and destroy deer control together with increased recreational hunting activity. Similarly on Mt Manson, beech forest heath was examined and some of the exclosure plots visited. Hare numbers too are quite high throughout this country and browse pressure above the tree line is obvious in places.

Looking at the impact of sika on these forest was one of the objectives of this trip. In some areas the sika browse is so intense that not only are all the palatable species removed from the undergrowth but all the beech saplings as well. The natural stand dynamics of mountain beech relies on these 'advance growth' saplings to provide new cohorts of beech trees to replace the adults when they invariably synchronously die back over sometimes quite large areas. These dieback events triggered by storm damage, drought or other disturbance, commonly occur in cycles of around 80-120 years but if the saplings are missing then, instead of beech regenerating, the areas are taken over by grasses or unpalatable shrubs. DoC is currently investigating the extent of this problem using exclosure and other monitoring plots and will use this information as the basis for a long term management plan for sika control.



Peter contemplates his efforts from the ridge above Kiwi Saddle.

The *Pinus contorta* is getting a bit thick on Kuripapango mountain and could certainly do with some control. Fortunately not too many contorta were encountered elsewhere along the route from the Desert Road and 'pullable' ones did not survive being spotted.

Peter van Essen

Round Bush and Tangimoana - 13 April 2001

The Manawatu Bot Soccers hosted the Wellington Botanical Society at the beginning of their Easter trip to the Wanganui region. We met up with these keen folk outside Foxton, and then headed for an excursion to Round Bush (Omarapapaku), under the guidance of local DoC officer, Vivienne Nicholls. Vivienne is involved in restoration of the margins of the bush which were formerly planted in pines on the dune ridges, and we inspected the logging and spontaneous regeneration, then onto the swamp (mainly flax and raupo), and the remnant of swamp forest, an impressive stand of kahikatea, with masses of pukatea, both seedlings and adults, in the swale between the dune ridges. The forest has had a drainage channel cut through it to prevent water ponding on the paddocks upstream of the bush, and this has resulted in a sad lowering of the water table inside the bush, exposing many of the buttress roots of the canopy trees and probably doing little to contribute to their long-term viability.

Our next stop was the Tangimoana dune reserve recently established by DoC. We inspected the flora of the sand plains, dune faces covered in shrubs, and fore dunes. The general flora of the dune wetlands has declined in quality in the last few years, partly due to the omnipresent 4WD fans, but also to wetlands drying out. Some of the wetland specialist species may be lost from this reserve, unless more proactive management is undertaken. An example of such potential management was next inspected - some ephemeral wetlands constructed by Nick (and a bulldozer), which offer habitats closer to the water table. Here we could admire the few remaining plants of *Eleocharis neozelandica* left on the Manawatu coast - an unprepossessing species for the true connoisseur.

Jill Rapson

Native plants of the Ecology Courtyard - 5 May 2001

This morning workshop was a chance for members to get together and learn to identify a few of the odder native plants. There is an extensive planting of strange, wirey, rare or just plain peculiar plants in the Ecology courtyard at Massey University, and a planting layout plan is being compiled. However, names of some species were unknown, and some members spent time in the adjacent lab wrestling with keys and microscopes to name the various specimens. In the end, most of the unknown species were identified, although several coprosmas are being left for a rainy day! *Jill Rapson*

Bogs and Other Wetlands - Jill Rapson - 7 June 2001

Jill's talk was illustrated by slides of a range of local wetlands, but also some from Tierra del Fuego, Tasmania and England. Wetlands are surprisingly difficult to classify into types, but the major distinction currently accepted is between those which are mineral/nutrient rich, and those which are very impoverished nutrient-wise. Ombrotrophic systems receive all their water directly from rainfall, which gives them very few nutrients, and usually a calcium/magnesium ratio of 1 to prove it!

Below is Jill's version of the categorisation proposed by Wheeler and Proctor (2000) in a recent issue of *Journal of Ecology*. Although the term "swamp" is beloved in America, and is usually conjoined to the word "flax" here, it does not represent a special type of wetland, merely a regional variant in classification; its use should remain colloquial.

bog (Hochmoor, högmosse, moss, aapamire, peatland)

- mires influenced solely by water falling onto them as rain or snow
- pH acidic
- oligotrophic (eutropy) - nutrient poor or low productivity
- may be wooded or heath

Examples:

ombrotrophic bog - rain-fed (Ca/Mg ≈1), has rand, lagg and raised dome; blanket bog - bog over undulating terrain; muskeg - frosted bog; palsa - peat bog mound with frozen core; Schwingmoor or scraw (scraugh) - floating bog; Strangmoor - patterned mire or string bog - hummock and hollow relief

fen (Neidermoor)

- mires influenced by water derived from outside their own limits
- pH > 5.5
- oligotrophic (eutropy) - nutrient poor or low productivity
- minerotrophic (geogenous) - water derived from soil and therefore usually nutrient-rich

Examples:

fen carr - fen with woodland; herbaceous fen; lawn - firm, cyperaceous mire; flush - sloping, wet alpine mire; flax swamp

Jill talked a bit about the English fen country (the wooded portions are technically fen carrs), which was so widespread prior to draining in the sixteenth and seventeenth centuries. Wicken Fen, belonging to the National Trust, is the largest of the remnants, and has a high biodiversity, particularly of wet grassland species, including orchids and bulbs.

But the major emphasis of the talk was on bogs, i.e. systems which accumulate peat. New Zealand has a few examples, notably in the lower South Island high country of aapamires, the broad expanses of short wet turf interspersed with pools, usually on gently sloping terrain. The other extensive type of bog in New Zealand is the peatdome, of which fine examples still remain at Whangamarino and Kopuatai in the Waikato. Although apparently flat, these bogs are actually raised ("domed") in the centre, but the dome is often only 1-2m higher than areas close to the edges. But this is enough to prevent water flowing on to the bog, and all water flow is off; hence the water and nutrients can only be added by rainfall (ombrotrophy).

There are two issues of most academic concern with respect to bogs. The first is the creation of these patterns of pools amongst the peat; once formed the pools "behave" in predictable ways, coalescing along the contours of the slopes, and forming concentric bands in domed systems. Studies in the Lammerlaw system indicate various mechanisms by which pools might be initiated. The other major bog issue is how a system ever becomes ombrotrophic in the first place, as this involves a major change in water source, and hence nutrient levels, and also in the species which are adapted to survive on the wetland. Presumably this requires species which are successful ecologically in either mode, but the nature of the switch remains obscure. Obviously there are lots of potential research ideas here, assuming of course, that there are any bogs left to investigate!

Jill Rapson

Opiki Bush - 7 July 2001

A large gathering of members met to inspect this local DoC reserve, which is rather unprepossessing from the outside. It is largely a kahikatea remnant, and even has a number of 10m high pole trees planted by the Forest Service near the road, which present an odd even-aged appearance. The patch is not large, but large enough to get lost in (though all participants were eventually located). Members wandered through, the group becoming increasingly diffuse over time, as we inspected the flora. Ferns were surprisingly abundant, given the dry exposed nature of the bush, but clearly the year was exceptional weather-wise, and the site is adjacent old oxbows of the Manawatu River. German ivy was found extensively in the back portion of the bush, and requires attention, though members did their bit. We also located the matai trees known by Michael Greenwood, but not recorded on the Alan Esler listing for the patch. What was originally a wet grassland area near the road is now reverting to a sedgeland, with young trees invading, so the bush looks to have a good future, assisted by the lack of tracks and its secluded location. A list of fifty species was made, rather small for a remnant of this size.

Jill Rapson

PROGRAMME

Saturday 4 August - Tuapaka Farm bush

Saturday 18 August - Tree planting at Keeble's Bush

Thursday 6 September - Gardens of the world

Jill will take this opportunity to expose members to her slide collection of beautiful gardens of the world including several National Trust properties in England. 7.30pm, Ecology Building.

Saturday 6 October - Genesis Charitable Trust property at Pahiatua

This visit is to a privately owned patch of bush near Tane. We will be able to explore a small patch of regenerating scrub near the road, before walking into a large patch of bush at the back of the property. Limestone cliffs and caves also abound. Departing from Palmy at 9am.

Thursday 1 November - Members' slide evening

A number of members are keen photographers or recorders of nature, but are reticent about their efforts. This meeting slot will be available for members to show their slides, photos or drawings of plants etc.

Saturday 24 November - Work party at Keeble's Bush

What evil and muddy activities does Peter have planned for us this time? Expect plenty of dirt and fun, with many hands making light work. Depart 9am from town.

Thursday 6 December - Patrick Hesp; Bad Dune Boy

In this evening session, Assoc. Prof Patrick Hesp, from Geography at Massey, who is a world expert in coast and dune geomorphology and ecology, will talk on "Environmental changes in the Manawatu dune fields".

Saturday 8 December - Xmas Gathering

This year we will hold our festive pot luck tea at Jill's place, and check on the improvements (!) to the garden. Any time from 7pm on. All welcome.

Tuesday 11 December - Forest and Bird Plant Identification workshop

Join Forest and Birders who will be having their identification skills challenged and expanded by Vivienne Nicholls. Meeting at 7.45 pm in the Salvation Army complex, Princess Street.

Jill Rapson, Ecology, Institute of Natural Resources, Massey University.

■ Canterbury Botanical Society

June 9 - Annual General Meeting 2001

Along with election of the committee the Bledisloe Awards were presented. The senior Award was presented to Colin Burrows in recognition of his long service to botany and conservation, and the other Award was presented in absentia to Jessie Wells for her talk on photosynthesis in Okarito Forest. The meeting concluded with an illustrated talk by Geoff Walls on the natural history of the Chatham Islands and human impact on their ecology.

July Meeting

Colin Burrows discussed plants in Greece, growing at the sites visited, or as decorations on buildings or other items. This was interwoven with an appreciation of Greek culture through the ages, manifest in such structures as temples, fortifications, theatres, churches and beautiful artifacts displayed in museums. Based on slides from trips in spring, the talk began with the Minoan site at Knossos and Doric and Roman remains at Gortyn, with cypresses, old olive trees and colchicums. Wall paintings of papyrus from Thera reflected Minoan trade contacts with Egypt.

On the Greek mainland, beside the citadel at Mycena were examples of macchia scrub, very common in the hill country, through frequent fire and grazing of pine and evergreen oak woodland. Among the plants were kermes oak (a holly-leaved shrub), juniper and a "divaricate", small spiny shrub, *Sarcopeterium*, a relative of *Acaena*.

In Athens, with its many well-known classical Greek and Roman remains, around the Acropolis are plantings of olives, holm oaks (*Quercus ilex*), bays, cypresses and myrtles. The more open Agora has similar plantings. The olive, dedicated to the goddess Athena, grows wild in hillside scrub, as do holm oaks and *Pistacia* species, each with some distinction between juvenile and adult form. Wild grapes, wheat and oats are also evident in places. At the temple of Olympian Zeus stylised *Acanthus* leaves cap the columns. Nearby a *Polygonum* vine resembled *Muehlenbeckia australis*.

Near the elegant temple of Poseidon at Cap Sounion grew interesting shrubs and wildflowers. *Ephedra* is a gymnosperm with red fruit. A spinous legume, *Calicotome*, looked very like *Discaria*. Innocent-looking opium poppies adorned a cliff ledge on Hydra.

At Nauplia, with its Crusader and Venetian castles, were wheat fields scarlet with field poppies. Among the real Greek trees around the fine theatre at Epidaurus grew some strangers, for example a *Pittosporum* species from Australia. Other examples of Australian transplants were numerous *Eremophila* shrubs (close relatives of ngaio, *Myoporum*) near the Acropolis in Athens. The only New Zealand plant seen was a solitary *Cordyline australis*, grown in a pot, at Delphi.

Sparta, one of the wetter parts of Greece, had beautiful wooded areas. On the hillside to the north, at Mistra, among Byzantine ruins were the yellow heads of the umbellifer *Ferula* (famous in the legend of Prometheus and Dionysian revels) as well as ivy and *Centranthus*.

Olympia is a beautiful open area among pine woods, with poplars, plane trees and flowering Judas trees. Scarlet *Anemone* grow wild around the stadion and *Cerinth* is a roadside weed.

The most magnificent place, for scenery, antiquities and flowers, is Delphi. Olive groves clothe the valley below. Pines and almonds grow near the temple of Apollo, and the theatre and stadion. On slopes above the little village a kaleidoscopic array of spring flowers graced the grassy pastures and the rocky areas at the base of towering limestone cliffs. Among them were yellow *Aster*, pink *Cistus*, yellow *Phlomis* and *Onosma*, feathery heads of *Trifolium stellatum*, pink *Coronilla*, purple *Anchusa*, white *Tordylium* and many others.

Colin Burrows

July Field Trip

Twelve members visited the Wai-ora Trust, off Harewood Road, on a fine, relatively mild day. We were hosted by the chairman Rob Blakley and Brian Cosslett who belongs to our society. Wai-ora is a Christian charitable trust that provides practical training in horticulture to young people who are having problems in finding a satisfactory direction in life. Activities are strongly centred on propagating native plants. These are collected and raised from local sources, preferably as seed, and used for amenity and restorative planting around Christchurch and Canterbury, which is carried out in cooperation with local authorities, especially Environment Canterbury. The Trust also operates commercially through a subsidiary company that provides environmental and landscaping advice and plants to private businesses.

During the morning we were shown the propagating activities at the Trust, and the strong emphasis placed on conservation of energy, soil and water, and on organic fertilising and pest control. At lunch time we were shown a video describing the work of the Trust, and in the afternoon drove to the north bank of the Waimakariri River, and from there followed the walkway down to the confluence with the Kaiapoi River. This area supports an almost continuous stand of mature willows, but for the last seven years the Trust and Environment Canterbury have been establishing native plants, with the objective of restoring the original riparian forest. The success and fast growth of the kahikatea and lowland ribbonwood is particularly impressive. We were concerned, however, to see that the northern lacebarks (*Hoheria populnea* and/or *H. sexstylosa*) have also been planted. In the Canterbury context these are, in effect, aggressive exotic weeds, and we have supported the Trust by writing to Environment Canterbury urging that they be removed and be replaced by the local *H. angustifolia*.
Peter Wardle

August Meeting

Pauline Syrett, programme leader of the Invasive Weeds Programme, and entomologist, at Landcare Research, Lincoln presented a talk entitled "Weed Biological Control Agents as Plant Taxonomists". She began by illustrating two examples of very effective biological control, one in Australia in which *Cactoblastis cactorum* reduced rampant populations of prickly pear (*Opuntia stricta*) to scattered individuals, and the other in New Zealand where concentrations of the beetle *Chrysolina hyperici* advanced along broad fronts into infestations of St Johns wort (*Hypericum perforatum*), effecting total defoliation. Next she discussed the usual agents of biological control of weeds, namely insects belonging to the psyllid, aphid, scale and beetle groups and larval stages of moths and flies. She pointed out that plants in their original habitats support a wide range of insect predators, some of which are quite specific to particular plant species and others being more or less wide-ranging. Obviously, the former are more attractive as potential introductions as they are less likely to attack non-target species. In New Zealand, non-target species include all native plants, economic plants and species valued in horticulture. Wherever possible, insects being considered for introduction are tested on New Zealand plants grown specially at research stations in the country of origin of the weed, such as the UK, France, or Switzerland.

Pauline then discussed her own work on potential control agents for Scotch broom (*Cytisus scoparius*). This involved a prolonged visit to south-west Europe (Spain, Portugal and France) to localities with diverse assemblages of *Cytisus* species including *C. scoparius*, and related genera such as *Retama* and *Genista*. Apparently the weather was often quite miserable, but as an audience we were able to enjoy the beauty of these shrubs in flower. Samples were collected from *C. scoparius* and related plants at the same site so that comparisons of the differing faunas could be made, and information gained on the host range of some of the potential insect control agents. Adult specimens are relatively easily identified, but immature stages were reared to adult with assistance from local entomologists. Several promising insects were identified, and laboratory tests were conducted with these species to see whether they fed and developed on plants besides *C. scoparius*. Conceptually this was assisted by an ingenious display of taxonomic relations within various subfamilies of legumes with advanced groups spread around the rim of a wheel in accordance with their degree of relatedness, the more ancestral groups being placed towards the hub. *Pirapion immune* (a weevil) mines the stems of broom, and initially seemed promising in that although it attacked *Cytisus*, it showed no interest in the *Carmichaelia* group (native brooms). However, small numbers of female beetles laid eggs on kowhai, *Sophora microphylla*, and larvae were able to develop to adult on this species. This important native plant is in the apparently less similar but more 'ancestral' group Sophorae, and therefore *P. immune* had to be rejected as a possibility for introduction to New

Zealand. Fortunately the visit to Spain also identified other promising species that are host-specific to Scotch broom.

Although biological control agents may reduce target species to very low levels, there are always a few plants that survive; a seemingly total elimination of ragwort (*Senecio jacobaea*) near Hanmer by ragwort flea beetles and caterpillars of cinnabar moth provided an example. Finally, Pauline pointed out that the research entails a large element of risk assessment, and that if we are totally adverse to accepting some risk of damage to native plants by agents of biological control, we may incur greater risks of more severe damage being caused through competition with introduced plants.

August Field Trip

Ten members enjoyed a tour of Otukaikino Wetland just north of Belfast in the angle between the motorway and the old highway north. The wetland is managed by a Trust with members from DoC and Lamb and Hayward, whose firm donates money for a native plant with every funeral arranged. The site manager from DoC, Tony Woods, came with us using vantage points to explain the work of restoration. The 13 ha swamp fed by internal springs was a dense stand of grey willow (*Salix cinerea*) surrounded by a ring of tall crack willow (*Salix fragilis*) with understorey of *Carex secta*, *Blechnum novae-zelandiae*, flax and cabbage trees. Throughout the 1990's Tony has managed the removal of grey willow with a dedicated volunteer Kevin, and periodic detention centre workers. Upper branches are dragged out and mechanically munched and used for mulch on marginal plantings. Trunks are sawn for firewood. A substantial board walk with seats has been constructed under very difficult conditions of deep water, willow root rafts, and deep mud. This allowed us to circumnavigate the wetland and see the extensive planting of local natives, reflecting pools, and invigoration of sedges and *Blechnum*. One concern is the rapid spread of raupo (*Typha orientalis*) into areas of open water. Tony is working on the best method of control for this.

Bryony Macmillan

FUTURE EVENTS

October	Susan Wiser - Tongatapu forest remnants	Field trip to be decided
November	Mathew Turnbull - divaricating shrubs	Spring Camp (see below)
December	Student projects	Field trip to Glentui

SPRING CAMP

Friday 9 to Sunday 11 November in the Geraldine district, South Canterbury. Accommodation is at the Glenburn Youth Camp, between Orari Gorge and Waihi Gorge. It has recently been refurbished and holds up to 40 people. \$7 per night. We plan to visit recent QEII covenants, and reserves, including those at Te Moana, Pleasant Valley, Orari River and Waihi Bush. Food for Saturday and Sunday will be provided. Bookings to Bryony Macmillan, 21 Bannister Place, Christchurch 8005, Ph (03) 351 9241 or 351 2886 evenings.

SUMMER CAMP

Sunday 6 to Sunday 13 January 2002 at Victoria University Geology Department Field Station, Onekaka, Golden Bay. It is an old, three-bedroom house with bunks and mattresses for 22 people. With only two showers and toilets and a small kitchen numbers will be limited to 28, allowing some to camp or caravan on the flat grass nearby. Fee \$5 per night. Bookings open soon.

Secretary: Roger Keey, PO Box 8212, Riccarton, Christchurch. Ph: (03) 364 2409
Email: wrtc@cape.canterbury.ac.nz

■ Botanical Society of Otago

MEETING REPORTS

The last two meetings have been characterised by superb photography, allowing us to experience close-up the botany of remote places, and to compare and contrast the plants of two interesting areas connected by a common Gondwanic origin.

In June Kelvin Lloyd treated us to a fabulous display of his "Fabulous Fiordland" slides, transporting us to pristine areas of native forest, tussock grasslands and alpine plant communities, which are inaccessible to all but the most dedicated botanist. The soaring mountains, misty vistas, hidden lakes and clear streams formed an impressive backdrop to the distinctively diverse *Chionochloa* tussocks, the delicate silver and white *Celmisia* daisies and the evocative moss and lichen encrusted forests. Thank you, Kelvin, for sharing your remotest explorations with us.

Then in July Neill Simpson immersed us in the colourful world of "Alpine and other spectacular plants from Chile and Argentina". The snow-capped volcanoes, the glaciers and alpine lakes were reminiscent of New Zealand, as were the evergreen lowland *Nothofagus* beech forests, but the monkey puzzle trees, *Araucaria araucana*, towering above the beech, and the cold-tolerant, large-leaved, deciduous *Nothofagus antarctica*, with its brilliant autumn colours at tree line, were distinctly South American. As were all the colourful flowers – amazingly intense purple, yellow and orange oxalis, red mistletoe, *Tristerix aphyllus*, growing incongruously on a cactus, whole fields of bright calceolaria, the large flowered scree *Ranunculus semiverticillatus* with broccoli-like leaves, and the striking metallic blue spikes of the *Puya berteroniana*. Thank you, Neill, for taking us on a dazzling botanical tour.

TRIP REPORTS

Otago Peninsula: Portobello Peninsula and Varley's Hill

The last Sunday in April a small group explored three reserves on the Otago Peninsula. In the morning Kath Dickinson led us round two bush remnants near the tip of the Portobello Peninsula. Closest to the marine aquarium, and facing north-west, is the University owned Lister Reserve, named in memory of Ron Lister, a previous professor of Geography. Here we were momentarily stumped by the odd appearance of a small-leaved milk tree, *Streblus heterophyllus* and a prostrate native celery, *Apium prostratum*. This reserve has been fenced since Peter Johnson's comprehensive survey of pockets of native vegetation on the Otago Peninsula, and it was interesting to note the return of a few ferns such as *Blechnum fluviatile* and others since the original survey. Sadly, the fence is not stock-proof, or there may well have been more. The Library Reserve, on the south-western slope, is still grazed by sheep and mainly larger shrubs and trees survive there.

The resurgence of ferns after complete exclusion of stock was very evident at Varley's Hill, by Hoopers Inlet, which we visited in the afternoon. Moira Parker has been monitoring their reappearance in their Q.E.II covenanted area of regenerating bush. Moira has noted 7 additional fern species since 1993, bringing the total of ferns recorded there to 23. The Varley's Hill covenant also contained some small-leaved milk trees, another puzzling small-leaved scrambling herb of the celery family, *Scandia geniculata*, and several species of *Acaena*, some of which were keyed out on Moira and John's kitchen table, using Kelvin's useful *Acaena* key.

Waipori Gorge fungal foray

On a sunny Saturday in early May three carloads of would-be mycologists set off to Waipori Gorge on a fungal foray ably led by David Orlovich. The Government Track beckoned with fruiting bodies of all shapes, sizes and colours, from the tiny, delicate parasols of *Mycena* species on the forest floor to a clump of large *Armillaria* protruding from a live tree trunk beside the track. There were several opportunities to compare the confusingly similar red stalked fungus, *Weraroa erythrocephala* with the identically coloured red pouch fungus, *Paurocotylis pila*, and to wonder how this parallel evolution came about, when *Weraroa* is from the phylum Basidiomycota while *Paurocotylis* is an ascomycete. A red tentacled stinkhorn, *Aseröe rubra* was another find by the track, but the sought-after *Nothofagus* beech forest, with its associated mycorrhizal communities, kept receding in to the distance. Digital cameras were kept busy recording the varied collections, which were taken back to the OU Botany Department laboratory after lunch for further identification and drying for the OTA herbarium collection.

There is so much still to see and learn that we look forward to a visit to the elusive beech forest next fruiting season, especially if the rich variety seen on the relatively un-grazed floor of Birch Island a week later is anything to go by.

Medicinal waters of Wairongoa Springs

In late June two carloads drove out to Wairongoa Springs, which is nestled up by the hills on the north west side of the Taieri Plains. There we were greeted cordially by our host and guide, Austen Banks. He told us that the Maori name for the area translates as 'medicine water', after the carbonated mineral springs there, which were the basis for the Thomson bottled drinks empire and presumably one reason that John Scott Thomson could afford to spend so much time collecting lichens in the 1930s. The main Thomson family home was further out on the plains, but one of John's bachelor brothers had a passion for planting trees and had established a very eclectic collection around the springs in the first half of last century.

On the upper slopes were tall wattles and larches, with an understorey of native vegetation, predominantly mahoe, *Melicytus ramiflorus* and *Pittosporum tenuifolium*, with a ground cover of ferns such as *Asplenium bulbiferum* and hound's tongue, *Microsorium pustulatum*. A patch of delicate *Blechnum chambersii* fern was thriving under an overhang, near some planted large-leaved rangiora, *Brachyglottis repanda* and healthy *Coprosma grandifolia*. Below the spring was a row of now magnificent red beech, *Nothofagus fusca*, with no sign of regeneration underneath. Lower still were slower growing rimu, *Dacrydium cupressinum*, amidst a large grove of kauri, *Agathis australis*, which were planted in the 1950s. Some of these kauri trees looked to be over 50 feet tall - a rather surprising rate of growth for so far south. Is this more evidence for global warming, or just a very favourable microclimate? The microclimate on the sheltered, northerly slope above the kauri grove is such that figs and lemons flourish by the homestead, where we were shown the window of the bedroom that actor Sam Neill occupied in his younger days.

The water from the spring was surprisingly delicious and refreshing and bubbled pleasantly on the tongue. It was even better with a dash of whiskey provided by our generous host. The spring rose deep in the plantation, and had none of the chill of the surface water. It was a surprise to come across the rather mausoleum-like brick tower, which had been built to protect the source from vandals, looming up out of the trees. Also looking mysterious and incongruous now in odd patches among all the trees were the crumbling stone arches of an old fernery and the remains of two very ornate fountains, their elegant swans and curling metal flowers now wetted only by the rain. We were shown the remains of the collecting tank for the spring water, where a complicated system of pulleys kept a lid over the surface so the bubbles would not escape before bottling. Also the bottling shed, now doing service as a storage and wool shed, with some of the old wooden Thomson cordial crates now acting as shelf-supports.

Hidden treasures of the Dunedin Botanic Garden

At the end of July a small group of us were lucky enough to be given an insider's tour of the Dunedin Botanic Garden by Tom Myers. First stop was the impressive Rene Orchiston collection of traditional weaving flax varieties (*Phormium*), all with their Maori names and differing colours, textures and traditional uses, and not yet listed on the visitor's guide. We walked on past the native wetland area, which abounded in sedges and rushes, and then carried on along the Lovelock bush track, where here and there were odd out-of-range kauri, *Agathis australis* and rewarewa (New Zealand honeysuckle, *Knightia excelsa*), that caught the eye amidst the second growth bush, once they were pointed out.

The track led us across the road to the welcome warmth of the propagation house, where we could marvel at strange plants from around the world, such as cycad palms of ancient lineage, insectivorous pitcher plants, sticky *Drosera* sundews, prickly cacti and various thorny plants that are so under-represented in New Zealand.

Tom told us about their Integrated Plant Management System, which aims to maintain plant health by using bio-controls and rapid removal of sick plants to minimise reliance on chemical sprays. The conversation turned to the consequences of ripening hormones that are sprayed over pea, barley and other crops so that they can be harvested in one swoop. The residue left on fresh pea straw used as mulch can cause garden plants to bolt and go to seed, so the trick is to let straw for mulching weather for a year before using on the garden.

The finishing treat was having Tom explain the International Seed Exchange programme that operates between botanic gardens around the world, and being shown the seeds and list of 100 species he had prepared for exchange. Interestingly, two of the species most requested from overseas are our tree fuchsia, *Fuchsia excorticata* and our fierce stinging nettle, *Urtica ferox*, both unusual in their genera in having tree forms.

PROGRAMME

12th September, Wed, 12 noon.

Combined BSO/ Otago University Botany Dept seminar. Prof Alan Mark's illustrated talk on Tibet, Mongolia and Russian Caucasus: Seven weeks with local ecologists. Union St Lecture theatre, upstairs, corner of Union St. West & Gt King St.

26th September, Wed, 7 pm.

Barbara Anderson talks on her botanical experiences in Patagonia. Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.

20th October, Sat, 1.30 pm.

Tour of Emeritus Prof. Geoff Baylis' Garden. 'Threave', 367 High St. A chance to have a look in later spring at this special garden with a history of nearly a century of extensive plantings of both exotic and native treasures, including rare endemics from the Three Kings islands.

24th October, Wed, 7 pm.

Sue Bennett talks on Botanical Conservation Volunteer Work on Raoul Island. Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.

15th November, Thurs, 7 pm.

Dr Jill Rapson, Massey University, talks on Barrier Islands and Coromandel almost-island. Seminar room, Zoology Annexe, Gt King St, car park by Dental School. Side door behind the Glassblowing Unit. Supper.

18th November, Sun, 9 am. Anni Watkins will lead a full day workshop on grasses. Meet in the Botany Dept carpark, 464 Gt King St.

Wellington Botanical Society Summer Field Trip, 27 Dec – 5 Jan, Twizel area. Keep these dates free. Otago members are welcome to join the Wellington Botanical Society on their summer field trip. Based at Twizel and Lake Ohau, which should provide good access to alpine plants at surrounding skifields and alpine areas, with some interesting valleys to explore at the heads of the lake. Registration forms from Julia White, Wellington Botanical Society, Box 10-412, Wellington, email: alanwhite@the.net.nz

Chairman: Bastow Wilson Email: bastow@otago.ac.nz

CONFERENCE ANNOUNCEMENT

New Zealand seeds - their morphology, ecology and use as indicators

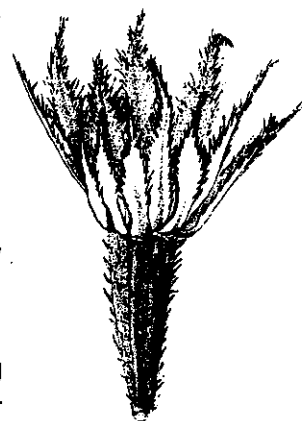
A symposium to be held at Lincoln University, Canterbury, 29 November 2001

Organised by: Landcare Research and the New Zealand Botanical Society

Symposium objective

Landcare Research and the New Zealand Botanical Society are organising a one-day symposium to mark the launch of "Seeds of New Zealand - Gymnosperms and Dicotyledons" by Colin Webb and Margaret Simpson.

The intention is to have a meeting of New Zealand botanists interested in seeds in the broad sense.



A seed is the ripened fertilised ovule of a plant, containing the embryo or rudimentary plant and often some nutritive tissue. Seeds, or fruits of various types containing seeds, are the means by which most plants disperse. To remain alive during dispersal, seeds and fruits usually have hardened outer layers to resist weathering, digestion or desiccation. These hard outer layers survive long after most other plant parts have deteriorated, providing clues as macrofossils to past vegetation, indicators in gizzard contents or faeces to animal diets, and information about past cultures through their presence at archaeological sites. In addition, because seeds are relatively conservative structures in terms of their evolutionary diversification, they provide a wealth of information for plant identification and classification - the critical underpinning science for conservation of biodiversity.

Registration Cost

The registration costs have been set at \$30 per person or \$20 per student (with student I.D.) for early registration before October 26th 2001. After that date registration fees will be \$35 per person and \$25 per student.

Venue

The symposium will be held at Lincoln University. A campus map will be included in a package sent out to all delegates.

Programme topics

- 1 - Germination, physiology
- 2 - Seed dispersal
- 3 - Seed morphology
- 4 - Biosecurity
- 5 - Macrofossils
- 6 - Seeds and their use as indicators of diet
- 7 - The beauty of seeds
- 8 - Conservation
- 9 - Seeds and forensic science

For further information please contact:

A.McGlinchy
Seed Symposium
Landcare Research
PO Box 69
Lincoln 8152

E-mail: mcglinchya@landcare.cri.nz
Fax: (+64 3) 325 2418

Associated Events

The symposium is to be held in conjunction with a number of events:

- Wednesday, 28 November 2001, 3 pm at Landcare Research: Celebration of the "Allan Herbarium" - naming of the herbarium in honour of H. H. Allan and his contribution to New Zealand botany.
- Wednesday, 28 November 2001, 6 pm at the Canterbury Museum: Launch of "Seeds of New Zealand - Gymnosperms and Dicotyledons" by Colin Webb and Margaret Simpson.
- Thursday, 29 November 2001, 4.30 pm at Lincoln University: General meeting of the New Zealand Botanical Society.

COURSES

■ Pacific Field Trip On Timetable

Field trips usually involve an indecently early morning and a long bus trip, but for 30 Waikato University students this summer's field trip promises to be a whole lot more appealing. Norfolk Island is the venue for a two week field trip for students in a new Biological Sciences Summer School course, "Flora of the Pacific".

Course co-ordinator Dr Chrissen Gemmill explains the students in the second year course will first spend a week on campus in intensive study of the plants they can expect to see. Then, in late February, they will head for the Pacific to study and identify the plants in their original habitat. Later offerings of the course are likely to visit Rarotonga and the Hawaiian Islands.

The course is a response to the changing job market for graduates, so degree students will be given enrolment priority, but specialists employed by organisations such as DOC and Environment Waikato, and the general public are also likely to be interested in the course.

Specialist knowledge of Pacific plants is useful not only for the islands, but for conservation and biosecurity issues in New Zealand as well. For instance, Dr Gemmill points out, projects to conserve and restore gully areas in Hamilton rely on identification of plants and knowledge of their origins. Conservation of New Zealand flora can be helped by an understanding of Pacific flora, especially of invasive plants which threaten native flora. "Before you can undertake restoration projects, you need to be able to describe and identify the plants existing in the area."

Many plants regarded as natives arrived here by natural processes, adapting to and being accommodated in the ecosystem. The rapid arrival of new species through human intervention, however, poses a threat to New Zealand's biosecurity and economy. To protect those interests, specialists are needed who can identify plants with a potential to invade New Zealand habitats.

The students enrolling in this course will benefit from the unique experience of Waikato's course presenters, all of whom actively conduct research in Pacific biosystemics and the ecology of Pacific plants. In time, the students may become specialists themselves.

For further information contact,

Dr Chrissen Gemmill
Biological Sciences
The University of Waikato
Phone (07) 838 4148

■ Interested in studying vegetation?

The Ecology Group at Massey University is offering a new summer block course in vegetation studies. It will operate for two weeks each February, at different, vegetationally interesting, locations around New Zealand. This is a third year paper, but does not need to be taken as part of a degree, and is of interest to all those who conduct or assess or interpret vegetation monitoring and science.

The paper covers practical vegetation science in the New Zealand environment, with emphasis on understanding the dynamics of native systems, and their responses to disturbance. Topics covered include vegetation types and distribution in New Zealand, vegetation monitoring and analysis, vegetation processes, and recording and reporting techniques. Assessment is entirely on location.

While a background in plant biology is essential, as is broad knowledge of New Zealand's plants and vegetation (topics covered in Massey University papers 120.101 Biology of Plants and 120.218 Flora of New Zealand), those with a good general botanical background, knowledge of native plants, and the ability

to cope with final year tertiary studies are warmly encouraged. Please check with the course supervisors about your suitability.

About 30 hours of preparatory reading, assignment preparation, and plant species identification will need to be completed in advance of the course. In 2002 the course runs from 7-20 February, in Nelson and Marlborough. In 2003 the course will run from 10-22 February, visiting Pureora and Coromandel. Normal course fees and trip costs apply.

Contact **Jill Rapson or Peter van Essen**. Phone 06/ 350 5799 Ext 7963 (Massey). Email contact is G.Rapson@massey.ac.nz

RESEARCH REQUESTS

■ Plant biosystematics research in New Zealand

Ilse Breitwieser, Landcare Research, PO Box 69, Lincoln 8152.

The New Zealand National Herbarium Network (NZNHN) decided at its last annual meeting at Rotorua, 4 November 2000, to update biannually its information on plant biosystematics research, particularly so that the "...members of the New Zealand Herbarium Network will see to the security of vouchers of unnamed taxa to ensure protection of the interests of the taxonomists who have declared that they will describe any of these taxa". (12th Annual Meeting held at Herbarium MPN, Massey University, 23 November 1994).

Previous compilations of plant biosystematics research (Breitwieser & Heenan 1997; Parsons 1999) have proved to be very useful for all herbarium curators. Herbarium curators would like to ensure that herbarium material required for studies by New Zealand scientists are not sent overseas. As agreed at the last New Zealand National Herbarium Network meeting, I will assemble the information. It will be published in the New Zealand Botanical Society Newsletter. Therefore, all researchers in New Zealand are urged to send me the following information:

- study group (genus or species),
- kind of research,
- start and completion date,
- name and address.

Please send your information to **Ilse Breitwieser**, Landcare Research, PO Box 69, Lincoln 8152. Fax 03-325-2418. Email: breitwieseri@landcare.cri.nz

References

- Breitwieser, I.; Heenan, P. B. 1997: Plant biosystematics research in New Zealand. *New Zealand Botanical Society Newsletter* 48 (June): 6-7.
- Parsons, M. 1999: Plant biosystematics research in New Zealand. *New Zealand Botanical Society Newsletter* 55 (March): 6-9.

■ Threatened plants list

Rod Hitchmough, Biodiversity Recovery Unit, DoC, P O Box 10-420, Wellington

The Department of Conservation has recently developed a new system for classifying organisms according to their risk of extinction (Molloy et al. unpublished), which covers all plants, animals, and fungi. For vascular plants, it will update and replace both the existing threatened plants list and the conservation

priority listing of Molloy & Davis (1992, 1994). The system will allow the classification of conservation status/risk of extinction of all organisms known to occur in a wild state in New Zealand. Endemics, non-endemic natives, migrants, vagrants, and introduced and naturalised species can all be included. It will be an accurate, constantly-updateable database which will be a resource for priority setting, among other functions, rather than a priority list in itself. Taxa need not be formally described to be included, but those not formally named, and named taxa of disputed validity will be listed in a separate database to those with widely accepted, published scientific names. This does not mean that they will receive lower priority for action. The list will be updated at least every 3 years. The lists will be available for use by anyone interested, and when complete will be accessible through the DOC web-site:

<http://www.doc.govt.nz/index.htm>

We now wish to gather data to begin the classification of species under this system. Because a full listing for many groups would include unmanageably large numbers of species, at this stage we are requesting information on taxa which are known to be threatened in some way, or poorly known and potentially threatened. **As a threatened plant list already exists (de Lange et al. 1999), and all taxa already listed will be reviewed, for vascular plants we are requesting only suggestions for new additions to the list, with supporting information, or new, unpublished and previously unavailable information on plants on the existing list.**

A small expert panel will meet on 15-19 October to classify all species nominated as threatened or data deficient. We therefore require responses to this questionnaire by 10 October 2001 at the latest. I hope most Botanical Society members will have already been contacted through regional botanical societies or professional contacts, but if you haven't already seen it and wish to contribute, please contact me (details below) for copies of the questionnaire and any assistance or clarification needed.

Rod Hitchmough
Biodiversity Recovery Unit
Department of Conservation
P O Box 10-420
Wellington

Phone (04) 471 3249
Fax (04) 471 3279
E-mail rhitchmough@doc.govt.nz

References

- de Lange, P. J.; Heenan, P. B.; Given, D. R.; Norton, D. A.; Ogle, C. C.; Johnson, P. N.; Cameron, E. K. 1999: Threatened and uncommon plants of New Zealand. *New Zealand journal of botany* 37: 603-628.
- Molloy, J.; Davis, A. 1992: Setting priorities for the conservation of New Zealand's threatened plants and animals. Department of Conservation, Wellington. (revised in 1994)
- Molloy, J.; Bell, B.; Clout, M.; de Lange, P.; Gibbs, G.; Given, D.; Norton, D.; Smith, N.; Stephens, T. unpublished: Classifying species according to threat of extinction. (This classification system has been formally approved, but the document will not be published until the first classified listing of threatened taxa is available).

NOTES AND REPORTS

Award Made

■ Botanical Artist Honoured

Congratulations to Audrey Eagle, who was made a well-deserved Companion of the New Zealand Order of Merit in the recent Queen's Birthday Honours list, for her services to botanical art.

Audrey has been producing colour paintings of New Zealand's native trees and shrubs for 49 years. Her first series of 228 botanical paintings were published as 'Eagle's Trees and Shrubs of New Zealand' in 1975. The second series, published in 1982, included 405 botanical paintings. The paintings are meticulous in their precise detail and accuracy, drawing on skills refined from her training and work as an electrical engineering artist.

Illustrations of rare species and those of local distribution make the second series of particular significance to the professional botanist as well as the amateur. Noted botanist Tony Druce, of the Botany Division of the former DSIR, to whom this second series is dedicated, was a key figure in contributing to the taxonomic and distribution details.

Both books were awarded prizes (third in 1976 and second in 1983) in the then Watties Book of the Year Award. In 1986 'Eagle's Trees and Shrubs of New Zealand Volumes I and II', a revised edition of the 1975 and 1982 books, was published. It is one of the most-thumbed reference books in the University of Otago Botany Department library, and the most on demand on Botanical Society long summer trips.

Now Audrey is putting the finishing touches to the 160 new illustrations for what was to have been her third book. These illustrations are now going to be incorporated into two newly designed books, which will include up-dated versions of her two original books. The result will be illustrations of about 790 plants, with all species in a genus together.

Once the artwork and writing is finalised, financial assistance is needed to cover the cost of preparing 560 plates for publication. Hopefully having CNZM after her name will speed the progress of an eagerly awaited botanical companion. The books are expected to be on sale in 2003.

Allison Knight, Newsletter Editor, Botanical Society of Otago

Note

■ **Dobbie Fern Exhibition**

Just opened at the Auckland Museum and due to run for 12 months: 'Ferns & Folk'. This new exhibition features the works of Herbert B. Dobbie (1852-1940), fern enthusiast, whose major work 'New Zealand Ferns' was the fern bible for nearly seven decades for NZ botanists.

An exhibition centrepiece, a bookcase base, crafted from native timber and extensively carved with fern and other flora motifs by Dobbie was recently purchased with financial assistance from the Museum Institute and the Dobbie family.

Dobbie travelled extensively around NZ on his penny-farthing bicycle (see McCraw in *NZJBot* 26: 171-178, 1988), published his 'blue book' on NZ ferns in 1880, worked on the Government railways, established one of the first NZ citrus orchards in Whangarei, finally settled in Market Road, Epsom, where he established his fernery (house demolished in 1991 by the expanding St Cuthbert's College). It was here in retirement that he produced his well-remembered 'NZ ferns' (1921), which culminated in 1963 with the 6th edition by Marguerite Crookes.

The show is drawn mainly from the Museum's collections and includes early illustrations and collections of ferns (including the Victoriana ferns books with decoratively carved covers), photographs from the Dobbie family album, and moves through to the use of the fern as a decorative motive and emblem in New Zealand.

Ewen Cameron, Curator of Botany, Auckland Museum, Private Bag 92018, Auckland

Research Report

■ Silver tussock (*Poa cita*) in the south of Rangitikei Ecological District, near Marton.

Colin Ogle, 22 Forres Street, Wanganui. Email: robcol.ogle@xtra.co.nz

Sometimes a patch of native vegetation seems to be there simply to challenge our imagination. Is it a remnant of 'typical' natural vegetation of the area? If so, how and why did it survive the impacts of land development all around it? Alternatively, did it remain because it was 'different' from its surroundings, as often happens with wetlands? Perhaps it's not a remnant of anything, but a collection of native plants that invaded the site after human disturbance of the land? Or it might even be a group of planted specimens (something that our descendants will find all around the country, following the current enthusiasm for revegetation projects). These and other questions came to mind in March 2001 when we looked at a patch of silver tussocks (*Poa cita*) during the Wanganui Botanical Group's visit to 'Tyrone' farm, in Rangitikei Ecological District, northwest of Marton.

Silver tussock is a plant of open, very well drained sites with relatively high fertility and subject to regular disturbance. Shingle riverbeds and fans, screes, rocky hill-slopes and cliffs are typical sites for it. At first sight, the 'Tyrone' site didn't match up. I was so intrigued following the Botanical Group's quick look that I returned to Tyrone's tussockland on 9 April 2001, in order to explore it more thoroughly.

Silver tussock at 'Tyrone'

Silver tussock occurs over some 6.3 ha of pasture on a steep hill slope with a south and southwest aspect, at about 180-210 m a.s.l. It is centred on NZMS260/Sheet S22/115333. The small stream at the foot of the slope is one of a series of parallel streams that run northwest-by-west to the Turakina River. Each lies in a narrow, V-shaped, mudstone valley, about 100 m deep. The small stream channel below the tussock slopes has some stones, but it is not braided and there are no riparian gravel areas. Between the tussocks are several patches of exposed bare mudstone but most of the thin soil layer appears to be a sandy loess or clay. Embedded pebbles and stones were probably deposited by the stream, before it cut down to its present level.

A 30% cover of silver tussock was estimated from 40 points along two parallel transects up the slope. The cover values of other species on the transects were 27.5% browntop, 20% other pasture grasses, 10% bare ground and litter, 7.5% flatweeds, 2.5% *Juncus gregiflorus*, 2.5% white clover. Two 10 m x 10 m plots were selected subjectively as being places with what seemed to be the highest densities of silver tussocks. These gave counts of 49 and 57 separate silver tussocks per 100m². From a list made of all species within the bounds of the silver tussock patch (Appendix 1), several species can be identified as non-forest species that might have occurred in natural tussockland, or in shrubland with tussocks, in the past. These include *Epilobium alsinoides*, *Geranium sessiliflorum*, *Rytidosperma unarede*, *Carex breviculmis*, *Dichelachne crinita*, *Lepidosperma australe*, *Leptostigma setulosum* [= *Nertera setulosa*]. Several of these are quite rare in the district, too.

Discussion

The 'Tyrone' tussockland is not of recent origin. Hugh Stewart, whose family has farmed here since 1901, knew of the tussockland from his youth and says his father burned the area from time to time. Silver tussock is not a novelty on the Volcanic Plateau, the Wellington coast or much of the eastern South Island, but the next nearest places to 'Tyrone' with silver tussock, to my knowledge, are the north-western Ruahine Ranges (Mangaohane Plateau) at least 75 km to the north-east, and the Ruapehu-Waiouru areas, some 60 km north. Because the terrain and landscape at 'Tyrone' do not seem 'typical' habitat for silver tussock, and the site is remote from other known populations, I return to the questions at the start of this article, now posed specifically: 'Why is silver tussock growing here?' This is a question about both the origins (where did it come from) and survival (why does it stay here) of silver tussock in this site. Furthermore, it can be asked in two ways. One concerns the origins and survival of silver tussock, the *species*. The other concerns the origins and survival of a silver tussock-dominated *community*. I offer three hypotheses. Firstly, that the population is natural, a relic of silver tussock grassland that preceded human disturbance of the area. Secondly, silver tussock has arrived from some other site of its own

accord, since people changed the landscape. Thirdly, silver tussock was introduced, either deliberately or accidentally, during pastoral farming.

Podocarp/broad-leaved forest is believed to have been the dominant vegetation cover of this part of Rangitikei Ecological District (Wilson 1914; Lake & Whaley 1995). If the silver tussock were a natural relic, the site, or some site close by, should have been non-forested before forest clearing occurred. But where? All the mudstone slopes are steep and run into very narrow V-shaped valleys. Mudstone erosion scars are not uncommon on the hillsides but there are no gravel areas. Scattered native trees and remnants of native forest occur within several hundred metres of the tussockland and beyond. Local opinion is that there was a complete tall forest cover before farming commenced. It seems unlikely that there was natural tussockland at or close to this site.

When I told Dr. Geoff Rogers of this tussockland, he suggested (pers. comm.), without having seen it, that a possible habitat for silver tussock in the past might have been dry terraces or riverbeds that supported open kanuka woodland or low forest on gravel surfaces, where the periodicity of flooding disturbance was, say, less than 200 years. Although the present site lacks these features, only 2.5 km to the east is the watershed (under 300 m a.s.l.) of the Tutaenui Stream and a further 8 km of near-flat terrain to the Poerewa Stream. Poerewa Stream meanders over a broad, graveled valley floor, mostly now in pasture, before joining the braided Rangitikei River. Kanuka is a feature today of the Poerewa and Rangitikei Valleys, especially on steep terrace scarps. Silver tussock is in the northwestern Ruahine Range (Mangaohane Plateau) but not recorded on the western side of the range to the south of here. It is not known in the lower Rangitikei Valley (P. Williams, pers. comm.), but the valley's terraces and braided shingle bed appear to be suitable habitat. Possibly it was in the Rangitikei in the past, as it could have come down the stony tributaries that rise in the northwest Ruahine Ranges or even the Kaimanawa Ranges, the river's headwaters.

The Rangitikei catchment is unusually dry for the western side of the North Island's axial ranges (Ogle et al. 2000). As such, and before human settlement, it might have had a patchy forest cover, in a mosaic of different ages, as patches of land were bared by periodic natural fires, land slips and river bed changes in the broad valleys. This would have provided habitat for silver tussock communities. The arrival of people increased the amount of non-forest country and the frequency of burning. Dr Geoff Rogers points out (pers. comm.) that all the palynology-based studies of vegetation history over the Maori and early European period of New Zealand show a slow but inexorable rise of the grass biome over woody plants. He suggests that if there were a seed source for tussocks then repeated burning would have selected tussock grasses ahead of shrubs and trees. Tussock spread would have been slow and dependent upon constant depletion of the more aggressive shrubs and trees. I suggest that silver tussock, and some associated tussockland species, could have spread westwards from the Rangitikei Valley, via the Poerewa Stream. The presence of a tussockland community argues against an accidental arrival of silver tussock at 'Tyrone' by human agents, e.g., in sown grass seed. The mudstones and silts of the Turakina Valley, about 8 km west of 'Tyrone', seem less likely as a site for a source of silver tussock, although the river rises at the edge of the Volcanic Plateau.

Conclusions

It is remarkable to have a silver tussock community at a low altitude, in the Rangitikei ecological district. A patch in hill country pasture north of Marton is unlikely to be a remnant of tussockland that pre-dates human modification of this site. Its origins may be in the Rangitikei catchment, having spread westwards after the land was cleared for farming. Whatever its origins, silver tussock should be conserved at this site. It has remained here through a century or more of pastoral farming and this is probably the best management for its future. In the medium-term, the greatest threat lies in the natural spread of shrub and forest species. Young totara, manuka and kanuka are already present in small numbers.

Acknowledgements

My thanks to Hugh Stewart and his family for sharing their farm with the Wanganui Botanical Group and for helping with this report of the silver tussock area; thanks to Randal Springer for transport and company in this project. My

thanks, too, to Geoff Rogers (DoC, Dunedin) for his stimulating thoughts about the origins of silver tussock in remote places.

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- Ogle, CC; La Cock, GD; Arnold, G; Mickleson, N. 2000: Impacts of an exotic vine *Clematis vitalba* (F. Ranunculaceae), and of control measures, on plant biodiversity in indigenous forest, Taihape, New Zealand. *Austral Ecology* 25: 539-551.
- Wilson, JG. 1914: *Early Rangitikei*. Whitcombe and Tombs Ltd.

Appendix 1: Vascular plants of a silver tussock community on "Tyrone", Makuhou Road, Marton.

Abbreviations: * = adventive species; x = present; u = present but uncommon (only one or a very few plants seen); (j) = only juvenile plants seen. Specimen numbers refer to material lodged at the Auckland Museum (AK).

<u>Gymnosperm</u>		* <i>Poa pratensis</i>	u?
<i>Podocarpus totara</i> (<i>totara</i>)	u(j)	* <i>Rytidosperma penicillatum</i> (<i>danthonia</i>) AK253769	x
		* <i>Rytidosperma racemosum</i> (<i>danthonia</i>)	x
<u>Dicot trees, shrubs, lianes</u>		<i>Rytidosperma unarede</i> (<i>danthonia</i>) AK253768	x
<i>Coprosma rhamnoides</i>	x	* <i>Sporobolus africanus</i> (<i>rats tail</i>)	x
<i>Hebe stricta</i> var. (<i>koromiko</i>)	x		
<i>Kunzea ericoides</i> (<i>kanuka</i>)	xj	<u>Dicot herbs</u>	
<i>Leptospermum scoparium</i> (<i>manuka</i>)	xj	<i>Geranium sessiliflorum</i> AK253763	x
<i>Metrosideros diffusa</i> (<i>white rata vine</i>)	uj	<i>Gunnera monoica</i>	u
<i>Pseudopanax crassifolius</i> (<i>lancewood, horoeka</i>)	uj	<i>Hydrocotyle moschata</i> (<i>hairy pennywort</i>) AK253767	x
		* <i>Hypochoeris radicata</i> (<i>cats ear</i>)	x
<u>Monocot herbs</u>		* <i>Leontodon taraxacoides</i> (<i>hawkbit</i>)	x
* <i>Agrostis capillaris</i> (<i>browntop</i>)	x	<i>Leptostigma setulosum</i> [<i>Nertera setulosa</i>] AK 253765	x
* <i>Aira caryophyllea</i> (<i>silvery hairgrass</i>)	x	* <i>Linum bienne</i> (<i>pale flax</i>)	x
* <i>Anthoxanthum odoratum</i> (<i>sweet vernal</i>)	x	* <i>Lotus pedunculatus</i> (<i>lotus</i>)	x
<i>Carex breviculmis</i>	x	<i>Nertera depressa</i>	u
<i>Carex flagellifera</i>	x	<i>Oxalis exilis</i> (<i>creeping oxalis</i>)	x
<i>Cortaderia fulvida</i> (<i>toetoe</i>)	u?	* <i>Plantago lanceolata</i> (<i>narrow-leaved plantain</i>) AK253766	x
<i>Cortaderia toetoe</i> (<i>toetoe</i>)	x	* <i>Polygonum hydropiper</i> (<i>water pepper</i>)	u
* <i>Cynosurus cristatus</i> (<i>crested dogstail</i>)	x	* <i>Prunella vulgaris</i> (<i>self-heal</i>)	u
* <i>Dactylis glomerata</i> (<i>cocksfoot</i>)	u	<i>Ranunculus reflexus</i> (<i>bush buttercup</i>)	u
<i>Dichelachne crinita</i> (<i>plume grass</i>) AK253757	u	* <i>Rumex acetosella</i> (<i>sorrel</i>)	u
* <i>Festuca rubra</i> ssp. <i>commutata</i>		* <i>Trifolium repens</i> (<i>white clover</i>)	x
(<i>Chewing's fescue</i>)	x	<i>Wahlenbergia violacea</i> (<i>harebell</i>)	x
* <i>Holcus lanatus</i> (<i>Yorkshire fog</i>)	x		
<i>Juncus distegus</i>	x	<u>Ferns</u>	
<i>Juncus gregiflorus</i>	x	<i>Adiantum cunninghamii</i> (<i>maidenhair</i>)	u
<i>Juncus sarophorus</i>	x	<i>Blechnum chambersii</i>	u
<i>Lepidosperma australe</i> (<i>four-square</i>) AK253770	u	<i>Blechnum fluviatile</i>	u
* <i>Lolium perenne</i> (<i>perennial rye grass</i>)	x	<i>Blechnum novae-zelandiae</i> (<i>kiokio</i>)	u
* <i>Luzula campestris</i> (<i>wood-rush</i>)	x	<i>Blechnum penna-marina</i>	u
<i>Microlaena stipoides</i> (<i>meadow rice grass</i>)	x	<i>Cyathea dealbata</i> (<i>ponga</i>)	u
<i>Poa cita</i> (<i>silver tussock</i>) AK253754	x	<i>Paesia scaberula</i> (<i>ring fern</i>)	u

Herbarium Report

■ Auckland Museum Herbarium (AK) Report for 1 July 2000 to 30 June 2001

Staff News

Doug Rogan, botany technician, resigned in January to take up the position of Collections Manager, Documentation at the Canterbury Museum. Doug began at the Auckland Museum as a contract technician in June 1993 databasing backlog specimens, and in October 1995 he was appointed as the department technician. Doug built on his existing expertise of algae, lichens and IT during his seven and a half years at the Museum. Auckland has lost a local expert in these plant groups and we were very sorry to lose him.

Mei Nee Lee, who was a part-time contract technician since November, was appointed as Doug's replacement in March.

250,000th specimen

In September a special morning tea marked the accessioning the 250,000th specimen into AK (see *NZ Bot Soc Newsletter* 62: 18, 2000). The 200,000th specimen was accessioned ten years before, giving an average of 5,000 specimens added per year over the last ten years.

Lottery Board Grants

A Lottery Grant to accession four gifted herbaria was completed at the end of the financial year. Working part-time, Claire Miller, Kerry Bodmin (until Sep) and Mei Nee Lee (Nov to Mar) completed the databasing of the two outstanding herbaria: Ministry of Agriculture and Fisheries (LEV) 5,100 specimens (3,900 are dicots) and Margaret E Sexton 1,300 specimens. The Sexton specimens still require mounting, and most specimens of both herbaria require filing. Together with the earlier accessioned W L Townson (680 specimens) and lichens from MDC (1,935), this project has added 9200 specimens to the herbarium.

A new Lottery Grant was obtained for John Braggins to identify and database (no one else can read his writing!) into AK his New Zealand liverwort collection, estimated to number c.10,000 specimens. This gift will make a valuable addition because the liverworts are the poorest represented plant group in AK (1,600 specimens).

Public Relations

During the year herbarium staff led five field trips and gave two talks to various Auckland groups. Nine special interest groups visited the herbarium. A survey of public enquiries was recorded for February, which showed the botany department was one of the busiest Museum departments, receiving 82 enquiries (28 phone, 22 letter, 15 email, 11 in person, 1 fax, 5 other).

CHAH

Ewen Cameron represented the NZ Herbarium Network at the annual Council of Heads of Australian Herbaria (CHAH) meeting at Perth in October. The highlight was a field trip to the Fitzgerald River National Park, in southern Western Australia.

Fieldwork/Research

Fieldwork was mainly restricted to local trips, Botanical Society trips (Pouto, Woodhill) or collecting while on holiday (Rotorua, Coromandel Peninsula and Oakura). Twenty-five articles and scientific papers were published by the herbarium staff, including flora and vegetation accounts on areas in the Auckland region, specific articles on native and naturalised species, news items from the journals, an obituary on Lucy M Cranwell and a chapter on the flora in a book on Great Barrier Island.

The acquisition in February of a bookcase base crafted by Herbert B Dobbie (1852-1940) from native timber and extensively carved with ferns and other floral motifs led to planning an exhibition "Ferns & Folk" due to open in August and run for one year. This show will feature Dobbie, the Victoriana fern craze with fern books with decoratively carved covers, Dobbie's "blue books", 19th century fern illustrations through to the use of the fern as a decorative motive and emblem of New Zealand.

Objects were also researched for the proposed '150 Treasures' Museum book in relation to the Museum's 150th birthday in 2002.

Acquisitions and donated specimens

Staff collecting numbers totalled 384 by Ewen Cameron, 89 by Doug Rogan and c.100 by Rhys Gardner. Peter de Lange again contributed several hundred specimens, particularly *Kunzea*, adventives, and native angiosperm vouchers for chromosome counts. After gentle persuasion, a keen Awhitu amateur botanist, Patricia Aspin, agreed to collect plant specimens for the herbarium from her local area. Of the herbarium

holdings, Ahiwtu is the poorest represented of all the Ecological Districts from the Auckland Region. Other specimens were received from: Jessica Beever, Steve Benham, Gillian Crowcroft, Pat Enright, Alan Esler, Lisa Forester, Max Goodey, Colin Ogle, Barbara Parris, Wendy Patterson, Graeme Platt, Karen Riddell, Bruce Salmon, Bec Stanley, Graeme Taylor, Mike Wilcox, Anthony Wright, Shane Wright and Maureen Young.

The private herbarium of Phil C Gardner (1928-2000) was donated, numbering c.3,800 specimens. Phil, horticulturalist-mountaineer, spent the last ten years of his life with his wife Georgie travelling around New Zealand in a campervan collecting plant specimens.

Staff

Curator	Ewen K Cameron
Honorary Research Associate	Rhys O Gardner
Technician/IT	Douglas B Rogan (until Jan), Mei Nee Lee (from Mar)
Technicians (contract, all part-time)	Claire Miller, Kerry Bodmin (until Sep), Mei Nee Lee (Nov-Mar)
Scientist (contract, part-time)	John Braggins (from Jun)

Volunteers

Chris Ashton, Joan Dow, Colleen Foster (until May), Kay Haslett, Wendy Patterson, Marcel Smits (until May) and Meryl Wright contributed over 1000 hours. They mounted all the new specimens, assisted proofing many of new databased labels and filing specimens. Rhys Gardner and Peter de Lange assisted with difficult vascular plant identifications, and Jessica Beever identified new moss collections.

Visitors

There were 37 visiting researchers and nine special interest groups. Jennifer Bannister from OTA (*Ramalina*), Samuel Hammer from FH (*Cladonia*), Peter Heenan from CHR (adventives), Brian Molloy from CHR (*Thelymitra*), Barbara Parris from Kerikeri (ferns), Iryna Pestova from KW (*Rumex*), Matt Renner from AKU (*Radula*) and Bill Sykes from CHR (naturalised monocots) stayed for more than one day researching specimens. Peter de Lange from the Department of Conservation kept up his virtual weekly visits.

Statistics

New accessions numbered 5,412 specimens and 385 existing specimens were databased bringing the herbarium up to 62% databased (=157,570 specimens).

New accessions:	(1999-2000)
30 June 2001	253,608
30 June 2000	<u>248,196</u>
	5,412 (8,781)
Records on AKILLES database:	
30 June 1999	157,570
30 June 1998	<u>151,773</u>
	5,797 (15,276)
Loans of specimens	
Inwards:	14 [557 spec.] from 9 institutions (18 [750] from 13)
Outwards:	49 [1,184] to 19 institutions (51[1,069] to 24)
Exchange specimens	
Inwards:	57 specimens from 3 institutions (1798 from 6)
Outwards:	223 specimens to 12 institutions (974 to 8)
Total number of specimens out on loan =	7,563 to 41 institutions (8,348 to 40)

E. K. Cameron, Curator of Botany, Auckland Museum, Private Bag 92018, Auckland

BIOGRAPHY/BIBLIOGRAPHY

- **Biographical Notes (43) : John Harry Hadfield (1887-1960); and Arthur Ernest Brockett (c. 1886-1967).**

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

This note is about two members of the staff of Marlborough College, Blenheim: J.H. Hadfield, caretaker from 1920 to 1949, and A.E. Brockett, a master from 1925 to 1947. Both were companions in the field to William Martin (1886-1978) who studied the flora and vegetation of Marlborough from 1928 to 1935 while headmaster of The Blenheim School.

John Hadfield was born at Awaroa (now in Abel Tasman National Park) on 25 October, 1887. In August 1894, when he was hardly 7, his mother died, and the family of 10 children migrated to Nelson where John attended the Haven Road School for perhaps 9 months. The family then moved to Blenheim, and on 20 May 1895, John enrolled in Std 1 at Blenheim School (1).

When John left school he went to work in the small nursery that his father had established in 1895 in Eitham Road; and when his father retired in 1912 he and an older brother managed it for a few more years. In addition to the usual nursery work there were vegetable growing and delivery, and maintenance of bowling greens and private gardens. In April 1915 John Hadfield married Amy Fryer, the first Blenheim florist, and in 1920 he was appointed caretaker of Marlborough College (1).

The College's Jubilee volume (2) tells us that "right after botanical expeditions spearheaded by the caretaker, J.H. Hadfield in the 1920s, field work has long remained a strong point for Marlborough College." In these endeavours Hadfield worked closely with A.E. Brockett, who is described as "a warmly respected commercial teacher for 22 years." Brockett was born in Wellington c. 1886. He graduated BA (1913) and BCom (1918) at Victoria University College, and married Siglvia Fell in Nelson *aet* 30 (3,4). From 1910 to 1917 he taught at Nelson College, first in the Preparatory Department and then (from 1913) in the Secondary Department. He then became Headmaster, Westport Technical School, before joining Marlborough College in 1925.(8) "Outside the classroom he played important roles as 1st XV coach and organizing weekend tramping trips which often included students. He and Mr Hadfield, the caretaker, often enriched the Monday's senior science classes with native botanical specimens collected from their ramblings." (2)

In early December, 1931, Hadfield and Brockett accompanied Martin on an overnight trip to the main ridge and summit (nearly 7000 ft) of the Bounds, east of the Wairau valley. It "yielded one plant quite new to science, a mountain daisy or *Celmisia* with cordate leaves, but altogether different from *C. cordatifolia* its only near relative." (5) On 16 May, 1932, all three were among the 17 foundation members at the inaugural meeting of the Marlborough Tramping Club. (6)

In October 1932 Martin published his classic account, "The Vegetation of Marlborough", based on a series of articles in "The Marlborough Express". In it he refers to a mountain daisy with heart-shaped leaves, "discovered by the writer last year on the Bounds and so far without a name, though I have listed it as *Celmisia brockettii* in compliment to my energetic companion of many trips, Mr. A.E. Brockett, M.A. of Marlborough College". Martin gives a photo of this daisy (and others) growing in Hadfield's garden. He also notes a daisy related to *Celmisia macmahonii* "for which I intend to propose the name of *Celmisia hadfieldii*".

An undated clipping from "The Marlborough Express" (7) (probably February 1934 or 1935) announces the first ascent of the Pinnacle (7000 ft), the highest peak in the Bounds by Messrs F. Patchett, J.H. Hadfield, K. Fairweather, and A.E. Brockett. At the same time Martin ascended the Bounds (several miles distant and some 300 ft lower) in order to study the vegetation and collect flowering material "for a forthcoming scientific paper on the mountain daisies of Marlborough."

Martin's paper on *Celmisia* came out in 1935 and when discussing the identification of wild hybrids he wrote: "As a safeguard, however, no record has been entered save where my field companion, Mr J.H. Hadfield and I have independently arrived at the same conclusion." The daisies that he had named after Brockett and Hadfield in 1932 were described as new varieties, but for some reason, the latter was not given a formal Latin description. This was supplied in Allan's "Flora" (1961).

"Jack" Hadfield retired from Marlborough College in 1949 after 29 years service; but when the Whitney Street Primary School opened in the mid-1950s he became part-time caretaker for a few years. He died in Blenheim on 2 July 1960, *aet* 72, and was buried in the Omaka Cemetery.(1) The Jubilee volume states: "A permanent memorial to Mr Hadfield is the small native tree reserve with its fine Kauri and Kahikatea specimens flourishing in the north-west corner of the grounds which he planted in 1927." There is also a stand of some 18 kinds of native trees and shrubs near the roadside at 52 Percy Street (part of the original Fryer property) which was planted by Hadfield in the 1920s and 1930s.(1)

"Arch" Brockett retired from the College in 1947 after 22 years service. He went to live in Kaikoura where he died in the Public Hospital on 12 July, 1967, *aet* 81, and was buried in the Lawn Cemetery.(3,6)

Eponymy

1935 *Celmisia cordatifolia* var. *brockettii* "I have named it in compliment to Mr A.E. Brockett MA, B Com, my constant companion on all my field excursions". W. Martin *TRSNZ* 65: 178.

1935 *Celmisia macmahonii* var. *hadfieldii* "This chasmophyte has been named in honour of Mr. J.H. Hadfield who has not only assisted me greatly in this research but has also done more than anyone else to introduce the plant to the notice of New Zealand botanists". W. Martin *TRSNZ* 65: 181.

Acknowledgements

I could not have written this note without the ready help of Elaine Hadfield (Blenheim), daughter of J.H. Hadfield. I also thank Lloyd Kerr (archivist, Marlborough College), and Bernie Hughes (Club Captain, Marlborough Tramping Club) for their information, and Margaret Dysart (Blenheim) for finding and consulting these people. Thanks also go to Wendy Weller for her typing.

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(1) Elaine Hadfield *in litt.* 21 July, 2001; (2) Lloyd Kerr (ed.) c. 2000 *The Gold and the Blue*; (3) Death Cert. A.E. Brockett; (4) Anon. 1964: University of NZ Roll of graduates; (5) William Martin 1931: Botanical research. The wealth of Marlborough. Mr W. Martin's investigations. *The Marlborough Express* 15 Dec.; (6) Information from Bernie Hughes and Lloyd Kerr sent by Margaret Dysart; (7) Pinnacle conquered. First ascent accomplished. Blenheim party's feat. *The Marlborough Express*; (8) J.G. McKay; H.F. Allen 1956: Nelson College Old Boy's Register.

■ Two notable pioneer women botanists in teaching: Olga Adams and Helen Dalrymple

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

In botany as in all other facets of science, effective teaching to young students both at Primary and Secondary School levels, even before University, is crucial in the development of an interest and enthusiasm for a branch of science. The seed for this dedication can sometimes be sown at the Primary School level. For example, in New Zealand botany, the youthful **Dr Barbara S. Parris** (b.1945) was encouraged in her developing interest in ferns by a teacher (Mr Melrose) at Papatoetoe West Primary School in South Auckland. He had his own collection of ferns and a copy of Dobbie & Crookes (8) and helped Barbara identify ferns in her own collection (15). Barbara was thus helped along the way to a life-long interest in ferns.

At the Secondary School level I have taken just two examples of the many dedicated teachers in botany: Miss Olga Adams and Miss Helen Dalrymple.

Olga Livia Gertrude Adams (1900-1950) was the ninth of ten children of J.C. and Helen (Hereni) Adams (13, p.2). Olga was educated at Tauranga District High School and Auckland Girls' Grammar School and graduated from Auckland University College. Olga had Maori ancestry (11) and traced her Maori ancestors back to Hoturoa of the Tainui canoe (MS3, Auckland War Memorial Museum Library). This would account for her special interest in aspects of plants and the Maori; she gave talks on Maori topics in the radio 1YA Winter Course Talks Series including, "Analysis of Maori laments", "Whakatauki, Maori proverbial sayings", "Ritual chants of the Maori war canoe", "The carved meeting house", "Communal pastures", "Fishing customs" and "Trees in story and legend" (13, p.2). In the draft of the latter radio talk (on 5 July 1945, MS3) which I have seen, Olga draws on her own knowledge of Maori stories from northern New Zealand, some relating to Tainui and associated with the pohutukawa, totara, karaka, flax and hinau. She was a member, and played an active part, of the Committee of the Anthropology and Maori Race Section of the Auckland Institute (1) and at the Teachers' Training College she directed the Maori Craft Club (17).

Olga taught at Waihi District High School, Waitaki Girls' High School and Takapuna Grammar School (1928-38) where she was senior science mistress and later senior mistress, and then later a lecturer in science in the Secondary Division of the Auckland Teachers' Training College. She graduated MSc in botany from the Department of Biology at Auckland University College in 1930 with a thesis entitled "An ecological study of the Cyperaceae of the Northern Heath, Auckland, New Zealand". I have seen only two published items from Olga. One is "Karengo-*Porphyra* spp." in the *Auckland Botanical Society News-sheet* (2). It is a detailed account of the Maori preparation and use of this seaweed as a food. The other publication is the 1945 *Auckland Botanical Society Bulletin No. 2* "Maori Medicinal Plants" (1). It is a useful pioneer account compiled from her own informants or by personal observation. Since the 1905 *Transactions* paper by W.H. Goldie, little additional information had been recorded on this topic up to 1945.

In the history of Takapuna Grammar School (14, p.27-28) Olga is referred to as, "...very popular, genial and outstanding teacher" and was "...extremely knowledgeable in the field of biological studies and also had the gift of lucid and interesting exposition that led to pupil enthusiasm". Indeed, Eric Godley who attended Takapuna Grammar (1933-36) records that he was, "Enthused by Miss O.L.G. Adams' teaching of botany in Forms V and VI" (14, p.224). Geoff Baylis was another botanist who benefited by Olga's teaching at Takapuna Grammar. Other notable biologists from Takapuna during Olga's era were Mr Graham Turbott (former Director of the Auckland Museum) and Professor Neville Stephenson (University of Sydney).

Olga was regarded by the then Department of Education as one of the most successful teachers of botany in N.Z. (18) and her, "...farewell talks to graduates each year [at Teachers' College] were a joy to hear, so full of wisdom, sympathy, understanding humour and poetry" (18).

Miss Helen Kirkland Dalrymple (c.1883-1943, 12) was born in Birmingham, England and spent her childhood at Puerua in the Catlins. Helen was the younger daughter of the Rev. Alexander Milne Dalrymple, a Presbyterian minister. She attended Otago Girls' High School (1898-1902) and in 1902 was awarded the Women's Scholarship at the University of Otago (12) where she graduated BA (1906). After teaching at Winton and Napier she was appointed to Otago Girls' High School in 1913 and retired in 1938. Helen taught English, Latin and botany at Otago Girls' High School (12).

Helen was a lady of wide interests. She played the viola in the school orchestra and was noted for her water-colour painting, mainly of native plants. Being a daughter of the manse perhaps it was not surprising that she was, "...an ardent worker for the Student Christian Movement in the school, and organised schoolgirl camps at Pounaweia [in the Catlins] for Secondary School girls for many years" (4). It was in this organisation and in other field activities that Helen became an ardent field botanist and

extended her classroom teaching into the field. Helen's class field trips put her ahead of her time in teaching method (16, p.113). At the time of her retirement the *Otago Girls' High School Magazine* records (3), "Miss Dalrymple is one of the most interesting companions in a country walk, for at every step she finds something thrilling to investigate and it is almost impossible to escape the infection of her enthusiasm".

Helen was an active and enthusiastic member of the Dunedin Naturalists' Field Club, one of the pioneer such clubs in New Zealand, and was its President for several terms (4) and, "A keen member of the Naturalists' Field Club she was regarded as a local authority on orchids and mycology. Gentle in speech and manner, she nevertheless had great determination and strength of character and when in 1915, and later in 1941, it was suggested that the club go into recess it was largely owing to her efforts that it kept going" (12).

It was in field botany, especially with youngsters, that Helen made her major contribution. Indeed, Dame Ella Campbell is one who benefitted during her formative years by an association with Helen (5). Ella's mother and Helen were in the same class at Otago Girls' High School and while Ella was training as a teacher she went with her mother and Helen to the Routeburn for 10 days one summer and to Makarora the next year, in both trips for botanising.

Helen wrote two small booklets "Orchid Hunting in Otago, New Zealand" (6) and "Fungus Hunting in Otago, New Zealand" (7), both published by Coulls, Somerville and Wilkie. The two booklets were illustrated with colour paintings and line drawings by Helen and she acknowledges the help of Dr. J.E. Holloway in the orchid booklet and Dr G.H. Cunningham and Dr Kathleen Curtis in the fungus booklet. In addition, Helen acknowledges the support and encouragement of the Dunedin Naturalists' Field Club. The booklets were pioneer accounts for local botanical enthusiasts, including youngsters. Eric Godley tells me (10) that as a young enthusiast he contacted Helen regarding her orchid booklet.

As far as I can ascertain, Helen was associated with just one other publication, "The Lure of the Milford Track: The Record of a Trip to Milford in January, 1941" (9). It is a small, attractive and authoritative booklet on the natural history and other aspects of the region. It was assembled by members of the Dunedin Naturalists' Field Club and Helen was co-editor (12) and her sketches are included in the booklet.

Acknowledgements

I am grateful to Dr Alistair Carlile of the Auckland War Memorial Museum Library for providing copies of material from MS3 (Olga Adams).

Mr Ewen Cameron kindly provided a copy of Olga Adams' article in the *Auckland Botanical Society News-Sheet* and Dr Ross Beever provided a copy of "Maori Medicinal Plants". I also thank Ms Rachel Gillett of the McNab Collection, Dunedin Public Library for her assistance and for providing information about Helen Dalrymple.

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Board of Trustees. 220pp. 17. Anonymous, 1945: Yesterday's Maori: talks by an enthusiast. *N.Z. Listener*, 29 June. 18. Murdoch, J.H. 1950: Obituary: Miss Olga Adams. *S.T.A.*: 24.

PUBLICATIONS

Book Review

- **Simpson, P. (2000).** *Dancing leaves: the story of New Zealand's cabbage tree, tī kōuka*. 324 pp. P/back. Canterbury University Press, Christchurch.

The year 2000 brought forth a goodly number of excellent natural history books and my choice for the year was heading towards the Malcolms' *Mosses and other bryophytes – an illustrated glossary*. However, a couple of days after Christmas I was given a copy of this excellent gem. The humble cabbage tree may lack the status and grandeur of the kauri and the podocarps but, nevertheless, has a special place in the New Zealand psyche. Its significance to all in New Zealand is amply dealt with here.

This would have to be one of the best books written about one group of plants. The cover photograph of a large group of mature cabbage trees, standing in a field of exotic grasses and bracing themselves against the wind, evokes feelings of the struggle of the native plant against the changes in its environment from outside forces. The first four chapters deal with the evolution, biogeography, description and ecology of the *Cordyline* genus, its history and its relationships with other families. The importance of tī kōuka to Maori covers the origin and history of the cabbage tree from a Maori perspective. Its importance as a cultural icon is dealt with, as are its many uses.

The cabbage tree formed an early impression on the Europeans, probably because of its exotic appearance, something quite foreign to their eyes. Just how much it affected the European consciousness is clearly covered in the following section and I was surprised at the extent of its use in almost every aspect of European life and culture.

The book finishes with a discussion of its present plight at the hands of sudden decline syndrome, which has had such dramatic effects, especially in the North Island, and ends with optimistic hopes for its future.

Simpson's text makes for easy reading without detracting from its technical content. The many photographs and illustrations are quite excellent. This is a book for reading cover to cover or for dipping into when the fancy strikes. I came away with the impression that Simpson is on familiar terms with every tree in the country and the book has left me with a much more reverent opinion of this, much taken for granted, New Zealand sentinel.

The book was recommended for, and subsequently won, the environmental section of the New Zealand Book Awards, and a well-deserved winner it was too.

This book is available from Manaaki Whenua Press, at 20% off, which includes post and packing, if you are a member of NZBS, and tell them.

Online ordering website: <http://www.mwpress.co.nz>,

Post: Manaaki Whenua Press, PO Box 40, Lincoln 8152, NZ.

Tel +64 3 325 6700, Fax +64 3 325 2127

John Steel, Department of Botany, University of Otago

Journals Received

New Zealand Native Orchid Group Journal No. 80 - September 2001

Edited by Ian St George [ISSN 1170-4543]

Original papers in this issue are: From the Editor: *Pterostylis thigmonasty*; Graeme Jane - Out in the woods today (photographing *Prasophyllum* aff. *patens* at Pureora); Graeme Jane - Orchid Keys 2: *Caladenia*.

DESIDERATA

■ Books for sale

The Canterbury Botanical Society still has some copies of two of its recent publications, and is offering them for sale at a reduced price. They can be obtained by writing to the Treasurer at PO. Box 8212 Riccarton, Christchurch, enclosing payment + postage (please make cheques payable to the Canterbury Botanical Society).

Etienne Raoul and Canterbury Botany 1840-1996. Editor Colin Burrows. \$20. This includes historical material relating to botany in early Canterbury, as well as taxonomic contributions, e.g. a new key to *Raoulia*.

Naturalised Vascular Plants of Banks Peninsula by Hugh Wilson. \$2.50

CORRIGENDUM

■ *Sophora* correction

P.J. de Lange, Science & Research Unit, Department of Conservation, P.B. 68908, Newton, Auckland (pdelange@doc.govt.nz). **P. B. Heenan**, Landcare Research, P.B. 69, Lincoln.

With regard to the possible origin of the Wellington and Chatham (Rekohu) Island occurrences of *Sophora chathamica*. The timing given in the N.Z.Bot.Soc.Newsl. (64: 23(2001)) paraphrasing of the Landcare press release on *Sophora* for the combined Waikato/Taranaki iwi invasion of the Wellington region (involving Ngati Toa, Ngati Raukawa and various iwi of Te Ati Awa), and the subsequent movement of the Ngati Mutunga and Ngati Tama (Te Ati Awa) to the Chatham Islands is incorrect. The Invasion did not happen 300 years ago. The Landcare press release on which we assume the editor of the N.Z.Bot.Soc.Newsl. based their article actually stated it occurred about 200 years ago. In any case Heenan et al. (2001) provide suitable references which show that the initial invasion of the Wellington Region occurred during the 1820's (c. 181 years ago), and, although undated by us in our paper, the subsequent Chatham invasion occurred during 1835 (King 1989) (166 years ago). It is also questionable what is speculation. It is a fact that to the Maori kowhai trees are considered an important medicinal resource. They also figure highly in proverbs and spiritual matters, and to most iwi the trees are highly tapu. In the course of our work one of us (PdeL) interviewed various Kuia of Ngati Raukawa, and Kaumatua of Ngati Wehi who without any prompting stated that they took their kowhai (*S. chathamica*) with them during their southern invasion to use as medicine. Indeed those spoken too still use this species to purify the blood and treat boils. Therefore the occurrence of this species - at least around Wellington - always in association with pa and kainga erected by the iwi involved in this invasion, seems compelling enough reason to suggest their non-indigenous nature in that area. The subsequent (January 2001, AK!) discovery of a single tree of *S. chathamica* at West Whanganui Inlet by one of us (PdeL) in another location taken over by Ngati Toa during their southward invasion, adds further evidence of it's non-indigenous nature in the southern North Island and northern South Island.

References:

Heenan, P.B.; de Lange, P.J.; Wilton, A.D. 2001: Sophora (Fabaceae) in New Zealand: taxonomy, distribution, and biogeography. *New Zealand Journal of Botany* 39: 17-53.
King, M. 1989: Moriori - a people rediscovered. Auckland, Viking.

Apologies for the incorrect date. **Editor**

■ **wrong email address**

I also wish to apologise for the wrong Email address for sending contributions given in the June 2001 issue. **Editor**

NOTES

