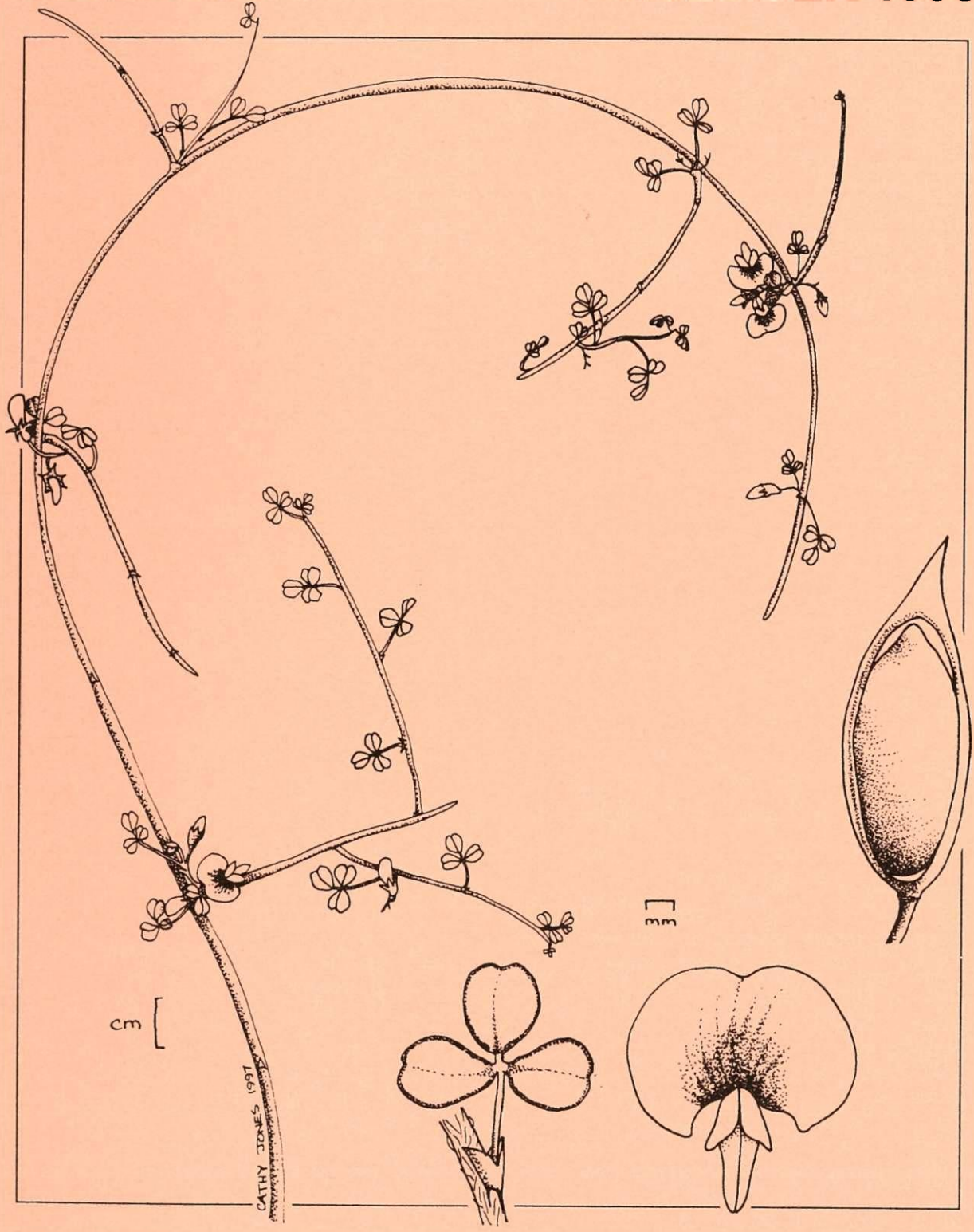
NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 54 DECEMBER 1998



New Zealand Botanical Society

Subscriptions

The 1999 ordinary and institutional subs are $18 (reduced to $15 if paid by the due date on the subscription invoice). The 1999 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 28 February of each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next year's subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

Deadline for next issue

The deadline for the March 1999 issue (Number 55) is 26 February 1999.

Please forward contributions to:

Dr Carol J. West,
c/- Department of Conservation
PO Box 743
INVERCARGILL

Contributions may be provided on an IBM compatible floppy disc (Word) or by e-mail to cwest@doc.govt.nz

Cover Illustration

Carmichaelia kirkii with detail of leaf/stipule, flower and fruit, drawn by **Cathy Jones**

NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 54 DECEMBER 1998

CONTENTS

New Zealand Botanical Society News

■ From the Secretary

One eagle-eyed member has not only noticed, but drawn to my attention, the fact that I failed to call for nominations for the NZBS Committee for 1999 in the last issue of the *Newsletter*. I forgot! I have no defence, and offer myself up for impeachment or other suitably botanical removal from office. I suggest that the matter be discussed at a SGM during the Godley meeting next June, and if necessary, an election be held then. Please note that since the inception of the Society the number of nominations has exactly equaled the number of vacancies and no elections have been necessary.

Thus far, we have been unsuccessful in finding a new *Newsletter* editor, and Carol West has kindly consented to continue in office while the search is widened. A big thank you to Carol for her work, and compliments of the season to all members.

Anthony Wright, Secretary, New Zealand Botanical Society

■ New Zealand Threatened Plant Committee call for submissions

As a result of the 1997 Department of Conservation restructuring, the funding of the New Zealand Threatened Plant Committee was unable to be confirmed until October 1998. Therefore, the committee now intends to meet in March 1999. Accordingly, this is a further call for submissions on changes of status and additions to the New Zealand threatened plant lists. We apologise for any inconvenience caused by this delay.

The committee would like to acknowledge submissions already received (in no particular order) from John Barkla, Andrew Thomson, Brian Rance, John Sawyer, Carol West, Geoff Rogers, David Norton, Sarah Beadle, Willie Shaw, Merrilyn Merritt, Bruce Burns, Bruce Clarkson, Graeme Jane, Enid Asquith and Peter de Lange.

Submissions must be made in writing and sent to the convenor no later than 20 February 1999. The committee would prefer that submissions contain some background data to support proposed changes and additions. All submissions remain the property of the submitter, who can request their return, otherwise copies will be held by the committee convenor. In these situations submissions will not be available for other people's or the committee member's own personal use, unless permission has been granted with the original submission.

Tag names or other examples of informal plant nomenclature, will not be accepted by the committee unless the submission includes details of a herbarium voucher lodged within a public herbarium. In these instances the committee reserves the right to consult with appropriate specialists over the status of any "new" taxa.

Peter J. de Lange (Convenor), Science & Research Unit, Department of Conservation, Private Bag 68908, Newton, Auckland

Regional Botanical Society News

■ Auckland Botanical Society

September Meeting

The 14th Lucy Cranwell Lecture, "The flora and landscape of the Otago and Northern Southland Mountains" by Neill Simpson, formerly Lakes District Conservancy botanist with

DoC, was a treat for the large number of Aucklanders who attended. Stunning photography – each photo would be worthy of a page on a calendar – featured some of the plants and views of this unique area of New Zealand. The low growing plants of the salt pans and cushion fields were highlighted.

September Field Trip

Tony Palmer led a morning ramble around the grounds of the University of Auckland. Some themed collections were looked at, including the native collection, and plants from geographical regions such as China and Japan. After lunch in the grounds of the old Government House, Lance Goffart-Hall was the guide around some major tree species in Albert Park.

October Meeting

Jim Goulstone, Honorary Research Associate at the Auckland Museum, has a passion for land snails, particularly the small species. First he spoke about the introduced slugs and snails, to get them out of the way, then went on to describe some of the native species. The huge variety of native snails has, over millions of years, adapted to living in the bush. For the interest of the botanically minded audience he listed the trees in order of preference as snail habitat – from rimu, the best, to red beech, the worst.

October Field Trip

Mike Wilcox led the walk through the Okura Scenic Reserve, off the East Coast Bays Road on Auckland's North Shore. This coastal forest has areas of taraire, kauri and gumland scrub. The kowhai was in flower, as was the *Alseuosmia* – mostly *A. quercifolia* but with some *A. macrophylla*. Three species of greenhood orchids were flowering, *Pterostylis graminea, P. agathacola* and *P. banksii*. With the walkway traversed at a botanist's pace, most people just made it to the sandspit before it was time to return.

November Meeting

A very well illustrated talk on plant life in geothermal areas, "From the frying pan into the fire", was given by Bruce Burns of Landcare Research, Hamilton. Bruce has measured the changes in vegetation over space and over time in the geothermal area centred on Rotorua. Many of the plants have an interesting distribution, growing in geothermal areas, then in some cases touching base in the subtropical north of the country, and seen again in the tropics.

November Field Trip

The Whatipu sands are bounded by the Centennial Memorial Park, Manukau Harbour entrance and the Tasman Sea. The zones of dunes, sandflats and wetlands provided a contrast of vegetation types, and a chance to learn some grasses, rushes and sedges. Finding *Psilotum nudum* amongst the grasses on the sandy substrate was a surprise. *Ruppia polycarpa,* with its coiled stems, was common in the pools, and in other wetlands the introduced bladderwort, *Utricularia gibba*, was seen. *Schoenoplectus pungens,* or three square, grows there almost at its northern limit, alongside the taller *S. tabernaemontani.* The minute *Lilaeopsis novae-zelandiae* and *Myriophyllum votchsii* were flowering shyly on the black sands of the dune slacks.

Forthcoming activities

Evening Meetings

2 December – Pot luck dinner in the Botanic Gardens

Field Trips

12 December – Iwi Tahi with Native Orchid Group (Catherine Beard)

23–25 January – Cuvier Island (Anne Grace)

20 February – Mt William (Ross Beever)

Maureen Young, 36 Alnwick St, Warkworth

■ Nelson Botanical Society

September Field Trip: Motueka Valley QEII – Covenant of Kramer & Smith

This 50 ha block of Moutere Hills beech forest provided an interesting insight into the former forest of the Moutere gravels. Initially, the track led into a deep gully through hard and black beech with scattered rimu and occasional streamers of *Clematis paniculata.* Here many tree ferns were quite densely covered in *Tmesipteris elongata*. The gully favoured kiekie, pigeonwood and even the odd kawakawa (*Macropiper excelsum)* and *Hymenophyllum*

rufescens. The next ridge had a drier forest with inaka (*Dracophyllum longifolium)*, mingimingi and prickly mingimingi. Here *Pittosporum rigidum* var. *crassicaule,* with masses of tiny deep red flowers, was quite common. The next gully revealed early flowering plants of *Pterostylis graminea*. On the ridge many people were fooled by the hebe-like *Pimelea gnidia*, revealing itself with its hairy flowers. On the descent back to the vehicles we continued to add to the list of plants, with carpets of *Hymenophyllum cupressiforme* on the forest floor and patches of *Astelia trinervia* and *Sticherus cunninghamii.*

October Field Trip: Hackett

The first part of the track was walked rather rapidly with stops to spot the various ferns including *Hymenophyllum cupressiforme* and *Pellaea* aff. *rotundifolia*. On the ultramafic soils the divaricating shrub tangles included *Olearia serpentina, Melicytus alpinus* and various coprosmas. Nearby *Corokia cotoneaster* was in glorious yellow flower and such tricky species as, pokaka, weeping matipo, *Lophomyrtus obcordata, Coprosma rigida, C. rhamnoides*, and *C. propinqua* hybrids were all found together.

Near the Miner Falls Track junction, a warm rock face bore *Pellaea calidirupium* and *Asplenium trichomanes*. Flowers on the *Melicytus brockiei* a little further along the track and *Coprosma obconica* also provided interest. The Miner Falls in flood were a striking sight cascading down the mossy rock faces. Here plants of *Corybas macranthus* were abundant. Other plants of interest included *Anemanthele lessoniana,* and *Pseudopanax macintyrei*. After lunch atop the falls, a brief sortie into matai-tanekaha-rata forest to seek out black maire found only seedlings. As a last stop, the cryptic *Scutellaria novae-zelandiae* with its purple-backed leaves was soon found in the terrace mountain beech forest.

Labour Weekend Camp: Kekerengu

The first brief stop on Saturday, not far from the road at the Shingle Fans, soon revealed glorious mauve masses of *Heliohebe hulkeana* in flower and the leathery leaves of *Pachystegia insignis* on steep banks. Scattered patches of *Clematis foetida* could be seen at many points but the morning was too cool to catch the scent. We turned back near 200 m tall walls of gravel which were covered by patches of *Pachystegia insignis*, scattered *Brachyglottis monroi* and occasional *Celmisia monroi*, far less conspicuous than on previous visits because of recent storm damage.

We continued on south to Woodbank where, after a welcome from John Murray, the landowner, and a noisy demonstration of pigeon dispersal of maire seed on his vehicle bonnet, the party spread out into the tall matai-black maire forest. Near the margins, adventive plants such as sycamore, cherry, yew and foetid iris were common but we were soon in the presence of large matai and black maire in open forest. At one point a huge 40 cm diameter liane (*Parsonsia heterophylla*?) ascended into a matai. Near the foot of the slope, ferns and supplejack became common and a pole stand of kahikatea was encountered. As we climbed the slope the forest became quite dry with huge kanuka and stringy barked akiraho (*Olearia paniculata*) being common. We returned downslope through supplejack and adventive cherry to see some huge maire before returning to the vehicles. Further up the road we stopped at Jacob & Essau to seek out *Olearia coriacea* and *Wahlenbergia matthewsii*. We also encountered the greenhood orchid *Pterostylis areolata*. While the photographer was busy Guyon was appointed branch manager on light duties.

On Sunday the target was Sawcut Gorge. In the first half of the walk *Clematis foetida* was quite common in the shrublands but as the gorges began to close in, plants such as the weeping broom (*Carmichaelia carmichaeliae*), *Heliohebe hulkeana* and *Wahlenbergia matthewsii* were very evident. Around the morning tea spot the straggly *Pimelea traversii* and *Clematis afoliata* were common. At the Isolation Stream junction the first plants to catch our attention were gorgeous, glistening, blanket fern (*Pleurosorus rutifolius*). A little further along adult ordinary and fierce lancewood adults grow side by side. Into the gorge *Carmichaelia astonii* and many alpines lined the walls. After traversing the Sawcut some proceeded to the hut while others backtracked and headed up the Waima to see the typical, heavily goat damaged forest of the limestone areas.

Monday we visited Waterfall Station, stopping en route to see *Muehlenbeckia astonii.* Charles Waddy, the landowner, led the way. At the Waterfall, we encountered *Clematis afoliata* in flower and the uncommon, pink-flowered *Parsonsia capsularis.* Upslope the hot rock ferns (*Pellaea calidirupium* and *Cheilanthes humilis)* poked out of crevices in the rocks. On up the stream *Pachystegia rufa* was frequent on rock faces and *Drymoanthus adversus* was abundantly in flower high up on a sheltered outcrop. Out of the gorge *Tupeia antarctica* was abundant on five finger. After lunch we headed down the Blind River through the *Coprosma crassifolia* and matagouri shrublands. Within a few metres we passed from bluffs clad in *Pachystegia insignis* to ones clad in *P. rufa*; a small patch of *Corybas* "Waiouru" occurred at their foot. Later, in the descent of the creek *Libertia ixioides* was evident in flower and, at another, *Celmisia monroi* was near flowering. Finally we emerged into pasture and returned to the vehicles for the journey home.

November Field Trip Report: South Head Croisilles

A large contingent set off on yet another fine day down the steep hill to Whangarae Bay, heading for Onatea Bay. A stop at the bottom of the hill allowed examination of one the dry black beech forests and the remnant pukatea forest in wetlands draining into the estuary nearby. Of particular interest here was ramarama (*Lophomyrtus bullata*), a shrub not often seen in Nelson, and the heavy scent of *Cordyline banksii.* Out onto the estuary *Olearia solandri* hid amongst kanuka and saltmarsh ribbonwood. Not far along the shore the native passionfruit, *Passiflora tetraptera*, was in flower. Where the road started up the hill to Onatea Bay a small stand of tawa in a gully provided interest. Here hinau was almost in flower and kaikomako fully out. At Onatea Bay a patch of dead trees identified by the landowner warranted investigation. This proved to be a kohekohe stand, including some very large trees which were heavily attacked by possums.

Forthcoming trips

December 20 – Red Hills
January 17 – Mt Arthur - Loadstone
February 21 – Editor Hill - Moncrief SR
March 21 – Delaware Bay

Graeme Jane, 136 Cleveland Terrace, Nelson

■ Canterbury Botanical Society

August Meeting and Field Trip

Joe Cartman described and demonstrated the management of the Christchurch City Council's native plant nursery at Linwood. Here the greater part of the plants used for regeneration and enhancement planting around the city, including 200 km of waterways, are propagated and raised. There was much interest in the gathering and storage of seeds from local sources, and the nurture of seedlings in carefully designed beds. A highlight was the propagation of male and female plants of *Spinifex sericeus*, for the dunes.

September Meeting

Philippa Horn gave an expertly structured and illustrated talk on the nature of weeds. Their strategies for survival, and their attractions, and their tremendous influence on our lives. Some of the more unusual weeds were considered. We learnt that purslane (*Portulaca oleracea*) is considered to be the world's worst weed due to crop suppression.

September Field Trip

Seven members led by Colin Burrows went into the Castle Rock Reserve on the Port Hills. Our aim was to build up a floristic list for this new Reserve. We spent most of our time in the southernmost gully, which has a rocky rim, and a small waterfall at the time of our visit. There is a strong complement of weedy introduced species, including gorse, broom, hawthorn and boxthorn, grasses, and many other herbs. Cape weed (*Arctotheca calendula*) is very abundant on the lower slopes; catchfly (*Silene gallica*) on rock ledges, where sparse ratstail grass (*Sporobolus africanus*) was also present; a specimen of Tasmanian ngaio (*Myoporum insulare*) which is beginning to spread uphill from the dense planting alongside the Tunnel Road. Silver tussock and rushes are among the common native species. *Cheilanthes humilus* and *Crassula sieberiana* clothe many rock crevices. *Sophora prostrata*, *Linum monogynum*, *Leptinella minor*, and *Heliohebe lavaudiana* are common. Finds of the day: a good patch of

tutu, probably *Coriaria arborea*, *Geranium solanderi*, *Gingidium enysii* and *Anogramma leptophylla*.

October Meeting

John Lovis celebrated the family Proteaceae with a lavishly illustrated talk. The family was already diversified by the late Cretaceous, and was of mesic origin. While all South African species belong to the Proteae, Australia has the greatest diversity, for example there are 15 genera endemic to N.E. Queensland. New Zealand now has two monotypic genera, *Knightia* and *Toronia*, yet the family was prominent in here in the Eocene. John showed the great diversity in floral and foliar morphology.

October Field Trip

About 15 members visited Robert Johnston's property at Ashley Gorge. He described how he maintains the south and west slopes of Trig 23 in healthy silver and hard tussock through light grazing by ewes and lambs. Cattle are excluded. Between the tussocks are numerous native herbs including the palatable *Anisotome aromatica*. Also covenanted is a bush-filled gully along Lees Valley Road where we lunched by the stream in view of a mature matai. A short scramble on to a spur with an open hardwood-*Cyathodes* association revealed a large population of the root parasite *Exocarpus bidwillii*. Some bushes were brownish-yellow, other purplish-brown. Flowering had finished. Below the gorge road we traversed a scree slope on which *Carmichaelia monroi* was abundant among *Cyathodes* and *Corokia cotoneaster* in full bloom. On a rib of shattered greywacke grew *Helichrysum intermedium*, with *Heliohebe raoulii* in flower. Back on the road bank we enjoyed the intricacies of *Pittosporum divaricatum* and *Raukaua anomalus* (*Pseudopanax*), and the fragrance of the greenish-yellow flowers of *Clematis petriei*. Thanks to Allen and Matthew Cookson for their leadership.

November Meeting

The two recipients of the Society's student grants gave progress reports on their research topics. Both are from Lincoln University. Nancy Willems spoke on "Podocarp regeneration in forest fragments on Banks Peninsula". With most reserves being less than 10 ha, fragmentation means loss of forest structure and favouring of hardwood regeneration. Population dynamics of the four podocarp species in several study sites, and their implications were discussed. There is sucessful dispersal of podocarp seed by birds to small patches outside the reserves. Louise Cullen is studying "Climate and distubance influences on *Nothofagus menziesii* tree lines". She presented statistical analyses of the spatial relationships of trees, and their cores, in seven plots on Mt Haast and Rahu Valley and Spur. It is important to sort out which changes in tree line are the result of disturbance due to local weather as happened about 1910, and again 40–50 years ago when there was regeneration.

November Field Trip

The South Brighton Park salt marsh was the scene of a workshop on monocotyledons, led by Colin Burrows. About 25 people took part, including two from Nelson, and it was agreed that *in situ* study is the way to go. We look forward to the next workshop.

Forthcoming Events

November 27, Friday 8 p.m. – Trevor Partridge, Landcare Research, will speak on "Biological control of pest species".

December 4–6 – Camp based at Hanmer Springs. One day will be spent in the mountains and another in the Carter Holt Harvey covenanted area of Hanmer Forest.

January 2–9 – Camp based at Nydia Bay Lodge, Pelorus Sound. Access by chartered boat from Havelock, or the Nydia Bay track.

Contact for both the camps: Bryony Macmillan (03) 3519241.

February 5, Friday 8 p.m. – Members' Evening for which a report on the Pelorus Sound camp is planned.

February 6, Saturday – Glentui River to see the southern rata *Metrosideros umbellata*. Contact Allen Cookson (03)3124057.

Visitors are very welcome at all our meetings.

Bryony Macmillan and **Colin Burrows**, P.O.Box 8212, Riccarton, Christchurch

Plant Records

■ Floristic list for the catchment of the Wanganui River, Westland

We have prepared a list of vascular plants found in the catchment of the Wanganui River (central Westland), from near the Main Divide to the sea (Jane & Wardle 1998). It is based on records made in 1993 and 1994 from the mountains by Peter Wardle, Rowan Buxton and Kerry Ford of Landcare Research, that are mostly supported by vouchers in CHR, and from members of the Canterbury Botanical Society who covered the lowland portion during their summer camp in 1998. For the latter area, the most 'interesting' records are supported by vouchers. The list is held in the Landcare Research library at Lincoln.

The list includes 449 indigenous species and 51 adventive species. It fills a gap between the areas covered by earlier lists (Wardle 1968, 1975, 1980). A number of entries extend the known northern and southern limits of species in Westland. The absences from central Westland of whipcord hebes, vegetable sheep, *Nothofagus*, and several other plants that occur to the north and south are supported. Southern species that apparently do not quite reach the Wanganui catchment from the south include *Dracophyllum fiordense* (upper Whataroa, *fide* Miles Giller) and *D. menziesii* (Cook River). The record of *Carmichaelia juncea* is based on a specimen (CHR 34898) collected by Ruth Mason that is probably correctly identified (Peter Heenan pers. comm.), but a search should be made for better material. Inevitably, species are missed during single visits. One such may be *Elaeocarpus dentatus,* which is known from adjacent localities to the north and south.
Comments on entries in the list:
Aciphylla colensoi. Mt Adams, on the southern side of the Poerua River, is the southernmost known locality in Westland supported by unambiguous herbarium material. Plants from further south that have been referred to this species are probably robust forms of *A. crenulata.*
Callitriche petriei. According to Webb *et al.* (1988) not known between latitudes 42 and 45°S, but it is quite common on the Westland lowlands.
Carex libera. Once regarded as a western Nelson species, it is now known from several western localities, southwards to Mt Aspiring National Park.
Chionochloa rubra subsp. *occulata.* The southernmost locality recorded from the Westland mountains, until the valleys sourcing in the Hooker Range are reached. However, it grows nearer the coast, on the high moraines between the Waiho and Cook Rivers.
Epilobium pernitens. No Westland localities given in Raven & Raven (1976), but has been collected from scattered alpine localities since then.
Kunzea ericoides. Listed from the lowlands, but needs confirmation, as the southernmost verified limit in Westland is the Arahura Valley.
Ourisia lactea. The southernmost locality represented in CHR.
Ourisia crosbyi. The northernmost locality represented in CHR.
Pittosporum eugenioides. 15 km north-east from the southernmost known wild population on the Whataroa flats.
Rhopalostylis sapida. A single young palm grows on the ridge between the mouths of the Wanganui and Poerua Rivers (referred to by Wardle, 1980). More plants grow on a coastal slope north of the Wanganui mouth.

References

Jane, G.T.; Wardle, P. 1998. A list of vascular plants from the Wanganui River Catchment, South Westland. Landcare Research Ltd, unpublished.
Raven, P.H.; Raven, T.E. 1976. The genus *Epilobium* (Onagraceae) in Australasia: a systematic and evolutionary study. *N.Z. DSIR Bulletin 216.*
Wardle, P. 1968: A floristic list for the Hokitika catchment. *New Zealand journal of botany 6:* 523.
Wardle, P. 1975: Vascular plants of Westland National Park and neighbouring lowland and coastal areas. *New Zealand journal of botany 13:* 497-545.
Wardle, P. 1980: Floristic notes for the region between the Taramakau and Haast Rivers, Westland, New Zealand. *New Zealand journal of botany 18:* 53-59.
Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J. 1988. Flora of New Zealand Volume IV. Naturalised Pteridophytes,

Gymnosperms, Dicotyledons. Botany Division, DSIR, Christchurch.

Graeme Jane, 136 Cleveland Terrace, Nelson and **Peter Wardle**, Landcare Research, PO Box 69, Lincoln

■ Recent discoveries of rare small-leaved shrubs and trees from Otago and Southland

Introduction

We report on recent field survey targeting small-leaved shrub and tree communities likely to contain rare species within Otago and Southland. Communities of small-leaved and often divaricating species occurred frequently as an understorey component of *Prumnopitys taxifolia* and *Dacrycarpus dacrydioides* forest or as a community in their own right. These latter sites were characterised by cold air inversion and/or poor drainage, sufficient to exclude tall trees on alluvial flats. Several provincially significant finds of *Coprosma obconica*, *Coprosma wallii*, *Olearia hectorii*, and *Pittosporum obcordatum* are reported. Notes on *Olearia fragrantissima* and *Melicytus flexuosus* are also provided.

Olearia hectorii

The only herbarium record of *Olearia hectorii* from the Catlins and eastern Southland was a 1936 one from Rapanui [sic] near Owaka (CHR 17334), and the species was presumed to be extinct locally after a search in 1994 (Rogers 1996). Literature references to it from this region were: Petrie (1895) from Kaitangata, Catlins, Invercargill and others; Crosby-Smith (1913) from Wyndham and Otautau; and Poppelwell (1919) from the north-eastern Hokonui Hills. Petrie (1891) commented.... " this species is common by the open banks of streams and in swampy situations at Catlins River, where it is known as the 'swamp gum' ". Nonetheless, in the last 12 months, 17 discoveries of small, albeit much fragmented, populations now confirm its former distribution and probable abundance throughout the zone from western Southland across to the northern Catlins on the east coast of Otago.

Table 1. Recent records of *Olearia hectorii* from Southland and the Catlins district of Otago.

Ecological District	Locality	Population	Grid Reference NZMS 260	Number of trees	Date
Tuatapere	Waiau River	Clifden	D45 013512	41	9/98
Southland Plains	Oreti Valley	Taringatura Camp	E45 467 587	1	6/96
	Hedgehope	Mabel Bush N. R.	E46 828311	1	
Hokonui	Croydon Bush	Richardson Road	F45 920527	28	1/95
	Croydon Bush	Dolamore Park	F45 868526	7	11/97
	Hedgehope	Dunsdale	F45 701436	2	11/97
Waipahi	Stoney Peak		G45 213432	1	1/98
Balclutha	Puerua River	Otanamomo Sci. Res.	H46 584293	3	3/98
Tahakopa	Wyndham	Burns Road	F46 915 256	1	9/95
	Wyndham	Glenham	F46 920 165	1	4/95
	Glenomaru Stream		H46 534197	3	5/97
	Owaka River	Seaview	G46 452161	1	9/97
	Owaka River	McNabbs	G46 482146	13	6/97
	Owaka River	Upper Mitchells	G46 475137	13	7/98
	Owaka River	Lower Mitchells	G46 487146	6	9/97
	Owaka River	Katea Road	H46 514145	1	9/97
	Owaka River	Main Road bridge	H46 545131	2	9/97

We now have records from western, central, and eastern Southland, and the northern Catlins in Otago (Table 1). In all instances, the species occupies colluvial toeslope or riparian, valley

floor habitat across a range of forest types including beech, podocarp, hardwood and combinations thereof. These new records confirm the habitat types described by Rogers (1996) for populations elsewhere. Nevertheless, all these communities are highly modified, with *O. hectorii* confined to edges and light gaps in otherwise secondary forest and scrub. In Southland, common associates are *Sophora microphylla*, *Griselinia littoralis*, *Carpodetus serratus*, *Pittosporum tenuifolium*, *P. eugenioides*, *Podocarpus hallii*, *Prumnopitys taxifolia*, and *Coprosma linariifolia*. Virtually all the Catlins' populations exist as isolated old trees in farm pasture, with or without relicts of the previous *Prumnopitys taxifolia-Dacrycarpus dacrydioides-Sophora microphylla-Hoheria angustifolia* forest. Some remnants are targeted for species restoration and community rehabilitation by the Department of Conservation.

Coprosma obconica

Coprosma obconica was virtually unknown from southern South Island except for a 1948 record of R. Bieleski from Allens Flat near Lake Monowai (AKU 4804). Present local botanists have no knowledge of the location of Allens Flat, making relocation of the record difficult. Nonetheless, this species has been discovered recently at five southern localities, three in Southland and two in Otago. The first is from Etal ridge, Taringatura Ecological District just east of the Takitimu Mountains, western Southland on rolling hill country within a hardwood forest of *Sophora microphylla* and *Griselinia littoralis*. On stony outcrops within the hardwood forest, scrub of *Olearia ilicifolia*, *O. fragrantissima*, *Brachyglottis cassinioides*, and *Dracophyllum longifolium* occurs. Eleven species of small-leaved coprosmas were recorded from these patches, along with numerous other small-leaved shrubs. This isolated hardwood forest is more or less surrounded by extensive *Nothofagus menziesii* forest covering the rest of the ridge and district, and it seems inevitable that the beech community will eventually reclaim the site in its Holocene-long adjustment to contraction during the last glaciation. Another population of *C. obconica* has just been discovered in *Prumnopitys taxifolia-Podocarpus totara-P. hallii* forest of Broadlands Bush on alluvial flats of the Waiau River between Monowai and Clifden. This is another diverse community with *Nothofagus solandri* var. *cliffortioides*, *Lophomytus obcordata*, *Pseudopanax ferox*, *Sophora microphylla*, *Melicope simplex*, numerous small-leaved coprosmas, *Melicytus* sp. unnamed (cf. *M. alpinus*), and *Pittosporum tenuifolium*. The third western Southland record comes from a non-beech hardwood forest of *Sophora microphylla-Griselinia littoralis-Pittosporum tenuifolium* at Blackmount on the lower western flanks of the Takitimu Mountains.

The first Otago record of *Coprosma obconica* was one shrub from a toeslope of a gorge near the mouth of the Akatore Creek, between Dunedin and Milton. Again the species occurs within a diverse hardwood forest and small-leaved shrub community of *Prumnopitys taxifolia*, *Hoheria angustifolia*, *Podocarpus totara*, *Melicope simplex*, *Coprosma crassifolia*, *Melicytus flexuosus*, *Melicytus* sp. unnamed (aff. *M. alpinus*), *Olearia fragrantissima*, *Carmichaelia petriei*, *Fuchsia excorticata*, and *F. perscandens*. The fifth record is from scrub on the flanks of Scotsmans Bonnet, a prominent rock pedestal composed of fractured Cretaceous sandstone of the Southland syncline, which towers above the surrounding Owaka valley in the northern Catlins. The juvenile leaves of *C. obconica* often have distinct brown blotches on dull green leaves, while adult leaves often have apiculate leaf apices and thickened margins.

Site differences between these five southern records suggest wide community and substrate tolerances for the species. However, *Coprosma obconica* is very much a basicole (S. Courtney pers. comm. 1998). About Nelson, it occurs on the castellated rock summits of Mt Burnett, on areas mapped geologically as dolomite and marble, on pure marble on Walker Ridge and on Takaka Hill, on Summit Limestone in the Cobb Valley, on calcareous mudstone at the south end of the Matiri Plateau (a recent record), on alluvium at Wakefield, and in the Howard, mid-Matakitaki and Wairoa valleys, on ophiolite on Dun Mountain, on limestone in the Wairoa, siliceous limestone on Isolated Hill, and in the deeply-shaded understorey of podocarp forests of *Prumnopitys taxifolia* and *Dacrycarpus dacrydioides* on alluvial flats in the Hautapu valley, Taihape. Another subspecies occurs on ultramafic substrates at Surville Cliff, North Cape. The species is also known from at least six Canterbury sites. Its bimodal habitat preferences are therefore shaded understoreys of podocarp/hardwood or beech forest on alluvial flats or exposed promontories of rubbly substrates at altitude with low-growing and open vegetation.

Table 2. Recent records of *Coprosma obconica* from Southland and east Otago.

Ecological District	Locality	Population	Grid Reference NZMS 260	Number of trees	Date
Taringatura	Aparima River	Etal ridge	D44 242825	20+	5/97
Takitimu	Waiau valley	Broadlands Bush	D45 975598	63	10/98
	Takitimu Mountains	Blackmount Station	D44 993 830	c. 10	9/98
Tokomairiro	Akatore Creek	Gorge near river mouth	I45 916519	1	10/97
Tahakopa	Owaka valley	Scotsmans Bonnet	G46 483149	?	6/98

Coprosma wallii

In the South Island, *Coprosma wallii* was recorded originally south to mid Canterbury in the east and Haast in the west, but because of several recent discoveries it should be regarded as part of the regional flora (Table 3). The first southern record was in 1997 from Etal ridge, Taringatura Ecological District (see account of *Coprosma obconica* above for community details). More recently it has been found at Taylors Bush in the Waiau Valley, at Blackmount Station in the lower flanks of the western Takitimu Mountains, at Mabel Bush Nature Reserve on the Southland Plains, Dunsdale Stream in the Hokonui Hills, and throughout the Catlins at Tahakopa valley, at Duckaday Creek, where *Pittosporum obcordatum* was discovered not long ago (see below), at Long Beach Creek, and the odd tree occurs within pasture at Glenomaru valley. Its consistent habitat in these sites is frosty and poorly drained valley flats where the competition from taller trees such as *Prumnopitys taxifolia*, *Podocarpus totara*, and *Dacrycarpus dacrydioides* is reduced. Most sites appear to have elevated water tables during winter. Typical associates in frosty wet valley floors in the Catlins are tall *Plagianthus regius* over *Olearia lineata*, *Melicytus flexuosus*, *Coprosma propinqua*, *C. decurva*, *C. rigida*, *C. rotundifolia*, *Raukaua anomalus*, *Pseudowintera colorata*, *Olearia virgata* var. *laxiflora*, *Polystichum vestitum*, and *Rubus schmidelioides*. The exception is the Etal ridge community where it occurs in open hardwood forest on stony rolling hill country. Black, flaking bark, deep red cambium, and coriaceous, dull, olive green leaves are useful diagnostic characters of *Coprosma wallii* in the maze of small-leaved shrubs and trees that frequent wet and frosty valley flats.

Table 3. Recent records of *Coprosma wallii* from Otago and Southland.

Ecological District	Locality	Population	Grid Reference NZMS 260	Number of trees	Date
Taringatura	Aparima River	Etal ridge	D44 242825	50+	5/97
Tuatapere	Waiau valley	Dean Burn	D45 948627	1	10/98
Takitimu	Taylors Bush		D44 945736	2	
	Takitimu Mountains	Blackmount Station	D44 993 830	c. 10	9/98
Southland Plains	Mabel Bush N. R.		E46 828311	1	
Hokonui	Dunsdale		F45 709448	114	11/97
Tahakopa	Glenomaru Stream		H46 534197	3	5/97
	Tahakopa valley	Gorge Stream	G47 228091	c. 20	9/98
	Hukihuki Creek		G47 306944	4small trees	11/97
	Owaka valley		G46 476137	2small trees	7/98
	Duckaday Creek	McLean Falls	G47 299977	2	8/96
	Long Beach Creek		G47 215962	20+	9/96

Pittosporum obcordatum

Until recent years, the population of *Pittosporum obcordatum* at Back Valley, Lake Manapouri was its only South Island provenance. Peter Wardle and Miles Giller on discovering *Pittosporum obcordatum* near McLeans Falls, Duckaday Creek in Catlins Conservation Park (see footnote in Clarkson & Clarkson 1994; Simpson 1995) raised "the possibility of further populations being discovered" in similar valley floor habitat. One lone tree of *P. obcordatum* in

a scruffy stand of secondary forest on a hillslope in the Glenomaru valley just south of Balclutha confirms their prediction. The fragmented forest contains six species on the New Zealand Botanical Society Threatened and Local Plant Lists (Cameron et al. 1995), namely *P. obcordatum*, *Melicytus flexuosus*, *Tupeia antarctica*, *Coprosma wallii*, *Olearia hectorii*, and *O. fragrantissima*. Interestingly, five of the six are sympatric in the Hautapu valley, Taihape (*O. fragrantissima* absent), pointing to similar habitat conditions (see also Ogle & Barkla 1995).

Two further trees of *Pittosporum obcordatum* have been discovered in farmland adjacent to Purakauiti Stream in the northern Catlins. These two trees were overturned by wind or flood, with just a small portion of their root-plates still attached, yet both were still very much alive. Their habitat was a bank of a meandering stream within a tiny remnant of forest surrounded by grazed pasture. So, outside Back Valley, three further populations are now known consisting of five individuals only, and all in the northern Catlins. Such sites represent complex recovery propositions for conservation managers. It seems likely that *P. obcordatum* will turn up in other valley flats and adjoining hillslopes in Tahakopa Ecological District.

Previous accounts of the ecology of the species have highlighted its distinctive habitat – lowland valley flats experiencing winter frost and waterlogged soils in winter (Morrison 1982; King 1986; Clarkson & Clarkson 1994; Simpson 1995). Indeed, Sainsbury (1923) noted that *P. obcordatum* appears to be "exclusively a swamp plant, as it has never been found in a hilly or dry locality". However, the one low tree at Glenomaru occurs on a dry hillslope beneath a 7 m canopy of *Olearia fragrantissima* (with parasitic *Tupeia antarctica*), *Podocarpus hallii*, and *Sambucus nigra* (elder). Perhaps forest clearance for agriculture provided atypical establishment opportunities for the species in a disturbed site.

Table 4. Recent records of *Pittosporum obcordatum* from the Catlins district, east Otago.

Ecological District	Locality	Population	Grid Reference NZMS 260	Number of trees	Date
Tahakopa	Glenomaru Stream		H46 534198	1	5/97
	Purakauiti Stream	Purakaunui Falls S.R.	G47 444037	2	8/98

Melicytus flexuosus

Numerous populations numbering between one and over a hundred individuals have been found in the understoreys of remnants of *Prumnopitys taxifolia-Dacrycarpus dacrydioides* forest on the Southland Plains and within small-leaved shrub and tree communities of cold damp flats about the Catlins. All size classes are represented in many populations, pointing to pulses of regeneration. Two ecologically unusual records from the Biological Survey of Reserves Series are from islands within Lake Wanaka and Lake Benmore, the latter in the Waitaki valley. There is also an interesting 1979 record from east Otago from the Waitahuna valley near Lawrence (CHR 362430) (C. Ogle pers. comm.). These records will be investigated further this summer. *M. flexuosus* is very much a shade-tolerant species of forest understoreys on cold, damp alluvial flats in Southland and east Otago, but it prospers and has greatest reproductive vigour on forest margins.

Olearia fragrantissima

Numerous populations in the Taringatura and Hokonui Ecological Districts and in eastern Otago now provide a reliable picture of its habitat requirements in southern South Island. It grows principally in stressed or marginal sites for forest, where thin or rubbly soils and/or exposure lower forest biomass and stature to approximately 9 m or less. It favours the more frost-prone lower slopes of valleys, inland rocky spurs and ridges, and wind-swept promontories along the coast. At Nugget Point in the northern Catlins it forms a multi-leadered and windshorn scrub 2–3 m high. Nevertheless, in more sheltered forest it adopts single-stemmed architecture to compete with other hardwood trees with canopies to 10 m or more.

Coprosma sp. unnamed (aff. *C. parviflora*, *C.* sp. (v) of Eagle 1982)

Finally, *Coprosma* sp. unnamed (aff. *C. parviflora*, *C.* sp. (v) of Eagle 1982), another rare, small-leaved tree has yet to turn up south of mid Canterbury, although ostensibly suitable,

albeit much modified, seasonally wet alluvial habitat seems available in parts of Otago and Southland.

Discussion

In total, these discoveries demonstrate that alluvial valleys of the Catlins are major ecological assets, likewise the scraps of alluvial and riparian forests throughout lowland Southland. Their limited present protection makes further acquisition essential. They are mostly edge in micro-climatic character, as opposed to interior, and limited in their carrying capacity for native birds. Ecosystem considerations in reserve design embracing catchment sequences of hydrology, landforms, and vegetation are at present unrealistic when applied to these sharp-edged remnants in paddocks. Encouragingly, almost all stands have private owners who support moves to recognise and protect their natural values.

Population studies of individual constituents of small-leaved shrub and tree communities on cold, damp flats have, to date, targeted *Pittosporum obcordatum*, *Olearia hectorii* s.l., *Melicytus drucei*, and *Olearia capillaris*. Publicity of such studies almost invariably results in extra finds, leading to range extensions and insights into the processes regulating their habitats. Botanists have long recognised the ecological and biological significance of these small-leaved shrublands, especially since Tony Druce "got his eye in" for the habitat of *Coprosma* sp. unnamed (aff. *C. parviflora*, *C.* sp. (v) of Eagle 1982) two decades ago in the Wairarapa, southern Hawke's Bay, and mid-Canterbury. They are typically unwelcoming environments for survey – impenetrable walls of nondescript entanglements, often hiding the ooze of cut-off meanders and ox-bows. They are at their most forlorn as drained and heavily-stocked valley paddocks with the odd *Coprosma wallii*, sentinels to imagined ecological richness, as in the Maruia valley, central Westland. Apparently "hopeless" prospects for ecosystem recovery, they need research urgently into habitat processes, trophic levels of fragmentation, and prospects and directions for reconstitution. The almost universal weedy performance of *Muehlenbeckia australis* in such communities requires elaboration and understanding and, perhaps, efficient control techniques. Further, DoC's "mainland island" initiative in the Hautapu valley, Taihape will address the perennial issue of planting strategies to combat exotic grasses and forbs in these modified flats and enhancement of landscape disturbance factors that stimulate regeneration of several rare species, among them *Olearia hectorii* s.l. However, so aggressive are the introduced grasses that, even with slump and flooding events and provision of raw pavements, recruitment for the rare plant populations will probably rely on planting out nursery stock in the foreseeable future.

Postscript

As this article went to press a large population of *Coprosma* sp. unnamed (aff. *C. parviflora*, *C.* sp. (v) of Eagle 1982) was found in an alluvial forest in western Southland, along with several other rare small-leaved trees and shrubs. The biogeographic and ecological significance of this large, intact forest will be addressed in a separate article.

Acknowledgements

We thank Amber Bill, Peter de Lange, Cheryl Mudford, and Mark Townsend for field help, Brian Patrick for an *Olearia hectorii* record, Shannel Courtney for Nelson/Marlborough records and substrates of *Coprosma obconica*, Peter de Lange for herbarium information, and Colin Ogle for improving a draft.

References

Cameron, E.K.; de Lange, P.J.; Given, D.R.; Johnson, P.N.; Ogle, C.C. 1995: Threatened and local plant lists (1995 revision). *New Zealand Botanical Society newsletter 39*: 15–28.

Clarkson, B.D.; Clarkson, B.R. 1994: Ecology of an elusive endemic shrub, *Pittosporum obcordatum* Raoul. *New Zealand journal of Botany 32*: 155–168.

Crosby-Smith F.L.S. 1913: List of Phanerogamic plants indigenous in the Southland District. *Transactions and Proceedings of the New Zealand Institute 46*: 220–246.

Eagle, A. 1982: Eagle's trees and shrubs of New Zealand. Collins, Auckland.

King, W.M. 1986: *Pittosporum obcordatum* – its niche at Back Valley, Lake Manapouri, Fiordland National Park. Unpublished report, University of Otago.

Morrison, J.V. 1982: Fiordland National Park – a new locality for the divaricating shrub *Pittosporum obcordatum* Raoul. *New Zealand journal of botany 20:* 195–196.

Ogle, C.C.; Barkla, J.W. 1995: *Brachyglottis sciadophila* at Mataroa, Taihape: a new record for the North Island. *New Zealand Botanical Society newsletter 40*: 7–9.
Petrie D. 1891 ["1890"]. Descriptions of new native plants, with notes on some known species. *Transactions of the New Zealand Institute* 23: 398–407.
Petrie D. 1895: On the flowering plants of Otago. *Transactions of the New Zealand Institute 28*: 540–591.
Poppelwell D.L. 1919: Notes on the indigenous vegetation of the north-eastern portion of the Hokonui Hill, with a list of species. *Transactions of the New Zealand Institute 52*: 239–247.
Rogers, G.M. 1996: Aspects of the ecology and conservation of the endangered tree *Olearia hectorii* in New Zealand. *New Zealand journal of botany 34*: 227–240.
Sainsbury, G.O.K. 1923: Notes on *Pittosporum obcordatum*. *Transactions of the New Zealand Institute 54*: 572–573.
Simpson, N. 1995: *Pittosporum obcordatum* in Catlins Forest Park. *New Zealand Botanical Society newsletter 41*: 8–9.

Geoff Rogers, Science and Research Unit, Science Technology and Information Services, Department of Conservation, PO Box 5244, Dunedin; **John Barkla**, Department of Conservation, PO Box 5244, Dunedin; **Brian Rance**, Department of Conservation, PO Box 743, Invercargill; **Neill Simpson**, Conservation Consultancy Ltd, PO Box 478, Queenstown

Comment

■ Are moths and their caterpillars good botanists?

The following four endemic New Zealand moths are specialist feeders on the shrub daisy *Helichrysum lanceolatum* (=*H. aggregatum*) (Asteraceae). I have reared all four moths from this shrub from many places in the South Island. All are considered monophagous on this shrub species.

Noctuidae (Nolinae)
1. *Celama parvitis* Howes 1917

Choreutidae
2. *Asterivora chatuidea* Clarke 1926

Geometridae (Larentiinae)
3. Helastia triphragma (Meyrick 1883)

Nepticulidae
4. *Stigmella tricentra* (Meyrick 1889)

The first two species have their type localities in the Dunedin area and are locally abundant there. Both have populations in the Dunedin Botanic Gardens on *H. lanceolatum* where they are also exposed to another shrubby daisy species that does not grow naturally as far south as Dunedin. This shrub species, *Olearia capillaris*, does bear some resemblance to *H. lanceolatum*, in terms of leaf size, shape, thickness, tomentum, shrub size and amount of litter retained on branches.

Recently I have observed the larvae of both *C. parvitis* and *A. chatuidea* feeding on *O. capillaris* in the Dunedin Botanic Gardens. These have been reared to adults. Their larvae behaved exactly as they do on *H. lanceolatum*.

Based on this observation I believe more research is warranted on the systematic relationship of these two endemic New Zealand daisy shrub species.

Brian Patrick, Otago Museum, PO Box 6202, Dunedin

BIOGRAPHY/BIBLIOGRAPHY

■ Tribute to pioneer plant pathologist and mycologist, Dr Joan Dingley

Plant pathology and mycology have long been facets of botanical science in New Zealand in which women scientists have made significant contributions. New Zealand's leading pioneer woman scientist, Lady Kathleen Rigg (Dr Kathleen Curtis, 1892–1994) was a plant pathologist (23). Another pioneer in plant pathology and mycology has been Dr Joan Dingley (b. 1916). Both are included in the compilation of the most notable women scientists in New Zealand

(Thomson, unpublished data). Other pioneers in mycology include Dr Greta Stevenson Cone (1911–1990), Dr Barbara Segedin (b. 1923), and Dr Ruth Elliott Watson (b. 1922). Some pioneer women scientists who have spent briefer periods in plant pathology and mycology research include Mrs Shirley Brook (b.1928), Mrs Margaret Orman (b.1926), and Mrs Marie Taylor (b. 1930).

Leading contemporary women researchers in plant pathology and mycology include Dr Alison Stewart (b. 1957) and Dr Ann Bell (b. 1941).

Like Lady Rigg, Dr Joan Marjorie Dingley has had a professional career in mycology and plant pathology. However, whereas Lady Rigg's contribution to taxonomic mycology was limited and included the publication of just one paper on taxonomy, the description of a new genus of phalloid fungi, *Claustula*, Joan specialised in taxonomic mycology with horticulture as an additional theme in her work, especially from the botanical viewpoint.

Born in Auckland, Joan's mother and father came from Presteigne in Wales (Radnorshire). Her father died when she was nine and her mother was a widow for the second time. Joan records (14) that her mother's family, "...were country people and all keen gardeners." She was educated at the Primary level at The Ladies College at the top of Victoria Avenue, Remuera, Auckland, run by the Misses Moore-Jones, and Joan records, "Miss Winnie Moore-Jones gave me the only training I had in botany before varsity." As a child her mother often took her on family tramping trips into Auckland's indigenous forests, and her father exposed her to a range of exotic fruits he received from island traders during the course of his stevedoring business in Auckland. Joan's early formative years are referred to by Martin (20, p. 8) who quotes from Joan, "As a child, we were given pocket money to help look after the vegetable garden. I was also given my own piece of garden. I used to grow weeds in rows, weeds that I thought were attractive and different."

Joan attended Diocesan School for Girls in Auckland, "I was not a bright student, reading through my school reports. The only theme I excelled in was being a flower monitor. At school I was probably more interested in music than horticulture and botany. I decided after a lot of discussion it would be hard to make a living out of music and a lonely one, so went to Auckland University College to study science – majoring in zoology and botany" (14).

Joan graduated B.Sc. (1939) and M.Sc. (1942) in botany from Auckland University College with an M.Sc. thesis on the ecology and morphology of the tree-fern, *Dicksonia squarrosa* (wheki). Regarding her thesis research she records, "I had the privilege to disprove Bower's [world famous botanist F.O. Bower, 1855–1948] stelar theory in ferns and showed that the dictyostelar structure was related to the number of leaves associated with the apex." Her thesis research was not published. The important observations she made on the growth-form of the wheki were recorded by her old friend and mentor Marguerite Crookes (1895–1991), in her revision of Dobbie's "New Zealand Ferns" (18, p. 122). Joan, in recent years, wrote an excellent account of Marguerite's life and work (13).

Joan was appointed to the staff of the former DSIR's Plant Diseases Division at Mt Albert in 1941. It was wartime and the Director of Plant Diseases Division (G.H. Cunningham, 1892–1962) recommended the appointment of a woman because, "I do not wish to appoint a man of military age and know of no other suitable to undertake the work" (2). At this time very few women held research positions in Government-sponsored science in New Zealand and Joan's appointment was a notable advance for New Zealand women in science. Cunningham was not known for his support of women in science and was somewhat of a controversial character (see 22), but a leading figure in New Zealand science and our foremost plant pathologist and mycologist. He was a formidable character. Joan was able to develop a rapport with Cunningham which was no mean achievement and she completed 35 years of distinguished service to plant pathology and mycology, retiring from the DSIR in 1976. Joan has also commented (see 20, p. 8) on the situation of being a woman in what was more of a man's world at Mt Albert (14), "Yes being a woman amongst men did have disadvantages G.H. Cunningham loved running Kathleen Curtis [Lady Rigg] down...but must say he always gave me very good support....".

The correct diagnosis of the cause of a plant disease is, of course, a prerequisite for control measures. Joan helped to provide this service at the DSIR's Plant Diseases Division. The Herbarium is an essential resource for effective taxonomic studies which provide the primary discipline for disease diagnosis. The Plant Diseases Division Herbarium is the most important facility of its kind in New Zealand with a world ranking. As Herbarium Keeper, Joan had the task of maintaining and expanding this facility. It contained about 4000 specimens when she commenced work at Mt Albert and about 35,000 at the time of her retirement (1,20). Joan's studies on the taxonomy of fungi provided a framework for the research on the control of plant diseases by her (mostly male) colleagues. Her general knowledge of botany also provided an important service to her colleagues in the days before a botanical specialist (A.E. Esler, b.1929) was appointed to Plant Diseases Division in 1969 to form a substation of DSIR's Botany Division.

After joining Plant Diseases Division in 1941 Joan's first task was to study rot-proofing of canvas used in the Pacific War theatre during World War II. Many aspects of research in DSIR were directed to problems relating to the war effort in the 1940s. The study on canvas rotting was a joint project with R.M. Brien (1905–1963) and established the down-to-earth attitude to research that characterised Joan's career. The research was published in two articles in the *N.Z. Journal of Science and Technology* (4, 5) and was the first research published by Joan. At the age of 30 she had published these two papers.

The names Brien and Dingley are also associated with the foundation of the formal records of plant diseases in New Zealand. These records, compiled with great care and accuracy, became the "bible" for plant pathologists, and especially important for officers of the Plant Quarantine Service. The records were first published by Brien in 1939 (3) with supplements in 1942 and 1946, and then by Brien and Dingley in 1951 (6) as "A Revised List of Plant Diseases Recorded in New Zealand". Four supplements to this list were published and the records were consolidated into a book by Joan published in 1969, "Records of Plant Diseases in New Zealand" (12), a thoroughly reliable and important record for both specialists involved with plant diseases, and gardeners and horticulturists in general. After Joan's retirement the responsibility for maintaining the records was taken over by S.R. Pennycook and "Plant Diseases Recorded in New Zealand" was published in three volumes in 1989 (21).

In the field of taxonomic research Joan's special interest was in the Hypocreales and her studies were recorded in eight articles in *Transactions of the Royal Society of N.Z.* The genus *Nectria* received attention from Joan (9). She made pioneering discoveries on the relationships between the perfect and imperfect stages in the life histories of these fungi. Her expertise on groups such as the Fungi Imperfecti was always available to colleagues and every enquiry on taxonomic matters was given her full and careful attention. Joan played a leading role in the effort to identify the cause of the facial eczema disease which had exercised the minds of researchers in New Zealand for many years, especially in the 1950s and 1960s. The discovery of the fungal cause of the disease ranks as one of the great achievements of New Zealand biological science. Her studies on the fungus *Pithomyces chartarum* were published in three papers (10, 11, 16) and helped provide a framework for research on this intractable problem in New Zealand agriculture. Late in her career Joan became deeply involved in the preparation of records of plant diseases found on the islands of the South-west Pacific as part of a New Zealand contribution to these island nations. This study was published with R.A. Fullerton and E.H.C. McKenzie in 1981 (17).

In total, Joan has published some 51 articles in a range of venues, but mostly in New Zealand science journals which reflects the New Zealand emphasis of her research and its applied importance.

Mention should be made of an additional important contribution Joan made to taxonomic mycology. After the death of G.H. Cunningham in 1962, his monograph "The Thelephoraceae of Australia and New Zealand" (7) remained unpublished and Joan assisted in seeing the monograph through to publication. Cunningham's other major monograph "Polyporaceae of New Zealand" (8) was also incomplete at the time of Cunningham's death and Joan prepared the incomplete manuscript for publication. The latter, especially, was a task of some magnitude. She

was the only taxonomic mycologist in New Zealand capable of completing this publication. The effort on behalf of a deceased colleague is a reflection of Joan's expertise in mycology, and her dedication and loyalty to the work of a colleague. It was entirely appropriate that Joan should write the entry of Cunningham in Volume 4 of "The Dictionary of New Zealand Biography" (15).

Beyond her professional career in taxonomic mycology and plant pathology, Joan has had a lifelong interest in horticulture. The old family home in Remuera where Joan has lived all her life has an excellent garden with many horticultural treasures. For more than 30 years she has been a stalwart of the Royal N.Z. Institute of Horticulture and helped to establish the Society's horticultural training scheme, operated through the Technology Institutes. She was an examiner for over 10 years and played a full part in the administration of the Royal N.Z. Institute of Horticulture, serving for 10 years as a member of the Dominion Council, as a member of the examining Board, as Convenor of the Award of Garden Excellence Subcommittee and as member of the Auckland District Council Committee.

In the 1960s Joan joined with H. Beaumont, P.J. Jew, R.C. Cooper, J. Kealey and, with the help of Professor V.J. Chapman (1910-1980) of the University of Auckland's former Department of Botany, lobbied local authorities in Auckland to establish a Regional Botanic Garden. It had been a long-felt need in Auckland and Joan more than anyone appreciated the need. The Regional Gardens were opened in 1982 and at the official opening her contribution was recognised. She has continued to give her enthusiastic support to the Gardens and in 1987 was elected an Honorary Life Member of the Friends of the Auckland Regional Botanic Gardens. She has served for seven years as a member of the Gardens Technical Advisory Committee and was Chairperson of the Native Plant Evaluation Committee.

Joan, during her career in DSIR, travelled overseas, "...often with very meagre support from New Zealand" (2), especially to examine reference specimens retained at the Commonwealth Mycological Institute and the Royal Botanic Gardens at Kew. She also examined reference specimens in other European and North American Herbaria. The Commonwealth Mycological Institute is, of course, the mecca for mycologists and New Zealand mycologists, including G.H. Cunningham and Lady Rigg, maintained a close relationship with the organisation which has provided a great service for the correct identification of fungi and a clearing-house for world knowledge on fungi and plant diseases. Joan, in 1952, took a year's leave without pay from DSIR to study at the C.M.I., especially with E.W. Mason and R.W.G. Dennis. Her Director, G.H. Cunningham gave her letters of introduction to the leading mycologists in England. Then, in 1958, she had ten months leave on pay and expenses to visit Herbaria in Paris, Stockholm, and Strasburg. On this visit she was seeking out the type specimens of fungi in the Hypocreales, an essential need when studying any group of fungi. Again, in 1962, Joan spent three months in U.S.A. and Canada to assist in her studies on the taxonomy of fungi. In 1965 she spent six months at Kew and the C.M.I. examining plant disease fungi, especially in relation to Plant Quarantine. In 1970 she attended the International Mycological Congress at Exeter, and in 1973 the International Symposium on the Taxonomy of Fungi at the University of Madras. At both meetings she read papers on the life-histories of the Hypocreales. On this trip overseas she also visited Singapore and New Guinea to see colleague Dr Egon Horak and examine mushroom fungi in the New Guinea beech forests. Finally, during the period 1974–77 Joan participated in the survey of agricultural pests and diseases in the Cook Islands, Fiji, Kiribati, Tonga, Tuvalu, and Western Samoa and made a collecting trip to the Cook Islands.

Joan's international status in mycology is reflected by her invitation to attend International conferences and present the findings of her research. Overseas researchers, including G. Samuels and Egon Horak, travelled to New Zealand to work with her. In a personal way her international status was recognised by J.M. Trappe who named the fungus genus *Dingleya*, "...in honour of New Zealand mycologist Joan M. Dingley". Honours from within New Zealand have also been conferred on Joan. One honour must give her much joy – she was presented with the Diocesan School for Girls *Alumna Merita* Award in 1990 for services to science. Though Joan disclaims any scholastic prowess at Secondary School, perhaps the fact that she excelled as a flower monitor was a portent for her distinguished career in botanical science. Joan's contributions to many aspects of horticulture were among her achievements. These contributions

were recognised by her election as a Fellow of the Royal N.Z. Institute of Horticulture (1965) and she was elected an Associate of Honour in 1969. Her most recent honours have been an Honorary D.Sc. from Massey University (1994) and an O.B.E. in the Queen's Birthday Honours in 1995.

Acknowledgements

Drs R.L. Bieleski, A.R. Ferguson and R.E. Beever kindly provided biographical data relating to Dr Dingley.

References

1. Anonymous. 1977: Her job is also a hobby that continues. *N.Z. Herald,* 7 February. 2. Bieleski, R.L. and Ferguson, A.R. 1993: Biographical notes relating to Dr Dingley, received 14 August. 3. Brien, R.M. 1939: A list of plant diseases recorded in New Zealand. *DSIR Bulletin 67.* 39 pp. 4. Brien, R.M. and Dingley, Joan M. 1945: Rot-proofing of canvas: preliminary report on experiments carried out in 1944–45. *N.Z.Journal of Science and Technology 27B:* 133–138. 5._____1946: Rot-proofing of fabrics: comparative experiments using different test fungi. *N.Z.Journal of Science and Technology 28B:* 133–135. 6._____1951: A revised list of plant diseases recorded in New Zealand. *DSIR Bulletin 101.* 62 pp. 7. Cunningham, G.H. 1963: The Thelephoraceae of Australia and New Zealand. *DSIR Bulletin 145.* 359 pp. 8._____1965: Polyporaceae of New Zealand. *DSIR Bulletin 164.* 304 pp. 9. Dingley, Joan M. 1957: Life-history studies of New Zealand species of *Nectria* Fr. *Transactions of the Royal Society of N.Z. 84:* 467–477. 10._____1962: *Pithomyces chartarum,* its occurrence, morphology and taxonomy. *N.Z. Journal of Agricultural Research 5:* 49–61. 11._____1964: Distribution of *Pithomyces chartarum:* growth and morphology of different strains in microbiological aspects of facial eczema. *DSIR Information Series No.37:* 22–26. 12._____1969: "Records of Plant Diseases in New Zealand." *DSIR Bulletin 192.* 298 pp. 13._____1991: Marguerite Crookes 1895-1991. *Auckland Botanical Society Journal 46 (2):* 61–67. 14._____1992: Biographical notes in letter to A.D.Thomson, 22 May. 15._____1998: Cunningham, Gordon Herriot 1892–1962. *In* Claudia Orange (General Editor) "The Dictionary of New Zealand Biography Volume Four 1921–1940". Auckland University Press, Department of Internal Affairs. Pp.123–124. 16. Dingley, J.M., Done, J., Taylor, A. and Russell, D.W. 1962: The production of sporodesmin and sporedesmolides by wild isolates of *Pithomyces chartarum* in surface and in submerged culture. *Journal of General Microbiology 29:* 127–135. 17. Dingley, J.M., Fullerton, R.A. and McKenzie, E.H.C. 1981: Records of fungi, bacteria, algae and angiosperms pathogenic on plants in Cook Islands, Fiji, Kiribati, Niue, Tonga, Tuvalu and Western Samoa. Survey of Agricultural Pests and Diseases. Technical Report, Volume 2. South Pacific Bureau for Economic Co-operation. United Nations Development Programme, Food and Agriculture Organization of the United Nations. 485 pp. 18. Dobbie, H.B. (Revised by Marguerite Crookes) 1951: "New Zealand Ferns". Auckland, Whitcombe & Tombs Ltd. 406 pp. 19. English, Philip 1994: Degree caps life of science. *N.Z.Herald,* 9 May. 20. Martin, Paula 1993: "Lives with Science: Profiles of Senior New Zealand Women in Science". Wellington, Museum of New Zealand. 62 pp. 21. Pennycook, S.R. 1989: "Plant Diseases Recorded in New Zealand". Volumes 1, 2 and 3. Auckland, Plant Diseases Division. 276 pp., 502 pp., 180 pp. 22. Thomson, A.D. 1976: Evolution of plant research in DSIR: impetus for the establishment of Plant Diseases Division at Mt. Albert. *Crop Research News No.18:* 15–16. 23._____1993: Lady Kathleen Rigg, pioneer plant scientist. *N.Z. Science Monthly 4(5):* 12.

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

■ Biographical Notes (32): Arnold Wall, MA (Lond), BA (Cantab), Hon DLitt (NZ), CBE (1869–1966)

When Professor Arnold Wall died at the age of 96 his obituary in "The Press" described him as a legend in his lifetime and added: "He made at least five distinguished reputations for himself—as a teacher of English, writer, botanist, climber, and broadcaster—but his interests were legion"(1). In this note I can only concentrate on Professor Wall's contribution to New Zealand botany, a contribution particularly noteworthy because it did not begin until 1915 when he was already 46.

Arnold Wall was born in Ceylon on 15 November 1869, the son of Mary Ann Wall (born Dixon) and George Wall, a coffee merchant and planter. In 1870 or 1871, with three brothers and four sisters he was sent to England where they were brought up by a Ceylon friend at Clevedon, on the Bristol Channel. Arnold's father visited them periodically, but he did not see his mother again until he was 21 or 22. He recalled that: "We all took a lively interest in the wild flowers, insects, birds, etc. I can't remember the time when I did not know the names of all the common plants and trees."(2,3,4).

When Clevedon was given up in 1879 the boys were sent to Totteridge Park School, set in 200 acres of land, 10 miles north of London, and this was Arnold's home from his tenth to seventeenth years. When nearly 17 Arnold had to find work and he began teaching at schools near London—sometimes teaching botany—while studying extra-murally for the MA degree of London University. He visited Europe during this time and once stayed for 2 months with a widowed sister in Switzerland. After graduating in 1893 he worked for the University Correspondence College, mainly in Cambridge, and on the strength of his London MA was allowed to do a Cambridge research BA in two years, again extramurally, but enrolled as an undergraduate at Christ's. His thesis was on "The Scandinavian Influence on the English Dialects". He climbed in the Lake District and again in Switzerland, and made botanical excursions to the Fens with like-minded colleagues(4).

In 1898 Wall was temporary assistant to the Professor of English at the University College of Aberystwyth and with his fellow lodger, the Professor of Botany, Professor Salter walked the moorlands and hills in search of plants and birds(4). Thus, when Wall was appointed to the Chair of English Language, Literature, and History at Canterbury University College at the end of 1898 he was a keen walker, alpinist, and field botanist.

Wall arrived in Christchurch in February 1899, and stayed at Warner's Hotel for a day or two, before being "dug out" by the Professor of Biology, Arthur Dendy, who put him up at his house on the Cashmere Hills. Wall wrote: "I had more in common with Dendy than with any other member of the staff owing chiefly to my amateurish interest in natural history, especially in botany". Other friendships were soon made: with F.W. Hutton, Curator of the Canterbury Museum and Lecturer in Geology at Canterbury College; and with the botanist, Leonard Cockayne, whom Wall impressed by naming some puzzling plants from the Swiss Alps in Cockayne's garden at North Brighton(4).

These new friends were all members of the Philosophical Institute of Canterbury which Wall joined on 5 April 1899 (*TNZI 31:* 734). His first address, on 3 May, was entitled (as might be expected) "The life-history of words"; (*TNZI 32:* 433) and on 5 September 1901 he spoke on "Evolution in literary types" (*TNZI 34:* 579). Both talks are obviously concerned with change over time—evolution—and herald Wall's approach when he came to write about plants.

On 13 November, 1901, Wall married Elsie Kent Monro Curnow, grand-daughter of Judge Monro (Native Land Court), daughter of a school teacher, and aunt of the poet, Allen Curnow.

Wall described in some detail "a very interesting trip to Milford Sound with Dr Dendy in 1902 or 1903"(4). But 1903 is impossible and 1902 improbable, given their movements. In January 1902 Wall attended the Hobart meeting of ANZAAS with Hutton (the President) and as president of the Education section, spoke on "Poetry as a factor in education". Then, during the university session of 1902, Dendy was on leave, and did not return to New Zealand, resigning in January 1903(5). Wall lost another friend in 1905, when Hutton died, but Cockayne was still there, as was the new lecturer in Geology, Robert Speight. Wall was never friendly with the Professor of Biology, Charles Chilton.

For the next decade Wall's main relaxation came from walking, climbing, fishing and, no doubt, writing poetry. Then, in 1915, he camped at Castle Hill with Speight and Evans (Professor of Chemistry) who had been asked by Cockayne to collect an *Epilobium.* But only Wall could recognise a willow-herb and he supplied the material. From then on, with the encouragement of Cockayne (now living in Wellington) Wall became a serious student of plants, as he describes so well in his autobiography(4).

Wall's main period of botanical work lasted from 1915 to his retirement from Canterbury College in 1931. During this time the extent of his field work and of his botanical writing was quite remarkable, considering his teaching duties, involvement in College administration, membership of the Senate (1918–26), Honorary Curatorship of the Canterbury Museum herbarium (1918–34), and his writing in other disciplines. At the time of his retirement Wall summed up his botanical work as follows. "During the last sixteen years I have spent a great part of every

summer collecting plants in the mountains of New Zealand, chiefly in the Southern Alps, though all the principal ranges of the North Island have also been visited. I have travelled on foot about 5000 miles, often carrying the swag of food, blankets, etc.; have crossed the main Divide of the Southern Alps in about fifteen places; discovered a fair number of new species and varieties; and have collected, dried, and mounted about 5000 sheets of specimens, chiefly alpines, for the Canterbury Museum." (*The New Flora and Silva 4:* 112). He could have added that during this time he had written at least 30 papers and articles on botanical matters.

Wall's wife had died in 1925, and about 1934, after a trip to the Himalayas in 1932, he moved to Auckland to be with his daughter and son-in-law, Hilary and Norman Richmond. Here he co-operated with Miss Lucy M. Cranwell, Botanist to the Auckland War Memorial Museum, in writing "The Botany of Auckland" (1936). He had met Lucy Cranwell and her colleague, Lucy Moore (Auckland University College) in 1930 when he visited Auckland, and again in January 1931, when they visited Canterbury(6). In 1945 another co-operative effort appeared: "The Botanical Names of the Flora of New Zealand", written with Dr H.H. Allan, Director of the Botany Division, DSIR, Wellington.

By 1951 Wall had returned to Christchurch and was living at 50 Arnold Street, Sumner(7). From here he travelled to town once a fortnight to record two programmes of his very popular weekly national broadcasts on "The Queen's English"(1). In 1960 his autobiography "Long and Happy" was published. The first and more detailed part is a reprint of his "Memoranda (1869–1898)" privately published in 1950; the second part deals with New Zealand, concentrating on accounts of his expeditions and on pen-portraits of people he knew, such as Cockayne and Dendy. About 1962 Professor Wall gave a talk at Botany Division, DSIR, Lincoln, about his botanical work and this was taped.

Arnold Wall died on 29 March, 1966, honoured by "The Press" with both obituary and editorial(8). One of his students remembers him as gentle and kind, unflappable, helpful to his students, very knowledgable, and one who took great pleasure in his work(9). In his memory, on 30 September 1967, the Canterbury Botanical Society (President Mr B.F. O'Connor) organised the planting of a 9-year-old totara from Kennedys Bush in the Botanic Garden. It grows by the pond near the Cockayne Memorial Garden and was planted by Miss Mattie Wall, Professor Wall's grand-daughter(10).

Wall acquired an unrivalled field knowledge of our alpine plants, and bequeathed this through his herbarium specimens and his writings. He did not discover many novelties—these had already been collected—but he contributed considerably to our knowledge of species distribution in the mountains, geographical and altitudinal. Wall was particularly interested in *Luzula*, *Carex*, and *Festuca*; and when Howarth of Manchester studied the New Zealand fescues(11) he leaned heavily on Wall's specimens, while Saint-Yves(12) devoted a paper to "ces beaux matériaux". A Wall specimen is shown by Connor(13).

As for Wall's botanical publications, they should be better known. He listed 23 titles (4) and I have added 15 more (asterisked) in the classification below. Among them the three that I have placed under "Speciation" are the most thoughtful and important. He was concerned with the influence of climatic change, adaptation to rock and soil, and geographic isolation, on the way plants change, and with the help of Cockayne and Speight, was a pioneer student in New Zealand of the origin of species.

1. Major journeys

Wall's main companions were Professor Robert Speight (Geology) or Professor Hugh Stewart (Classics).

* 1923 A big day in the Nelson mountains. *The Press*, 9 June 1923; Appendix 2 *in* F.G. Gibbs, A Biography, Nelson Historical Society, 1960. Describes a visit in January, 1921, to the Dun Mountain (Nelson) and the Mt Arthur Plateau (NW Nelson) with Gibbs, Stewart, and a retired bank manager, Mr Pascoe. In one long day they climbed Mt Peel (without Gibbs) and then Mt Arthur. See also (4).

1924 The Southern Alps. Franz Josef Glacier to Mount Cook. The Lyttelton Times Co. Ltd. Describes a collecting expedition in January, 1924, with Stewart and Dr F.V. Bevan-Brown to Hokitika, Ross, Waiho, and the Franz Josef Glacier, the Fox Glacier, the Copland Pass, and Mt Cook.

1926 Lake and Fiordland 1 Wanaka and the Haast Pass; 2 Head of Wakatipu to Head of Te Anau; 3 The Milford Track; 4 Lake Manapouri and Doubtful Sound; 5 Lake Monowai and Mount Cleughearn; 6 The Hump. The Lyttelton Times Co. Ltd. A journey in mid-February 1926, accompanied by Speight on 2 and 3.

1927 Botanical Journeys 1926–27. The Lyttelton Times Co. Ltd.
Describes two journeys with Speight. January 1927: Westport – Karamea – Heaphy River – Gouland Downs – Collingwood – Tophouse and the Raglans – Lakes Rotoiti and Rotoroa – Murchison and Mount Mantell – Reefton – Christchurch (by rail). February, 1927: Arthur's Pass – Otira River – Reefton – Maruia Hot Springs – Mount Trovatore – then on foot over the Lewis Pass to "The Poplars", Glen Wye and the Waiau Ferry, then Hanmer motor to Christchurch. See also (4)

*1930 Botanical Ramblings *The Press*, 22 February. A journey during the latter half of January and early February 1930, to Marlborough (Ure River, Isolated Hill, Ben More), Mount Arthur Plateau, and then back to the Awatere.

1933 A Botanist in Lama-Land. From Srinagar to Leh. Christchurch Press Co. Ltd. In the northern summer of 1932.

2. Larger works

1922 The botany of Christchurch. Reprint of a series of articles in the *Lyttelton Times*. Dedicated to Dr L. Cockayne. Revised edition, 1953.

1925 The Flora of Mount Cook. Reprint of a series of articles in the *Lyttelton Times*.

1937 (with Lucy M. Cranwell) The Botany of Auckland. Reprint of a series of articles in the *New Zealand Herald.* Dedicated to T.F. Cheeseman.

3. Our Alpine Flora

*1926 Alpine and sub-alpine flora. *Natural History of Canterbury* 145–59.

1932 Plant hunting in the New Zealand Alps. *The New Flora and Silva 4(2):* 112–121 [given as 1935 by Wall].

*1933 Some New Zealand shingle plants. *Ibid 5:* 111–113.

*1935 Plant hunting in the New Zealand mountains. North Island. *Ibid 8(1):* 22–31.

4. Speciation

1918 On the distribution of *Senecio saxifragoides* Hook.f. and its relation to *Senecio lagopus* Raoul. *TNZI 50:* 198–206.

1920 *Ranunculus paucifolius* T.Kirk: its distribution and ecology, and the bearing of these upon certain geological and phylogenetic problems. *TNZI 52:* 90–105. Postscript by Professor Hugo de Vries.

1925 Some problems of distribution of indigenous plants in New Zealand. *TNZI 57:* 94–105.

5. Banks Peninsula

1918 Ferns of the Port Hills. Lyttelton Times Co. Ltd. (see also L.T. 13 July 1918).

*1921 (with R.M. Laing) Botanical survey of Sugar-Loaf Reserve. *Lyttelton Times*, 16 July.

1923 The indigenous grasses of Mount Herbert, Banks Peninsula, and its neighbourhood. *NZJST 6:* 144–147.

*1924 (with R.M. Laing) The vegetation of Banks Peninsula: Supplement 1. *TNZI 55:* 438–444.

*1930 Appendix on the plant-covering of the Spit. *TNZI 61:* 147–169 *in* R. Speight, The Lake Ellesmere Spit.

6. The Canterbury Plains

*1919 New Zealand plants found now in Hagley Park. *TNZI 51:* 444 *in* E.M. Herriott, A history of Hagley Park, Christchurch, with special reference to its botany.

1922 The Riccarton Bush. Reprint of four articles from the *Lyttelton Times.*

*1927 The grass covering of the Canterbury Plains. *The Press* 3 November.

7. Puzzling Plants

*1920 *Helichrysum dimorphum* Cockayne – a hybrid? *TNZI 52:* 106–107.

1923 *Raoulia mammillaris* Hook.f. *Rec. Cant. Mus. 2:* 105–109.

1924 *Haastia greenii* Hook.f.: what is it? *Rec. Cant. Mus.2:* 235–238.

8. Wild hybridism

1926 A new hybrid species of *Ranunculus*. *Rec. Cant. Mus. 3:* 51–53.

9. Distribution

1921 New Plant-stations. *TNZI 53:* 426–428.

1927 New Plant Localities. *TNZI 58:* 251–254.

10. The Canterbury Museum Herbarium

During Wall's period as Honorary Curator he received the important collections of H. Carse (Auckland) and J.B. Armstrong (Christchurch).

*1922 Note on the origin and state of the herbarium. *Rec. Cant. Mus. 2:* 91–92.

*1934 The Armstrong herbarium. Lost plants of Hagley Park. *The Press* 3 March

*1934 The Armstrong herbarium. Finds on Peninsula and Plain. *The Press* 10 March

*1935 Notes on the Armstrong herbarium. *Rec. Cant. Mus. 4:* 97–114.

11. Overseas

1929 The cultivation of New Zealand plants in Britain. Christchurch Press Co. Ltd. A visit in the northern summer of 1928.

1929 A preliminary catalogue of New Zealand plants cultivated in Britain. *TNZI 60:* 379–393.

12. Words

1919 The pronunciation of scientific terms in New Zealand with special reference to the terms of botany. *TNZI 51:* 409–414.

1945 (with H.H. Allan). The Botanical Names of the Flora of New Zealand. Second edition, 1950. Whitcombe and Tombs Ltd.

13. A poem

1923 The Old Botanists Farewell to the Southern Alps, *in* College Rhymes: An anthology of verse written by members of Canterbury College, 1873–1923. Ed. O.T.J. Alpers. Whitcombe & Tombs Ltd.

Eponymy

1918 *Haastia recurva* Hook. f. var. *wallii.* "The plant was collected by Professor A. Wall on a shingle slip near the summit of Mount Fyffe, Seaward Kaikoura Mountains". L. Cockayne *TNZI 50:* 175.

1921 *Carex wallii* "Hab.—Wet ground at Centre Hill, Southland: Arnold Wall! Collected February 1920". D. Petrie *TNZI 53:* 371.

1923 *Colobanthus wallii* "Hab.—Crevices in limestone rocks at the top of Mount Arthur, west Nelson : Arnold Wall!" D. Petrie *TNZI 54:* 569.

1925 *Poa novae-zelandiae* var. *wallii* "Mount Miromiro, Amuri, A. Wall!; Raglan Mountains, Wairau Valley, 5000 ft T.F.C." D. Petrie in Cheeseman *Man. N.Z. Fl.* 189.

1925 *Coprosma wallii* "South Island: Canterbury—Poulter River, Upper Waimakariri, Peel Forest, *A. Wall!* 1800–2500 ft. Nov.–Dec." D. Petrie in Cheeseman *Man. N.Z. Fl.* 867.

1926 *Nasturtium wallii* "Hab., South Island: Cecil Peaks, Lake Wakatipu at 4000–5000 ft elevation. A. Wall!" H. Carse *TNZI 57:* 92.

1961 *Myosotis arnoldii* "Known only from Ben More, Ure River, Marlborough, on limestone *c.* 4000 ft. A. Wall, Jan 1930. This species is named for Prof. Arnold Wall — " L.B. Moore in Allan *F. N.Z. 1:* 830.

Acknowledgements

For help with this note I am very grateful to the late Mr Arnold Wall (Nelson) and Ms Mattie Wall (Auckland), son and grand-daughter of Professor Arnold Wall; and also grateful to Mrs Margaret Robertson (Nelson), Mrs Faith Thompson (Christchurch), Dr H.E. Connor (Christchurch) and Dr W. Harris (Christchurch).

References

(1) Anon. 1966: Death of Arnold Wall: Professor, Writer, Botanist, Climber. *The Press*, 30 March; (2)Tony Deverson 1996: Wall, Arnold 1869–1966. *DNZB 3:* 552–553; (3) Death Certificate; (4) Arnold Wall 1965: Long and Happy. An autobiography; (5) E.J. Godley 1998: Biographical Notes (31): Arthur Dendy. *N.Z. Bot. Soc. Newsletter 53*; (6) Lucy B. Moore 1986: Lucy Cranwell Lecture. *Auckland Bot. Soc. Newsletter 41(2):* 19–35; (7) Anon. 1951: Who's Who in New Zealand. Seventh edition; (8) Anon. 1966: Professor Arnold Wall. *The Press*, 30 March; (9) Mrs F. Thompson 1998: *in litt.*; (10) Anon. 1967: Memorial Tree Planted. *The Press*, 2 October; (11) W.O. Howarth 1928: The genus *Festuca* in New Zealand. *J. Linn. Soc. London 48:* 57–77; (12) A. Saint-Yves 1931: *Festuca* de la Nouvelle-Zélande (Herbier du Professor Wall) *Candollea 4:* 293–307; (13) H.E. Connor 1998: *Festuca* (Poeae:Gramineae) in New Zealand 1. Indigenous Taxa. *N.Z.J.B. 36:* 329–367.

E. J. Godley, Research Associate, Landcare Research, P O Box 69, Lincoln

PUBLICATIONS

■ Book Review

Help for the generically-challenged: a review of "Malesian seed-plants. Vol. 1—Spot-characters". M. M. J. van Balgooy, 1997. Rijksherbarium/ Hortus Botanicus, Leiden. 154 pp. NGF 50.

Talking in practical terms, and except in the recent embarrassing case of "X-it", there is never any great problem in determining the family and genus of even the scrappiest specimen of New Zealand native seed-plant—we simply have far too few such taxa for their outlines ever to become blurred. But in the tropical region of Malesia (Malaysia and the Philippines to the Solomon Islands) things are literally very different, and in the more than 25 000 species found here some very strange character combinations occur—who from Horopito would have thought the world contained Hypericaceae 35 m tall, woody Convolvulaceae, etc., etc.

The first problem, then, on opening a consignment of Malesian plants, is that of "pre-identification", the placing of each specimen in its right family or genus, to be sent on to an all-knowing specialist. Seldom does the pre-identifier have time to dissect flowers beyond checking the position of the ovary, and so best use has to be made of vegetative characters and also of any field notes the collector may have provided.

The centre for Malesian botany is the Rijksherbarium at Leiden, where for about 30 years the late grandmasters van Steenis and Bakhuisen van den Brink dealt with pre-identification—almost certainly, they handled a wider range of Malesian plants and more of them than anybody else ever has. Their knowledge, systematised and added to, finds expression in this book by their chief pupil Max van Balgooy, who, as he says in the modest preface, began as others would have, by often having had to ask "the silly question, how do you know ?".

The book consists of lists of 105 "spot-characters", that is, features whose presence is relatively uncommon in the particular family or in the seed-plants at large, and which can usually be seen in the dried specimen or deduced from typical field notes. There are, among others, lists concerning habit, exudate, leaf arrangement, stipule character, colour of the withering leaf (to use Corner's phrase), appearance of the petiole, flower characters, e.g., dicots with parts in 3s, and fruit and seed characters, e.g., fruits blue-coloured, endosperm ruminate.

Some of the lists are rather long and cannot provide much help towards a successful pre-identification unless combined with the information in other lists. Clearly, one can hardly be a Malesian taxonomist without having a capacious memory (and van Balgooy himself once astounded one of his teachers by identifying an extremely rare endemic from Fiji, having remembered from two decades ago the illustration in Seemann's "Flora Vitiensis"). Most of us, though, would probably find that the best use would be got out of these lists by data-basing them and doing conjoint searches.

I have not researched the history of the spot-character "crib" (perhaps it is a feature of Dutch public school life?). Family treatments in the early volumes of "Flora Malesiana" sometimes had keys based only on vegetative features, or "artificial" instead of natural keys, but it was only in 1972, in the account of *Nothofagus* and its 13 species, that a short and very useful spot-character list appeared. These have since appeared only sporadically, in the recent volume by David Mabberley on Meliaceae, for example, but unfortunately not in the preceding and similar-sized volume on Sapindaceae, where there are twice the number of genera.

The book is enhanced by numerous line-drawings and is slim enough to be taken into the field, though a bit expensive to risk. The next two volumes promised, characterising the tree and "non-tree" families, will greatly enrich our appreciation of what plant-families are "really" like. And if they can be taken into the field (plastic covers please) they may in fact render the first volume redundant, by making it usual that collectors will be able place their plants into the right families straight away.

Rhys Gardner, Auckland Institute and Museum, Private Bag 92018, Auckland

■ Journals Received

New Zealand Native Orchid Group Journal 69
(December 1998; ISSN 1170-4543) Edited by Ian St George. 39 pp.

Original papers in this issue are: Dan Hatch – The New Zealand genera 6: the Asian epiphytes; Gael Donaghy and Graeme Jane – Spring orchids in Golden Bay; Jim Campbell, Colin Ogle and Graeme La Cock – Monitoring of *Pterostylis micromega* at Ihupuku Swamp, Waverley; Colin Ogle – Orchid searching in the Wanganui hinterland; Bruce Irwin – Observations on *Thelymitra* columns at Te Paki.

Included is a list of the New Zealand orchid species, with notes.

Editor

■ Publication Announcements

Plants of national conservation concern in Wellington Conservancy

The Department of Conservation has published a guide book entitled "Plants of national conservation concern in Wellington Conservancy" that describes the current status of 49 nationally threatened plant species found in the Conservancy. The guide book has been produced with assistance from many botanists in the region and is a major step towards implementation of the Department's regional Plant Conservation Strategy (published in 1996).

The document will be used:

- as a baseline of information for comparative analysis of future changes in the distribution of threatened plant species;
- to develop research projects that seek to provide ecological explanations for observed species distribution patterns;
- to determine priorities for legal protection of sites that support threatened species populations;
- to assist Department of Conservation staff with field surveys for those plant species;
- by consent administrators of local authorities and consent applicants;
- to raise public awareness of the plight of threatened plant species;
- to provide landowners with information about rare plant species that occur on their properties.

The guide book contains information about each plant species, including maps of their conservancy-wide distribution and photographs. The guide book also contains a list of places in the region where threatened species populations previously occurred which are worthy of survey. Copies of the guide book are available for purchase from Wellington Conservancy ($65 for a colour copy and $25 for black and white).

For further information about the guide book or to order a copy please contact the Department of Conservation at the address below.

John Sawyer, Department of Conservation, Wellington Conservancy, PO Box 5086, Wellington. Tel: 04 472 5821. Fax: 04 499 0077. Email: jsawyer@doc.govt.nz

DESIDERATA

■ Back copies of *NZ Journal of Botany*

The library at DoC Hokitika is missing all issues of *NZ Journal of Botany* from the following years: 1987, 1988, 1989, 1990.
If anyone has copies of these issues which they would like to dispose of, a welcome home will be found at Hokitika. Please contact:

Phil Knightbridge, Department of Conservation, Private Bag 701, Hokitika. Ph (03) 755 5560 e-mail pknightbridge@doc.govt.nz

■ Seedlings of Monocots

To continue our extended systematic studies on the comparative morphology of seedlings of monocots we urgently need viable seeds of New Zealand genera listed below. It would be greatly appreciated if you could harvest a small sample of seeds of any of these genera and send them to the address given.

Iphigenia *Herpolirion* *Xeronema* *Libertia*
Luzuriaga

Prof. Dr H.-J. Tillich, Institut für Systematische Botanik, Menzingerstr. 67, D-80638, München, Germany

■ Seeds of *Poa*

As part of systematic studies of the genus *Poa*, seeds of all native species are requested. Please send a small sample of seeds of any species to:

Dr Robert J. Soreng, Botany Department, NHB MRC-166, Smithsonian Institution, Washington DC 20560, USA

FORTHCOMING CONFERENCES/MEETINGS

■ Seed symposium

The one-day seed symposium to be held at Massey University, Palmerston has been postponed until Friday, 12 February, 1999. The purpose is to act as a discussion forum for research on all aspects of seed biology in New Zealand including structure, physiology, conservation and production. Key note speakers confirmed so far are: Daphne J. Osborne (Oxford, UK), Mary Leck (New Jersey, USA), David Fountain (Palmerston North, NZ), and John Hampton (Lincoln, NZ). The proceedings will be published, including two-page outlines of posters. The cost is $35 ($20 for students) with a dinner to be held in the evening at an additional cost of $33.

If you would like to participate please contact either **Dr Michael McManus** (M.T.McManus@massey.ac.nz) or **Dr Heather Outred** (H.A.Outred@massey.ac.nz).

Corrigenda for Newsletter 53

■ Tribute to pioneer botanist Dr Elizabeth Flint

I aplogise for a gross error in my tribute to Elizabeth Flint in the final sentence on p. 23 which should read: "Elizabeth and her co-author Hannah Croasdale were both active in research into their old age. Mrs Marilyn M. Racine was relatively young when she helped with volume 3 of the Desmids, and as far as is known is still alive!"

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

■ Yellow-flowered mistletoes on Waitaanga Plateau, North Taranaki

Andy Thomson has pointed out that the reference to A.P. Thompson in this article was incorrect and should be A.P. Thomson, son of leading New Zealand scientist James Allan Thomson and grandson of pioneer naturalist and friend of Leonard Cockayne, G.M. Thomson. The authors are grateful for correction of this error.

Editor

ISSN 0112-6865