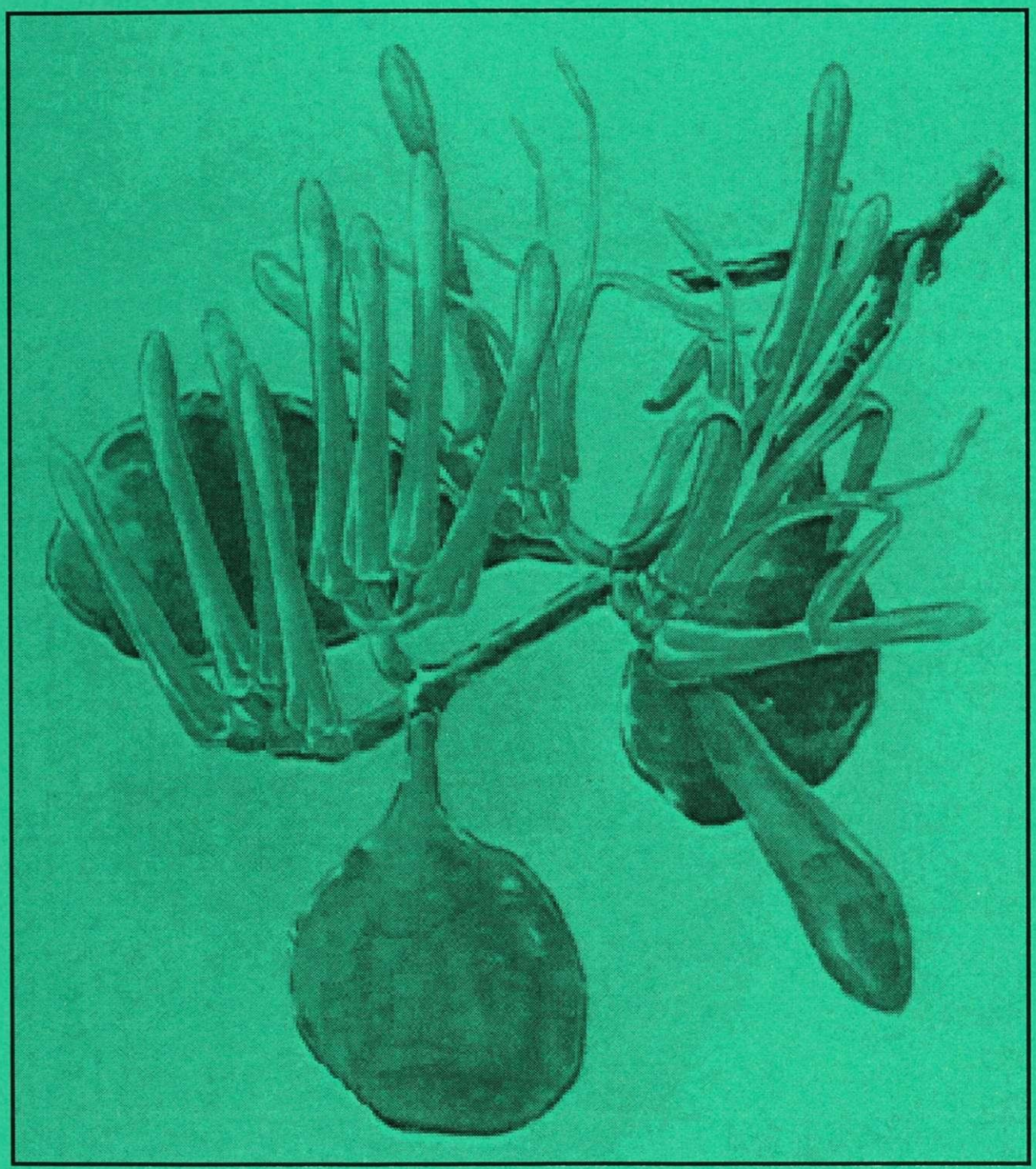
NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 62 DECEMBER 2000



New Zealand Botanical Society

Subscriptions

The 2001 ordinary and institutional subs are $18 (reduced to $15 if paid by the due date on the subscription invoice). The 2000 student sub, available to full-time students, is $9 (reduced to $7 if paid by the due date on the subscription invoice). A subscription invoice for 2001 accompanies this issue of the Newsletter.

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

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

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

Deadline for next issue

The deadline for the March 2001 issue (Number 63) is 25 February 2001.

Please forward contributions to:

Joy Talbot
23 Salmond Street
Christchurch 8002

Contributions should be sent by e-mail to m.king@irl.cri.nz Files can be in WordPerfect (version 7 or earlier), MS Word (version 6 or earlier) or saved as RTF or ASCII. Graphics can be sent as Corel 5, TIF or BMP files. Alternatively photos or line drawings can be posted. Macintosh files cannot be accepted so text should simply be embedded in the email message.

Cover Illustration

A black and white print of an original watercolour painted by Bruce Irwin for the Oxford Book of New Zealand Plants by Lucy Moore and Bruce Irwin, published in 1978 by Oxford University Press. Bruce Irwin was awarded the Allan Mere for outstanding contributions to botany this year in part for his beautiful and accurate botanical art.

Peraxilla colensoi is found in the east and south of the North Island, and in the north and south of the South Island, as the typical mistletoe of silver beech, *Nothofagus menziesii*. Its massed brilliant red flowers make a blaze of colour about Christmas time.

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New Zealand Botanical Society News

- **From the Secretary/Treasurer**

Nominations for Officers and Committee positions for the New Zealand Botanical Society for 2001 received by the closing date of 28 November 2000 were:

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

As the number of nominations for President and Secretary/Treasurer equalled the number of vacancies, there is no need for a ballot and the above are declared elected.

As there are four nominations for the three available committee positions, a postal ballot is necessary. If you are eligible to vote in the ballot, a voting paper is attached to the cover of this *Newsletter* (under the 2001 subscription invoice). Voting papers must be returned to the Secretary/Treasurer by 20 January 2001.

Joy Talbot has agreed to continue as *Newsletter* Editor for 2001 and becomes a member of the Committee ex officio.

Subscriptions for 2001 remain unchanged from this year. An invoice is attached to this issue of the *Newsletter*. Please pay promptly and take advantage of the substantial discount for prompt payment.

On behalf of the Committee and all members, I'd like to record a big vote of thanks to Joy Talbot who has very professionally undertaken the role of *Newsletter* Editor over the past year.

Finally, we wish all members of the Society the compliments of the season.

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

Regional Botanical Society News

- **Auckland Botanical Society**

September Meeting

Palynology was the topic for this evening's talk, and Mark Horrocks from Auckland University spoke on some scientific applications of pollen. These included vegetation and environmental history, archaeology and forensic science.

September Field Trip

Paremoremo, south-west of Albany, is renowned for matters other than botany, but in the 80 ha. Paremoremo Reserve there is botany aplenty. Leader Rhys Gardner first took the party along the grassy side of the stream to point out the *Gunnera monoica* growing there, and it was pleasing to see that the fern *Loxsoma cunninghammii* is still holding its own. *Anaphalioides trinervis* was growing on the rocks. Damp bush on south-facing slopes and gum-land scrub on the ridges were explored after lunch. *Dracophyllum sinclairii* and *Pimelea longifolia* were found among the gumland plants, but time did not allow a thorough search for the hard beech which Rhys had found in the past.

October Meeting - The Lucy Cranwell Lecture

A large audience assembled at the Auckland Museum for a packed programme, starting with a tribute to our late patron, Lucy Cranwell, who died in June.

The Allan Mere, presented each year by the New Zealand Botanical Society for outstanding contributions to botany, was awarded to Bruce Irwin for his work on native orchids, and for the beauty and painstaking

accuracy of his botanical art. This was an appropriate occasion for the presentation, as the mere was donated by the "other" Lucy, Lucy Moore. Bruce paid a touching tribute to this Lucy, his good friend and colleague.

The main speaker for the evening was Dr Brian Molloy, Research Associate at Landcare Research, Lincoln. Brian spoke on the native conifers. Using two slide projectors he was able to illustrate to perfection the distinguishing characteristics of some of the tricky "pairs" of conifers. This was appreciated by those who have struggled with these problems for some time. He also illustrated some of the forms arising from hybridisation between these pairs, including the hybrid totara found at Mt Moehau which had puzzled the two Lucies more than seventy years ago.

October Field Trip

At picturesque Huia, near the North Manukau Heads, there are several tracks to chose from, and with two leaders for this field trip there were three options for the members. The many botanical highlights included *Manoao colensoi, Pseudowintera axillaris, Pittosporum ellipticum, P. kirkii* and *Raukaua edgerleyi* with hooks on the upper mid-ribs. For those who took the steep track down to the old earth dam in the Marama Valley there was the puzzle of a swarm of toatoa with toothed phylloclades - hybrids with tanekaha or not? Some climbed Mt Donald McLean and found *Pterostylis cardiostigma* and were able to compare it with *P. banksii* in bud. *Hebe bishopiana* is also present here.

November Meeting

Ewen Cameron and Bec Stanley gave a joint presentation on Great Barrier Island - the geology, history, flora and fauna. The fifth largest of the country's islands, it has been extensively logged in the past but is possum free, and contains over 550 native vascular plant species. *Kunzea sinclairii* and *Olearia allomii* are endemic to the island, and there are many nationally and regionally threatened and uncommon plants, as well as species at their northern and southern limits. Thomas Kirk visited the island in the early years of logging, and has left a valuable record of the plants that were present before modification, but many of these have not been seen since.

November Field Trip

The northern end of the Hakarimata Range, across the Waikato River from Huntly, has a well constructed track built by local enthusiasts. This rises steeply to the main ridge where a couple of look-outs give good views over the Waikato lakes and river plains. The ridge forest is kohekohe/tawa dominant, but is so badly eaten out by possums and goats that it is not far from a state of collapse. The ground cover of the fern *Asplenium lamprophyllum* is managing to survive. After lunch at the second look-out the party returned via a loop through a patch of kauri and tanakaha trees. A few plants were seen of the red petioled alseuosmia which used to have the tag name "Hakarimata" but which has since been named *Alseuosmia quercifolia*.

FORTHCOMING ACTIVITIES

9 December	Grass workshop at 2 pm followed by pot luck dinner at the Regional Botanic Gardens
Anniversary Weekend (26-29 January)	Camp at Pouto, North Kaipara Heads.

Maureen Young, 36 Alnwick Street, Warkworth

- **Nelson Botanical Society**

August field trip: Mt Duppa

A sunny clear morning invited over 20 members to meet on State Highway 6 at the turnoff to Mt Duppa (with new signpost!) and to drive up on forestry roads to the start of the track. Mt Duppa's geology (according to Guyon Warren) is: sand/siltstone lower part, limestone bluffs middle part, basic volcanics upper part.

At first a climbing zigzag path led us up through dark beech forest, with the spectacular sight of *Raukaua*

edgerleyi with its beautiful deep glossy green unifoliolate or bifoliolate adult leaves with entire to sinuate margins. Ferns were a big discussion all the way. Some members identified 45 species (including fern allies): 10 species of *Hymenophyllum* (including *H. peltatum* near the top), 7 of *Asplenium*, 8 of *Blechnum. Huperzia varia* cascaded in masses with its unique green texture. *Cyathea colensoi,* the mountain tree fern, with its "climbing/creeping" stems in a very steep and rocky part of the track, was the subject of discussion in our little group as there wasn't a true botanist amongst us! *Chionochloa cheesemanii,* the forest tussock, grew around ridge areas and was, as a solitary plant, a real feature in shape and texture. Through the bluff area, *Pseudopanax crassifolius* and *Pittosporum eugenioides* with stem diameters approx. 30cm, amazed us with their age and nearly horizontal growth form (forced by the environment). Reaching the top around 1 pm, we were embraced by a clear view: to the NE the Marlborough Sounds, to the SW mountain ranges. There was a big discussion about three different growth forms of small-leaved twiggy shrubs: one prostrate, one upright and one spherical - then we found the very characteristic sticky seeds of *Pittosporum.....P. rigidum.* Big rock formations invited exploration - abundant specimens of *Brachyglottis* "Richmond" , single plants of *Celmisia hieracifolia* - or climbing up for different perspectives of the view.

The weather changed drastically. Totally surrounded by fog and mist, we started our descent through the sheltering forest with astonishing "sculpture-features" of plants and rocks. I would just like to say for everybody: it is a very rewarding hike in respect of plants, landscape and view. Liselotte Seckler

September field trip: Northeastern coast of Delaware Bay
Over twenty of us set out very punctually on a beautiful mild spring day, but were nevertheless barely able to beat the tide round the headland - those of us with shorter legs got wet feet anyway. Most of the group managed to climb the cliff through stunted ngaio, tauhinu and akeake into slightly less steep coastal forest with tawa, matai, pigeonwood, mahoe, nikau, titoki, wharangi, karaka and kaikomako. This forest contained interesting species such as fierce lancewood (*Pseudopanax ferox),* bamboo rice grass (*Microlaena polynoda),* velvet fern (*Lastreopsis velutina*). Shannel gave us a lesson on the differences between *Pteris tremula, P. pendula* and *P. macilenta* which were growing there together. Emerging from the forest we enjoyed our morning tea on a cushion of *Microlaena stipoides* overlooking Delaware Bay which was totally calm. We had beautiful views back into the estuary, round the coast of Pepin Island, and out to sea where a group of dolphins put on a display for us. From here we explored a little way inland up the valley through regenerating kanuka, finding more fierce lancewood and *Clematis paniculata* in full flower.

We then renegotiated the cliff with care and some assistance from a rope, and rejoined the rest of the party for lunch (and a first swim of the season for some) at the base of the waterfall. An idyllic site which led to a somewhat extended lunchbreak. Exploration of the cliffs then turned up *Hebe stenophylla, Peperomia urvilleana, Linum monogynum* in flower, *Einadia triandra, Crassula sieberiana* amongst other common coastal species. A colony of *Muehlenbeckia ephedroides* on the cliff was another exciting find, as was *Hypolepis dicksonioides* in a side valley. A short walk brought us back to the cars while there was still some warmth in the sun.

October field trip: Wakamarina Track
Threatening weather and a dodgy forecast didn't deter a group of 13 optimists from assembling at the start of the track 15 km up the Wakamarina valley. We were entering an old historic goldmining area but it was uncharted territory botanically speaking, with no species list for the area. We were keen to get going to see just what we could find. The first few hundred metres through scrubby cleared land produced a good number of species, including a *Hypericum* which looked "different". Later, Melanie said that the orange centres in the calyces (which were making identification difficult) were in fact the curled up larvae of the introduced biocontrol agent for this St John's wort (*Hypericum perforatum*)! They were obviously alive and doing their job of preventing the plant from seeding.

We soon moved into a very productive patch of diverse lowland forest. Broadleaved species were predominant with scattered podocarp and beech trees. It was good to see large hinau and tawa. The wide track gave us plenty of space to hold small discussion groups when needed, and the bank alongside gave easy access to a large range of ferns, all of which seemed particularly lush. The rain soon set in, so most

of us acted as scouts for Cathy who had the only waterproof notebook. The species list grew rapidly, with many eyes finding much of interest. Soon the first orchid was discovered, *Pterostylis irsoniana* with its distinctive black tip to the labellum. We were quick to add further species. *P. banksii* and *Chiloglottis cornuta* were both in flower. *Corybas trilobus* was also present, in seed. After our brief lunch stop between showers, we found *P. graminea* in flower. Then, on a more exposed part of the track leading down to the river, some *Thelymitra* species and *Orthoceras novae-zelandiae,* neither of them in flower and finally, in a damp area, a small but impressive *Corybas*. This was later determined by Bruce Irwin to be one of the *C. rivularis* complex, *C.* "Whiskers".

The diversity of ferns kept us busy and of particular interest were two species of parsley fern *Botrychium australe* and *B. biforme* growing almost side by side. Several species of *Hymenophyllum* were present, including *H. scabrum* and *H. flexuosum*. Though these two have a widespread distribution we don't see them very often.

Carex and *Uncinia* spp as usual needed clarification. Two of the *Carex* species were later confirmed as *C. cockayniana* and *C. raoulii*. We also untangled hybrids of *Lophomyrtus bullata x obcordata* and pokaka x hinau. Most of us were well short of our intended destination (Devil's Creek hut) when the continual rain drove us back to the cars. A group of four who had earlier gone ahead made it to the hut for lunch, and told us that the best patch of bush was in fact near the hut. So maybe we'll have even more of interest to find in this inviting area for another, hopefully sunny, day. Jocelyn Lewis

Labour weekend camp: Endeavour Inlet, Queen Charlotte Sound
As everywhere else, this weekend was marked by superb weather for the 19 participants - blue skies, calm, warm. We assembled at Camp Bay and arrived by launch at Endeavour Lodge in time to get walking before lunch - and were immediately amongst the abundantly flowering orchids for which this weekend will be long remembered. As a consequence, the 10 minute walk to Furneaux took about an hour. The orchids were dominated by large bold *Pterostylis banksii,* but we also met *P. irsoniana, P. graminea, P. alobula, Corybas cheesemanii*, and *Microtis unifolia*. After lunch, most wandered up through beautiful mature podocarp-beech-pukatea forest to a pleasant waterfall. Here, as everywhere in the Sounds this spring, *Olearia rani* was flowering unusually prolifically. Notable sightings included *Caladenia* species, *Ophioglossum coriaceum, Parahebe* sp. and *Craspedia* sp.

On Sunday, we spent the day on Motuara Island, a DoC-managed wildlife reserve with public access, being used to build up numbers of several threatened bird and reptile species. We were immediately immersed in loud song from the improbably numerous bellbird and robin, but also met saddleback (a first for many), kereru, and nesting Little Blue penguins - surprisingly we saw no tui, tomtit, or warbler. After climbing to the Cook Memorial lookout, some scrambled steeply down to coastal cliffs, where *Aciphylla squarrosa, Pimelea prostrata, Crassula sieberiana, Arthropodium cirrhatum, Apium prostratum, Disphyma australe, Poa cita* and *Senecio lautus* were seen. Graeme managed to get down to sea level and found *Sarcocornia quinqueflora, Samolus repens* and *Selliera radicans* as well. An unexpected find was mature pohutukawa, obviously planted many decades ago when the island was farmed. Other interesting plants were *Streblus banksii, Clematis forsteri* covered in sweet scented flowers and a very large patch of *Corybas cheesemanii* in seed.

Monday saw us walk the track from Endeavour Lodge back to Camp Bay, having sent our heavy gear by launch. At least 15 orchid species were seen, dominated by *Pterostylis banksii,* but including *P. graminea, P. alobúla, P. irsoniana, P. montana, P. cardiostigma, Thelymitra* spp, *Corybas oblongus, C. macranthus, Caladenia chlorostyla,* and another small pink *Caladenia*. *Carex cockayneana* and *C. geminata* were reinforced along the way, and *Nertera setulosa* and *Gleichenia microphylla* were new plants for many. Complicated manoeuvring managed to get all the correct bags up the hill on a hot afternoon for those leaving, while a few stayed on in luxury at Punga Lodge. These stalwarts took the 20+ km walk next day south along the Queen Charlotte track to Torea saddle. The northern few kilometres were botanically unremarkable, but later the track traversed mature bush, locally with mature matai and patches with abundant rewarewa, and some dry western faces with interesting scrubby species. All the way were spectacular views from the ridge, to the sparkling waters of Kenepuru Sound to the east, and Queen Charlotte to the west. A most enjoyable walk on a beautiful day. Guyon Warren

FORTHCOMING FIELD TRIPS
December 17: Parachute Rock, St Arnaud Range - Sally Warren
January 21: Horseshoe Basin - Cathy Jones
January 27-29: Anniversary Weekend Camp, Cobb Valley
February 18: Moa Park - Lawrie Metcalf
March 18: Teetotal - Les Moran
Easter Camp: Mid-Awatere Valley, South Marlborough - Cathy Jones

CONTACTS
President: Cathy Jones, Flat 2, 5 North Rd, Nelson. Ph 03 546 9499. Email: cjones@doc.govt.nz
Secretary-treasurer: Jocelyn Lewis, 22 Coster St, Nelson. Ph 03 547 2812. Email: tjlewis@xtra.co.nz

■ Canterbury Botanical Society

September Meeting

Nicholas Head from the Department of Conservation's Canterbury Conservancy talked about the work being done by DoC on threatened plants in Canterbury. After briefly discussing the range of habitats within his area of responsibility he went on to show slides of some of the more threatened plants. His talk highlighted the variety of habitats in Canterbury and some of the issues facing plants in the more modified areas. Of special interest were the slides of Awahokomo which hold a high number of locally endemic species confined to such a small area.

Chris Shaw

September Field Trip

A cold southerly did not deter seven people from visiting the West Melton Rifle Range on Saturday 2 September. The Army, who leases the grazing to a local farmer, currently manages this land. An interesting selection of grassland herbs exists amongst the exotic sward with *Carmichaelia corrugata* growing on exposed edges of the dune banks. We found a number of species that are uncommon on the Canterbury Plains: *Schoenus pauciflorus, Gunnera dentata, Poa cita, Festuca novae-zealandiae,* and an *Olearia odorata*. We also searched for *Zoysia minima* amongst the marram (*Ammophila arenaria*) covered dunes but did not meet with success. In all it was an interesting and worthwhile trip.

Chris Shaw

October Meeting & Field Trip

Jessie Wells, Canterbury University, recipient of a Botanical Society student grant, spoke about her research project using instruments placed on a tower of scaffolding in Okarito forest, which allows her to relate rates of photosynthesis to light intensity in major tree species, at canopy level and in the understorey. She showed how leaves become "light saturated" at a level far below that of full sunlight. Above the saturation point, leaves are subject to potentially damaging photon absorption (photo-inhibition), which has to be counteracted either through biochemical mechanisms, or through disposing of the excess light energy in the form of heat.

Jessie was followed by the main speaker of the evening, Nick Ledgard of Forest Research, who presented a background to the history of the exotic plantings in Craigieburn Forest Park, and a look to the future with particular emphasis on the implications of wildling establishment. The well-attended Friday evening was followed by a field trip to Craigieburn Forest Park, during which Nick demonstrated the points he had made in his talk. A wet morning in Christchurch meant that few members attended the field trip, which was a pity as the presence of people from DoC and Environment Canterbury with responsibilities for wildling control resulted in very useful discussions. As Nick's talk and field trip were closely integrated, I have presented a combined report.

Spread of wildling pines is recognised as one of the major threats to the retention of indigenous values in the high country. Realistically, it has to be accepted that sources of the spread, that is conifers planted for shelter, amenity and timber, will continue to exist, so the emphasis here should be on using species with lesser potential to spread, and on siting plantings where seed is less likely to be dispersed by wind over great distances. The Craigieburn plantings, which go back to the late 1950's, are valuable because they are demonstrating the economic potential of the various species, their value for control of erosion,

their capability for carbon storage, their influence on soils and vegetation, and their potential for spread, which may become evident only after several decades. For instance, the ability of *Pinus contorta* to spread has been known for a long time, whereas long-standing plantings of *P. mugo* have only recently begun to demonstrate a similar ability. This means that control of wildlings will need to be ongoing, and fortunately DoC currently has adequate funds to carry out such work, provided appropriate priorities are adopted. Generally, the highest priority should be to find and remove wildlings established at the greatest distance (and these may be many kilometres), and this must be done before such plants have themselves become seed sources. Conversely, in some places invasion will be so persistent that little more can be done than to set limits to the extent of spread that will be tolerated. Nevertheless, even within such areas, there may be enclaves of such high conservation value that control is warranted despite the certainty of repeated invasion.

Control involves destruction of all plants, involving hand-pulling of seedlings, and felling larger plants so as not to leave live branches or needles at the base. Failure to do this means the plant will recover to produce multiple stems from ground level, and present a far more difficult removal task at the next encounter. Grazing by sheep, even at very low stocking levels, greatly reduces the incidence of wildling establishment, and it is ironic that wildling invasion can be accelerated where grazing has been removed to benefit other conservation values.

DoC and Environment Canterbury contract out most of the wildling control work, but also encourage the participation of volunteers in work parties. Peter Wardle

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

- **Botanical Society of Otago**

Fungal Foray trip report

We had two fungal forays earlier this year. The first trip was to Sullivan's Dam on 19th March. About 20 people attended and their very enthusiastic collecting saw us taking back a large number of collections to the lab, many of which we either didn't have time to or were unable to identify. We realised at the time that to be most effective it is better to only collect enough specimens that can be identified in one day! Also some of the collections were of only one fruiting body and some people discovered that by the time they had sectioned, drawn and dried their collection there was nothing left. The golden rule is not to collect anything unless there are at least three fruiting bodies (preferably at different ages). The presence of *Pinus radiata* in the area probably accounts for the introduced species we collected (*Amanita muscaria, Tricholomopsis rutilans* and *Paxillus involutus*). The warm sunny day was a bit of a contrast to the day we had for the second foray, which was cold and very wet underfoot. On the 21st May we went to Silverstream and walked a short way along Raceman's Track. Only six hard-core enthusiasts (including me) turned out but we were rewarded with a great bounty of *Cortinarius* collections as well as the interesting "vegetable caterpillar" *Cordyceps sinclairii* and some beautiful small coral fungi (*Clavaria* and *Ramariopsis*). Watch out for another foray in the spring, as there are a number of fungi that prefer to fruit then rather than in the autumn. David Orlovich

July Trip Report - Peggy's Hill

A keen band of 20 including several children braved wet and misty conditions on the afternoon trip to Peggy's Hill, Otago Peninsula. A 15 minute walk uphill through farmland led to the fenced perimeter of the 1.79 ha conservation covenant. The forest remnant is owned by Mr Jim Morris and has been fenced since about 1991.

Armed with a species list prepared by Pat Enright of the Wellington Botanical Society, the party split into several small groups to explore the covenant. Some confined themselves to the margins while others headed for the higher interior. The dense margins were dominated by *Pseudowintera colorata* and several species of *Coprosma*. Once through this the group found a low forest of Hall's totara, miro, fuchsia, broadleaf and three-finger. The abundance of ground ferns had many putting their "Key to the ferns of Dunedin" (part of BS of Otago Newsletter No. 21) to good use. The seven filmy ferns

(*Hymenophyllum* spp.) on the list proved elusive though, with the paucity of large trunks no doubt restricting suitable habitat. Lichens were plentiful and over 30 species have subsequently been identified.

A special feature of the remnant is the presence of mountain holly (*Olearia ilicifolia*), *Raukaua simplex* and *Coprosma foetidissima*, all species that have disappeared from most other parts of the Peninsula.

Although once heavily browsed by goats the understorey is now in good condition with an abundance of palatable ferns and herbs. With the exception of Darwin's barberry there are few weeds of conservation concern. Darwin's barberry however, is well established on the margins and numerous seedlings were noted within the forest. Control of this serious shrub weed is desirable while this is still a practical option.

The group reunited after a couple of hours botanising and slid back to the vehicles and hot drinks.

John Barkla

September Trip Report - Threave

It was a sunny spring day for the visit to Prof. Baylis's garden and about 25 people took advantage to be guided by the owner through the extensive plantings. The house and garden were established by Watson Shennan, a pioneer runholder from the Manuherikia, in 1903. Trees dating from this period are copper beeches, cedars (although one recently came down in a storm creating havoc amongst the underplantings), a *Sequoiadendron*, native beeches, a huge *Pseudopanax arboreus*, a pohutukawa, ratas and cabbage trees. Rhododendrons provided splashes of colour and it was a pleasure to see well established natives, including Three Kings endemics, interspersed in the otherwise European-like creation. One of these endemics, *Pennantia baylisiana*, was named after Prof. Baylis, and another, the fern *Davallia tasmanii*, growing beside the entranceway, is the only plant named after the explorer Abel Tasman. Amongst the beautiful plants were frost tender avocado and pukatea. Mary Anne Miller

FORTHCOMING ACTIVITIES

29th December - 7th January: **Summer field trip** with the Wellington Botanical Society to Borland Lodge. Spaces may be still available. Contact Allison Knight, 487 8265, email: alli_knight@hotmail.com

8th & 9th January: **Lichen identification workshop,** Botany Dept, Otago University. With Jennifer Bannister and Allison Knight. If you would like to help identify Fiordland lichens from the summer field trip contact Allison as above.

14th February, 7 pm: **AGM**. Guest speaker Professor Alan Mark, "New Zealand Alpine vegetation in a world context". Zoology Annexe Seminar Room.

Bastow Wilson, c/o Botany Department, University of Otago, P.O. Box 56, Dunedin
Email: bastow@otago.ac.nz

NOTES AND REPORTS

Awards Made

- **Hutton Medal - plant sciences**

The Royal Society of New Zealand medal is awarded to people who, working in New Zealand, have undertaken research of great merit and have made an outstanding contribution to the particular area of science.

The 2000 Hutton Medal has been jointly awarded to: Dr Henry Connor FRSNZ, former Director of Botany Division, DSIR, Christchurch, and Dr Elizabeth Edgar, Landcare Research Limited, Canterbury, for their extremely meritorious individual and joint contributions to the botanical classification and documentation of New Zealand's flora.

Carol West, c/- DoC, PO Box 743, Invercargill

Plant Records

▪ *Geitonoplesium cymosum* – a new climber takes off in Auckland

Douglas Rogan, Botany Department, Auckland Museum, Private Bag 92018, Auckland

Introduction

New Zealand is well served for climbers that have become environmental weeds and many of these are some of our worst plant pests. This paper documents the establishment in Auckland of yet another climber that exhibits all the hallmarks of becoming a serious environmental pest. The plant is *Geitonoplesium cymosum* or scrambling lily and it has been found naturalising in native bush near urban areas in Birkenhead on Auckland's North Shore. This is the first record of this plant naturalising in New Zealand.

How did this plant get here? The most likely scenario is that the plant has been dumped as garden refuse from a nearby house and has spread from there as it is able to produce roots where the stem touches the ground (AK 251484, D.B. Rogan 495 & J. Sullivan). The fact that there is a large clump on the edge of bush directly behind pasture within 50 m of urban dwellings support this (Fig. 1). There is also the possibility that the seed has been dispersed by birds from a nearby cultivated plant, as this is obviously how it is spreading now. Its natural arrival from Australia or the Pacific is highly unlikely as the seed would most likely be excreted long before a carrier arrived in New Zealand.

Fig. 1 Intertwining mass of stems and leaves of *Geitonoplesium cymosum*. Note self-supporting climbing stem (< top left) and lens cap for scale (> middle right).

Description

Geitonoplesium is a monotypic genus native to Australia, Malesia and Pacific Islands. It has been placed in the Philesiaceae by some authors (Parham 1972; Smith 1979), the Smilacaceae by others (Conran & Clifford 1986) and more recently in the Luzuriagaceae (Harden 1993). It is a relatively common plant in the eastern Australian states and is also present in Malesia and the Pacific Islands (Conran & Clifford 1986). On Norfolk Island it is quite a rare plant (P. J. de Lange pers. comm.). In Australia it is commonly known as scrambling lily (Harden 1993) and in Fiji the plant goes by various names such as wa mbitumbitu, wa ndakua, wa ula and naveavea (Smith 1979). Its closest relative in New Zealand is *Luzuriaga parviflora*.

Geitonoplesium cymosum appears to have been cultivated only rarely in New Zealand (W.R. Sykes pers. comm.) and a search of AK and CHR herbaria turned up no other adventive records. It is also cultivated as an ornamental in Australia (Conran & Clifford 1986).

At first glance *Geitonoplesium* looks like a large-leaved *Asparagus* species. The growth habit, the flowers and the fruit are all reminiscent of *Asparagus asparagoides* and *A. scandens*. There are however a number of differences. *Geitonoplesium* has alternate branches whereas *Asparagus* has opposite. *Asparagus* leaves are actually cladodes – with the leaves reduced to small scales or spines at the base of the branches, while *Geitonoplesium* has true leaves. The anthers of *Geitonoplesium* dehisce through a small pore at the tip whereas in *Asparagus* this is done through a groove in the anthers.

In some places smaller stems of supplejack can easily be mistaken for healthy *Geitonoplesium* stems. *Geitonoplesium* appears to occupy a very similar niche to supplejack and, as with numerous other environmental weeds, it may replace supplejack by simply out-competing it. Young *Geitonoplesium* is also very similar in appearance to young mangemange (*Lygodium articulatum*).

Location

The plants were found in regenerating podocarp forest (kauri, miro, tanekaha & kahikatea are all common), the canopy of which, at this stage, is primarily made up of mature kanuka. The bush is on private land and is part of the southern arm of a larger area of bush that is joined by streams to Eskdale Reserve and Kaipatiki Stream to the north.

Three distinct populations of *Geitonoplesium* were seen:

The main population is located in the edge of bush directly behind a fenced paddock. This looks like a garden dumping and is probably the original seed source for the other infestations. While it is difficult to tell how long this has been growing here for, there is such a mass (10 m x 3 m x 2 m high) of thick, tangled stems (see Fig. 1) that it has probably been present here for at least 5 years. The southern end of this clump has started to climb up a nearby kanuka and is currently about 10 m up (see Fig. 2). Numerous seedlings were also present around this clump. Seedlings – AK 250905 (D.B. Rogan 490b), stems with rhizome – AK 250904 (D.B. Rogan 490a).

The second population is located about 50 m north of the first and is in the middle of deep shaded bush about 3 m up the southern side of a stream bank. In this area it forms dense, tangled, climbing stems which reach over 12 m to the canopy and appears to send down adventitious intertwined roots(?) which root when they reach the ground. A number of seedlings were found here also –AK 250903 (D.B. Rogan 476).

The third "population" is actually just one individual on the northern side of the stream, seen growing intermixed with *Asparagus scandens* and *Ripogonum scandens*.

Fig. 2 *Geitonoplesium cymosum* climbing 10 m up kanuka.

Morphology

The leaves of the wild specimens of *Geitonoplesium* in Birkenhead are lanceolate and generally about 7 cm long by 1 cm wide. In its natural areas the leaf shape and size is apparently extremely variable (ovate to narrow-lanceolate to linear; 2-13 cm long by 0.2-3.5 cm wide (Conran & Clifford 1986)) and subspecies and forms have been proposed based on these characters but are generally not recognised (Harden 1993). The growing stem is leafless (with only bluish-grey bracts) and looks rather like a very elongated edible asparagus (*Asparagus officinalis*) with similar colouring. It appears the elongating stem doesn't produce leaves until it has latched onto a suitable "host" tree, wound itself around it and become more stable. These stems normally trail along the ground, setting root as they go, but I have observed some growing vertically which were over 2 m tall. The older stems become woody and very hard and in Fiji are used as pegs or nails (Smith 1979). The stems reach about 1 cm diameter.

The plant was first observed flowering during September and in November occasional green unripe fruit were present. The fruit were nearly perfectly spherical and ranged in size from 0.5-1 cm diameter. All accessible fruit were collected, although there were more further up the vine. The number of seeds in each fruit was counted with the average no. = 2.7 seeds/fruit (range 1-6; n=7). All seeds appeared to be viable. Harden (1993) states that the fruit produce numerous seeds and that fruit can be up to 2 cm diameter. In Australia it appears the flowers are present during spring and summer (suggesting the fruit

are also), whereas in Fiji the flowers and fruit are found throughout the year (Smith 1979).

Discussion

There are a number of factors about *Geitonoplesium* which suggest that it may become a serious environmental weed in New Zealand. These are outlined below:

- it produces bird-distributed fruit that contain numerous seeds (see above),
- it is a strong climber – observed growing over 12 m high up a kanuka tree and producing foliage above the kanuka canopy,
- can send down aerial roots(?) which twine around themselves for support and set root in the ground,
- forms dense, smothering swards of vegetation,
- has a suckering habit – can form roots where the stem touches the ground,
- has a long flowering and fruiting period,
- may out-compete similar native species (e.g. *Ripogonum scandens*),
- appears it may kill "host" plant by strangulation – as is seen with *Asparagus scandens*,
- has underground rhizomes which can be over 15 cm deep,
- dry older stems may pose a significant fire risk,
- foliage appears to be both shade and full light tolerant.

A rather conservative assessment of the "weediness score" using the system as outlined in Owen (1997) gives this plant a score of 31, which means that it has a priority group A ranking for weed-led programmes (Owen 1998). This score could be even higher if fire danger were taken into consideration as the old woody bases of the stems would be particularly inflammable. Other well-known weeds which have similar "weediness scores" include *Ageratina riparia* (31), *Hedychium gardnerianum* (31), *Lonicera japonica* (31) and *Ligustrum lucidum* (32) (Owen 1997). Of the climbers in the list compiled by Owen (1997) only *Clematis vitalba* (33) and *Solanum jasminioides* (32) rank higher. Using a similar system in Esler (1988) *Geitonoplesium* also comes out as a group 1 weed (with a score of 11).

There are a few limiting factors which may help limit or negate this plant's effect on the environment. The main one is the fact that (as far as we know) it is only present in one small area of bush and could relatively easily be eradicated from there by manual labour. The other limiting factor appears to be temperature, in that it seems to prefer warmer climates (although it does grow naturally in Victoria) and is probably killed by extreme frosts.

In the north of New Zealand this plant could easily thrive, especially considering the warmer winters we have been experiencing recently (global warming?). Unlike *Fatsia japonica* (Rogan 1997) and *Archontophoenix cunninghamiana* (Cameron 2000), *Geitonoplesium* doesn't appear to have to go through a long lag phase before naturalising. It appears it was already well adapted to the Auckland environment and took off as soon as it was given a chance.

If anyone has any more information regarding this plant the author would be keen to hear from them, especially regarding it growing in New Zealand.

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Rhys Gardner, Bill Sykes, and Fanie Venter for assistance with the identification; Jon Sullivan for assistance in the field; Glenn McBeth from Ottow Burke & Associates for permission to visit the site; Ewen Cameron and Paul Champion for comments on the manuscript.

■ New names, combinations, or comments from the journals (7)

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

Ferns and fern allies

"Index of chromosome numbers of indigenous New Zealand pteridophytes" by M.I. Dawson, P.J. Brownsey & J.D. Lovis, *N.Z.J.Bot. 38*: 25-46 (2000). Chromosome counts are listed for 144 species; this represents about 77% of the NZ total.

Conifers

"Contrasted pollen capture mechanisms in Phyllocladaceae and certain Podocarpaceae (Coniferales)" by P.B. Tomlinson, J.E. Braggins & J.A. Rattenbury, *American Journal of Botany 84(2)*: 214-223 (1997). Based on the method of pollen capture, the authors provide more evidence to support the separation of Phyllocladaceae from the Podocarpaceae.

"A contribution to the taxonomy of *Phyllocladus* (Phyllocladaceae) from the distribution of key flavonoids" by B.P.J. Molloy & K.R. Markham, *N.Z.J.Bot. 37*: 375-382 (1999). The flavonoid characters separate the five accepted *Phyllocladus* species in the world, and also suggest there may be three taxa in *P. alpinus* and two within *P. trichomanoides*. The taxonomic status of these variants will be the subject of a separate treatment.

"Monoterpenoid diversity in relation to morphology of *Pinus brutia* and *Pinus halepensis* in an east Mediterranean area (Attiki, Greece): implications for pine evolution" P.V. Petrakis, V. Roussis & A. Ortiz, *Edinb. J. Botany 57(3)*: 349-375 (2000). The observed pattern of variation (hybrids swarms) is interpreted as a result of waves of introgressive influence of eastern *P. brutia* population on *P. halepensis*, dating back to the Pliocene. This may make it difficult to identify these two species accurately in NZ.

Dicotyledons

Indigenous species

P.S. Green, *Flora of Australia 49*: 7 (1994) uses the earlier name *Tetragonia implexicoma* (Miq.) Hook.f. for the widespread (Australia, NZ, Norfolk Id, and extinct on Lord Howe Id?) species previously referred to as *T. trigyna*.

"Systematic notes on *Leptostigma setulosum* (Rubiaceae)" by R.O. Gardner, *NZ Natural Sciences 24*: 1-8 (1999). Gardner supports the placement of *Nertera setulosa* into *Leptostigma setulosum* (Hook.f.) Fosberg, based on, amongst other characters, its long tubular corolla and dry fruit. His study found no support for merging *Leptostigma* with *Nertera*, nor for the sinking of these two genera into *Coprosma*, as proposed by Heads (1996).

"*Nertera scapanioides* (Rubiaceae) redescribed" by R.O. Gardner, *NZ Natural Sciences 24*: 9-19 (1999). This endemic NZ herb is widely distributed, occurring from Northland (Kerikeri) to Stewart Island. A full morphological description is supplied. Gardner also includes notes on the other five *Nertera* species generally accepted for NZ.

"*Leptecophylla*, a new genus for species formerly included in *Cyathodes* (Epacridaceae)" by C.M. Weiller, *Muelleria 12(2)*: 195-214 (1999). The new genus, *Leptecophylla*, contains 12 species from Australia, NZ and several Pacific Island groups, and one species in New Guinea previously included in *Styphelia*. Leaf arrangement and morphology and flower morphology provide the main characters separating *Leptecophylla* and *Cyathodes* s.str. Two NZ species are placed in the new genus. *Leptecophylla juniperina* (J.R.Forst. & G.Forst.) C.M.Weiller subsp. *juniperina* (syn *Cyathodes juniperina*) is recorded as widespread in NZ and fairly widespread in Tasmania. Another two subspecies are described from

Tasmania and southern Victoria. *Leptecophylla robusta* (J.D.Hook.) C.M.Weiller (*Cyathodes robusta*) is described as endemic to the Chatham Islands.

"Sexual arrangements in kohekohe (*Dysoxylum spectabile*, Meliaceae)" by J.E. Braggins, M.F. Large & D.J. Mabberley, *Telopea 8(3)*: 315-324 (1999). This study reveals that individual trees are either male, female or rarely hermaphrodite.

"DNA sequence data reveal polyphyly of Brexioideae (Brexiaceae; Saxifragaceae sensu lato)" by J.A. Koontz & D.E. Soltis, *Plant Systematics & Evolution 219*: 219-208 (1999). Their data indicates that the relationships of *Ixerba* are not with the Escallonioideae, and that the Brexioideae are polyphyletic, adding support for *Ixerba* to be placed in its own family. This supports Takhtajan who raised it to family level in his 'Diversity and classification of flowering plants', Columbia University Press, New York (1997).

"The taxonomy and breeding system of *Colobanthus squarrosus* (Caryophyllaceae)" by B.V. Sneddon, *N.Z.J.Bot. 37*: 195-204 (1999). A new subspecies is also described from western Nelson: *C. squarrosus* subsp. *drucei* B.V. Sneddon.

"A taxonomic revision of *Neopaxia* Ö.Nilss. (Portulacaceae) in New Zealand" by P.B. Heenan, *N.Z.J.Bot. 37*: 213-234 (1999). This revision recognises seven endemic New Zealand species, including 3 new combinations, and 4 new species: *N. calycina* (Colenso) Heenan from central North Island to Canterbury; *N. racemosa* (Buchanan) Heenan restricted to Marlborough/Nelson; *N. sessiliflora* (G.Simpson) Heenan from South Island to Campbell Island and a single location in the lower North Island; *N. campylostigma* Heenan from central North Island to Canterbury; *N. drucei* Heenan restricted to NW Nelson; *N. erythrophylla* Heenan from Marlborough to Canterbury; and *N. linearifolia* Heenan from Nelson to Southland.

"An evolution of the taxonomy of *Utricularia dichotoma* Labill., *U. monanthos* Hook.f. and *U. novae-zelandiae* Hook.f. (Lentibulariaceae)" by M.S. Reut & B.A. Fineran, *N.Z.J.Bot. 37*: 243-255 (1999). Because of considerable variation and similarities of characters found among these three species, with no clear delineation between the taxa, the authors suggest that all three taxa are placed under *U. dichotoma*. The distribution of *U. dichotoma* s.str. is widespread in Australia, including Tasmania, *U. moanthos* E. Australia and NZ, and *U. novae-zelandiae* N. Caledonia and NZ.

"*Coprosma pedicellata* (Rubiaceae), a new species from New Zealand" by B.P.J. Molloy, P.J. de Lange & B.D. Clarkson, *N.Z.J.Bot. 37*: 383-397 (1999). An erect shrub or small tree similar to *C. parviflora* var. *dumosa* sensu Cheeseman (= *C.* "taylorae") with violet drupes, from eastern NZ (from near Gisborne to Southland).

"The vascular flora of Aorangi Island, Poor Knights Islands, northern New Zealand" by P.J. de Lange & E.K. Cameron, *N.Z.J.Bot. 37*: 433-468 (1999). A new combination is made: *Wahlenbergia littoricola* subsp. *vernicosa* (Petterson) de Lange & E.K. Cameron (Campanulaceae), sinking the NZ *W. vernicosa* to a subspecies of the Australian *W. littoricola*.

"Reinstatement of *Alseuosmia quercifolia* (Alseuosmiaceae) from New Zealand" by M.F. Merrett & B.D. Clarkson, *N.Z.J.Bot. 38*: 153-164 (2000). The case is made for what has previously been treated as *A.* x *quercifolia* and *A.* "Hakarimata" to be treated as a distinct species.

"A taxonomic revision of the *Hebe parviflora* complex (Scophulariaceae), based on morphology and flavonoid chemistry" by M.J. Bayly, P.J. Garnock-Jones, K.A. Mitchell, K.R. Markham & P.J. Brownsey, *N.Z.J.Bot. 38*: 165-190 (2000). Two species are recognised in the complex. *H. parviflora* (Vahl) Cockayne & Allan occurs from near Whangarei to north-eastern South Island. *H. stenophylla* (Steudel) Bayly & Garn.-Jones, comb. nov. has three new varieties; *H. stenophylla* var. *stenophylla* occurs from Hamilton to Westport to Cape Campbell; var. *hesperia* Bayly & Garn.-Jones, occurs from north-west of the South Island; var. *oliveri* Bayly & Garn.-Jones, is only known from Stephens Island (Cook Strait).

"*Clianthus* (Fabaceae) in New Zealand: a reappraisal of Colenso's taxonomy" by P.B. Heenan, *N.Z.J.Bot.*

38: 361-371 (2000). Heenan reinstates *Clianthus maximus* Colenso at species level and points out that all post-1980 *Clianthus* records are *C. maximus,* except for the population on an island in the Kaipara Harbour, which is *C. puniceus.*

"A new species of *Hoheria* (Malvaceae) from the Poor Knights Islands and Hen and Chickens Islands, New Zealand" by M. Heads, *N.Z.J.Bot. 38*: 373-377 (2000). Although known for some time and illustrated by Allan (1961), *H. equitum* Heads has not been formerly separated from *H. populnea* before. Heads also discusses the delimitation of *H. lyallii* and *H. glabrata* and that some authors separate these two species into the genus *Gaya.*

B. Adventive species

G.J. Harden (ed.), *Flora of NSW, vol.2*: 163 (1991) uses *Leptospermum polyalifolium* Salisb. rather than *L. flavescens* Smith (Myrtaceae) for the entity naturalised in NZ.

Roldana petasites (Sims) H.Rob. rather than *Senecio petasites* (Asteracaeae) is followed by RHS Dictionary of Gardening (1992) and The Plant Book by D.J. Mabberley (1997 2nd ed).

G.J. Harden (ed.), *Flora of NSW, vol.3* (1992) uses *Helminthotheca echinoides* (L.) Holub instead of *Picris echinoides* (p. 335); and *Westringia fruticosa* (Willd.) Druce instead of *W. rosmariniformis* (p. 644).

Erysimum rather than *Cheiranthus* (Brassicaeae) is followed by RHS Dictionary of Gardening (1992) and The Plant Book by D.J. Mabberley (1997 2nd ed). This affects *Cheiranthus cheiri*, the alternative name for *Erysimum cheiri* (L.) Crantz.

"Interpretation and typification of *Cactus opuntia* L., *Opuntia vulgaris* Mill., and *O. humifusa* (Rafin.) Rafin. (Cactaceae)" by B.E. Leuenberger, *Taxon 42*: 419-429 (1993). The correct names for the two species formerly known as "*O. vulgaris*" are *O. humifusa* and *O. monacantha*. The correct name for the spiny erect naturalised species in NZ is *O. monacantha* Haw.

"Transfer of *Cyphomandra* (Solanaceae) and its species to *Solanum*" by L. Bohs, *Taxon 44*: 583-587 (1995). Data from molecular studies demonstrate that *Cyphomandra* is nested within *Solanum*. *Cyphomandra betacea* is transferred to *Solanum betaceum* Cav. The *Cyphomandra* group is now referred to as *Solanum*, section *Pachyphylla*.

"A new name for a widespread and misunderstood species of *Verbena* (Verbenaceae)" by P.W. Michael, *Telopea 6(2-3)*: 181-183 (1995). A new naturalised species is described, *V. incompta* P.W. Michael, of presumed S. American origin. Specimens are cited from Brazil, S. Africa, Papua New Guinea, Fiji, NZ (Clevedon near Auckland, *Orchard 3280*, dup. of AK 129654), Norfolk Id, & Australia. It is similar to *V. bonariensis* and *V. brasiliensis*.

"Systematic studies in the eucalypts. 7. A revision of the bloodwoods, genus *Corymbia* (Myrtaceae)" by K.D. Hill & L.A.S. Johnson, *Telopea 6(2-3)*: 185-504 (1995). The bloodwoods are separated from *Eucalyptus* at species level and placed in a new genus *Corymbia*. 113 species are described, 33 of them new. Of the 26 species of eucalypts so far recorded adventive in NZ this revision only affects one: *E. ficifolia* to *Corymbia ficifolia* (F.Muell.) K.D.Hill & L.A.S.Johnson. There is still debate at what level to recognise the bloodwoods, genus or subgenus level?

Silene rather than *Lychnis* (Caryophyllaeae) is followed in 'The Plant Book' by D.J. Mabberley (1997 2nd ed). This affects three naturalised species, their new combinations are: *S. chalcedonica* (L.) E.Krause, *S. coronaria* (L.) Clairv. and *S. flos-cuculi* (L.) Clairv.

"Twelve new names in *Geranium* L." by C. Aedo & F.M. Garmendia, *Kew Bull. 52(3)*: 725-727 (1997). *Geranium yeoi* Aedo & Muñoz Garm. is erected to replace the nom. illeg. *G. rubescens* Yeo. The new name is dedicated to P. Yeo, discoverer of the plant.

"Notes on the fruit and seed of *Homalanthus* (Euphorbiaceae)" by R.O. Gardner, *Adansonia 21(2)*: 301-

305 (1999). The structure of the fruit and seed is described for *H. populifolius* of Australia (and naturalised in NZ), *H. polyandrus* of the Kermadec Islands, *H. trivalvis* of Melanesia and *H. repandus* of N. Caledonia.

"A new combination for *Sedum decumbens* R.T.Clausen (Crassulaceae)" by V.V. Byalt, *Kew Bulletin 54*: 458 (1999). *Sedum kimnachii* Byalt is proposed to replace *S. decumbens* R.T.Clausen (1975), non *S. decumbens* Lucé (1823).

"Revision of the genera *Aleurites, Reutealis* and *Vernicia* (Euphorbiaceae)" by W. Stuppy, P.C. van Welzen, P. Klinratana & M.C.T. Posa, *Blumea 44*: 73-98 (1999). *Aleurites moluccana* remains unchanged, but *Aleurites fordii* is placed in *Vernicia*: *V. fordii* (Hemsl.) Airy Shaw.

G. Paczkowska & A.R. Chapman, *The Western Australian Flora* (2000) use *Callistachys lanceolata* Vent. rather than *Oxylobium lanceolatum* (Fabaceae),

Monocotyledons

Indigenous species

"Taxonomy, ecology, and conservation of *Sporodanthus* (Restionaceae) in New Zealand" by P.J. de Lange, P.B. Heenan, B.D. & B.R. Clarkson, *N.Z.J.Bot. 37*: 413-431 (1999). A new species, *Sporodanthus ferrugineus* deLange, Heenan & B.D.Clarkson, is described from the peat bogs of the Waikato Region. It is split on several characters from *S. traversii*, which is now treated as a Chatham Island endemic.

"The vascular flora of Aorangi Island, Poor Knights Islands, northern New Zealand" by P.J. de Lange & E.K. Cameron, *N.Z.J.Bot. 37*: 433-468 (1999). A new combination is made: *Xeronema callistemon* f. *bracteosa* (L.B.Moore) de Lange & E.K. Cameron, sinking the previous var. *bracteosa* to forma level reflecting that in the wild it appeared to be no more than a sporadically occurring, stable morph.

Adventive species

P.S. Green, Agavaceae, *Flora of Australia 49*: 522 (1994) uses *Aloe maculata* All. rather than *A. saponaria*.

"A revision of the infraspecific taxonomy of *Cyperus esculentus* (yellow nut sedge) with an experimentally evaluated character set" by P. Schippers, S.J. Ter Borg & J.J. Bos, *Systematic Botany 20(4)*: 461-481 (1995). The authors recognise four varieties of this troublesome species.

"A taxonomic review of the naturalised species of *Babiana* (Iridaceae) occurring in Western Australia" by B.J. Lepschi & J.C. Manning, *Nuytsia 13(2)*: 283-292 (2000). The authors suggest for Australia that the taxon previously referred to as *B. stricta* is probably referable to *B. angustifolia* Sweet. The same appears to be true also for the single *Babiana* taxon naturalised in NZ (pers. obs.).

"Bangalow palm (*Archontophoenix cunninghamiana*) begins to naturalise" by E.K. Cameron, *NZ Bot. Soc. Newsletter 60*: 12-16 (2000).

"Adventive species new for New Zealand" by A.J. Healy, *NZ Bot. Soc. Newsletter 60*: 16 (2000). *Juncus platyphyllus* is recorded as naturalised at Addington, Christchurch.

"The New Zealand orchids: 2001" by I. St. George, *NZNOG Journal 77*: 30-33 (2000). This is the author's annual checklist of the NZ orchids, currently totalling 109 species.

Some changes from 'Flora of NZ, vol. V, Grasses', by E. Edgar & H. Connor (2000). The flora records 188 native species and 226 naturalised grasses.

Axonopus affinis to *A. fissifolius* (Raddi) Kuhlm.
Festuca arundinacea to *Schedonorus phoenix* (Scop.) Holub
X*Festulolium holmbergii* to X*Schedololium holmbergii* (Dörfl.) Holub
Hordeum to *Critesion*, which involves naturalised 7 taxa
Rytidosperma is retained (27 spp.)
Stipa 11 taxa to *Austrostipa*, 2 to *Nasella* and 1 to *Achnatherum* (*A. petriei*), leaving none in *Stipa*

Zoysia planifolia is sunk into *Z. pauciflora*.

General
"Contributions to a chromosome atlas of the New Zealand flora - 35. Miscellaneous families" by B.G. Murray & P.J. de Lange, *N.Z.J.Bot. 37*: 511-521 (1999). Chromosome counts of 65 angiosperm taxa and two hybrids are presented.

"Index of chromosome numbers of indigenous New Zealand spermatophytes" by M.I. Dawson, *N.Z.J.Bot. 38*: 47-150 (2000). Chromosome counts are listed for 1212 species; this represents 64% (100% for gymnosperms, 74% for dicots, and 40% for monocots) of the total.

A list of new adventive ferns, conifers and dicots is likely be published in the *N.Z.J.Bot* in 2001.

For the rest of this series see *NZ Bot. Soc. Newsletters* 36, 37, 42, 46, 50, 56.

Research Reports

- **The possum in New Zealand as viewed by authorities in the 1920's**

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

Aspects of the history of the introduction and distribution of the possum in NZ were recorded by G.M. Thomson (10), L.T. Pracy (6) and in R. Galbreath's history of the Wildlife Service (2, p.40). In the early days of settlement in NZ individual colonists, acclimatisation societies and later the Tourist Department introduced and distributed the possum, primarily in the hope of establishing a fur industry. And evidence today indicates that the possum-fur industry in NZ is "booming" (1). Some scientists including H.B. Kirk (1859-1948) and L. Cockayne (1855-1934) supported the distribution of the animal as harmless to the vegetation and potentially of economic value. The history of the view of authorities in the 1920's provides lessons for today.

I have summarised the evidence that L. Cockayne failed to understand the possum danger (9) and so contributed to a lasting problem for our environment. Lucy Cranwell Smith in 1993 expressed her disappointment to me (8) that Cockayne did not comprehend the danger in the spread of the possum,

"...even when I told him of damage done in the Auckland district. One of my photographs of a peach gnawed by one of the animals – taken in the Huia district – was published in the *Auckland Star* in the late 20's".

Commercial imperatives seemed to be at the heart of the attitude of the acclimatisation societies. According to Pracy (6) the Department of Agriculture,

"...could see no objection [to the distribution of possums] provided opossums were released in large forested areas". However it is good to note Pracy also records that E. Phillips Turner (1865-1937), Chief Officer, Forestry Branch, questioned the wisdom of further liberations of possums in large forested areas, and the Department of Internal Affairs was having very grave doubts as to the prudence of indiscriminate releases of possums in forests.

To help resolve questions relating to the animal in NZ Professor H.B. Kirk in 1919 was requested by the Government, through the NZ Institute, to make a comprehensive study of the problem and specifically to answer two questions and he sought answers to the questions from various sources and had discussions, "...with men who know" (3),

"1. Whether the damage to forests is likely to outweigh advantages to settlers in being able to earn a revenue by trapping or taking opossums in new country.

2. On what areas these animals could be liberated with reasonable security against their overrunning and damaging state forests."

Kirk in his 1920 report (3) concluded,

"1. The damage to New Zealand forests is negligible, and is far outweighed by the advantage that already accrues to the community. That advantage might be enormously greater. On the one hand, the

damage to orchards and gardens is indisputable. Much annoyance, and a loss statable at hundreds of pounds, is caused. On the other hand, the volume of the present trade in skins is statable in thousands, but the loss is borne by one section of the community while the gain from trade is made by another section.

2. Opossums may, in my opinion, with advantage be liberated in all forest districts except where the forest is fringed by orchards or has plantations of imported trees in the neighbourhood."

Kirk discusses the damage caused by possums to orchards, gardens, plantations, plant and animal sanctuaries, and forests. Regarding plant and animal sanctuaries he commented,

"Although I am convinced that opossums do no serious damage to the New Zealand bush as is I think from the evidence I have given below, I strongly urge that they should be exterminated in animal and plant sanctuaries where they exist".

Kirk did examine a number of forests near Wellington and elsewhere and even where there was evidence of a large population he could find no evidence of damage. He also cites evidence from R.M. Laing (3),

"...that trained and careful observer...as may clearly be seen from his interesting notes on Peel Forest published in the *Timaru Herald* of 24th January last. There is much evidence that a few opossum-brained human beings with pen-knives do more damage in half an hour than the whole opossum population of Peel Forest could do in a decade and the opossums are of value to the community".

Kirk in his report also refers to the effect of possums on cattle and deer, but of course in the 1920's it had yet to be discovered that possums harbour tuberculosis. Despite Kirk's report, the Department of Internal Affairs declined to approve requests to liberate further possums though many liberations were made illegally.

Politicians were for and against possums and early in the 20th century the commercial aspects of possums held sway over environmental considerations which many in NZ had yet to embrace. Thus Prime Minister Seddon is reported to have supported the dispersal of the possum (7).

It seems likely the 1920 report of Kirk influenced Cockayne's attitude (9) and the view of L. MacIntosh Ellis (1887-1941) of the State Forest Service which in its 1923 Report (4) records:

"An investigation into the habits of this animal show that its adverse effect upon silviculture is to be deemed a negligible quantity especially as it is easy to trap or poison, and the skin, being a valuable article, will always pay for the work entailed".

Then in the 1927 Annual Report of the State Forest Service (5),

"It is generally recognised that the opossum does little or no damage to the forests, and this opinion is supported by the investigations recently made on beech forests by the Honorary Botanist to the Service, Dr L. Cockayne, FRS, who has comprehensive knowledge of the forests before and after the introduction of the opossum".

I have noted (9) that C.M. Smith (1892-1961) was another who supported the possum. He was a notable forester and Chief Inspector of the Forest Service (1930-50), and later the third Director of the former DSIR's Botany Division (1951-57). Lucy Cranwell Smith wrote (8),

"C.M. Smith was another "expert" who pooh-poohed warnings about the animals. I wrote him that they were abundant in the Waitakeres. I remember counting 30 animals, caught in the headlights of our car, in the short crossing of the reserve on the way to Anawhata. Mr Smith wrote to me when I contacted him that there would be no damage from possums because it was in their nature to hide in the forest during the day and come out to eat grass along the coast after nightfall. How wrong he was about that! Like you, Mr Smith wrote his letters in longhand, so there may be no copy of what he wrote to me. However my note to him may still be on the DSIR files".

The acclimatisation societies must bear some responsibility for extending the possum distribution in NZ (6,10). But even in the late 1800's the activities of acclimatisation societies were coming under fire and Pracy (6) quotes from the journal *Nature* published in 1872 (I have been unable to find the reference in this year) which refers to "the silly mania for acclimatisation" and NZ is mentioned with the perhaps

prophetic comment,

"...so warmly fostered by many well meaning though ill advised persons, and nowhere more so than in New Zealand. In a reckless way animals of extremely doubtful advantage have been transported to the Antipodes and, unaccompanied by any of those checks which keep natural fauna balanced, the importation will inevitably become the greatest of nuisances. Among the pilgrim fathers of New Zealand who will ultimately obtain the apotheosis, the members of their various acclimatisation societies will, we suspect, scarcely be reckoned".

Kirk records in his 1920 Report (3),

"The Otago Acclimatisation Society and other bodies have urged upon the Government in the past the desirability of stocking with opossums the forests on either side of the Great Alpine Range. I strongly recommend this course. Here are great areas of forest, much of which will never pay for felling or milling on account of inaccessibility and the broken nature of the country, and in some cases of the low milling-value of the accessible timber. The country should suit opossums well. It might be made a great fur-bearing country, enabling the fur trade to reach proportions at least equal to those attained by the Tasmanian trade – say over £200,000 a year".

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Herbarium Report

- **Auckland Museum Herbarium Report**

250,000th specimen added to AK herbarium

On 5 September 2000, the 250,000 was accessioned into the Auckland Museum herbarium (AK) database (AKILLES). The event was marked by a morning tea in the Museum's Education gallery. Nineteen people attended the ceremony, a mixture of other Museum Collection Division staff, current and past volunteers, research associates and friends of the herbarium.

Milestone AK numbers now include:
AK 100,000 L.M. Cranwell, *Ranunculus ternatifolius*, near Enys, January 1931; AK 200,000 P.J. de Lange, *Alectryon excelsus*, Waikato near Lake Whangape, January 1990; AK 250,000 R.O. Gardner, *Nertera dichondrifolia*, Weiti River, March 1998. Note - AK 50,000 and 150,000 are not yet databased.

In the *NZ Bot Soc Newsletter 23* (March 1991) Anthony Wright recorded the 200,000th specimen accessioned into AK on 12 December 1990. The ceremony at that time was marked by a "celebratory artillery morning tea" (Jack Mackinder's military influence) on the Museum roof. OSH regulations forbid us marking the 250,000th specimen on the roof (hand rails too low!), which might have been just as well because the Auckland weather wasn't at its usual best that particular morning.

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

Conferences & Workshops

■ 16th John Child Bryophyte Workshop, Blackball

Thursday, 26th October, saw the Dunedin contingent of Allison Knight, Kelvin Lloyd, Maria Mistral, Anne-Marie Oliver, David Orlovich and John Steel head off for the annual bryophyte workshop this year held at the historic West Coast township of Blackball, famous for the 1908 Miners' Strike, communism, the New Zealand Labour Party, coal, gold but, most notably these days, sausages!. First stop was Timaru to view a fine *Drimys* in full bloom - and conveniently sited near the public loos! I found the new viaduct at Arthur's Pass a bit of a disappointment and was much more impressed by the continuing road works.

The evening was spent renewing old acquaintances and making new ones among the 33 participants, including several from Australia, in the bar of the Formerly the Blackball Hilton. Blackball sausages were on the menu (and stayed there for the duration) and we were well pleased with the service of out hosts, Linda and Jane.

Friday dawned bright and clear without a sandfly to be found and a great day was spent fossicking around the Croesus Track. An evening talk by Jessica Beever described recent developments in the study of a possibly rare species of *Tortella* at the nearby Brunner Mine remains, as well as details of the problems of *Calyptopogon mnioides* var. *anguste-limbata* known only from the type collection from Pine Hill, Dunedin.

Saturday saw us at the top of a sunny Mt Sewell where there was a great view of the Grey River Valley and its surrounds. One interesting find was the filmy fern, *Hymenophyllum malingii*, growing on an old stump, not *Libocedrus*, its usual haunt. On the way down, the Dunedinites stopped to hunt in the forest for fungi and some interesting finds were made to keep David happy. Then the group stopped at the Brunner Mine site where it is proposed to clear the remains of any vegetation but thoughts were to be given to leave an area with the *Tortella* (which Jessica now thinks is *Tortella knightii* and not so rare after all) alone. While poking around there, the liverwort, *Asterella australis*, was found growing on some brickwork. This was a new record for it in the South Island so maybe the local historical Society will be doing even less cleaning than they thought.

Sunday and again the sun shone for our trip to the limestone areas of the Bullock Track beyond Punakaiki. Philippe Gerbeaux from DoC gave an excellent talk in the evening on wetlands classification and conservation on the West Coast and mooted the possible use of bryophytes for identifying different wetland types.

The last day gave us a hint of the rain the West Coast is renowned for but by the time we arrived at the Moonlight Track it had eased and soon gave way to sunshine. We left earlier than the rest so we could help David examine some fungal processes in action - at Monteith's Brewery in Greymouth! David decided to finish the weekend in style so, after dark, we headed off up the valley and had our very own fireworks display - much to the bemusement of Mike, our local guide, who was having a difficult enough job trying to understand why anyone would study mosses in the first place!

Tuesday saw our tired group wend its weary way home after a very pleasant and hospitable weekend. Next year, the workshop will be held in the North Island so keep in mind this time next year.

Thanks to David Glenny, Geoff Spearpoint and Allan Fife for organising the workshop and to Professor Bannister of the Botany Department in Dunedin for the logistical support provided to enable Otago to be well represented once again.

John Steel, Botany Dept, University of Otago, PO Box 56, Dunedin (Extract from BS of Otago Newsletter No. 24, November 2000.)

Biography/Bibliography

▪ Biographical Notes (40): Dennis Huckvale Leigh FRIH (1908–1982)

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

Dennis Leigh, horticulturist, botanist, and alpinist, was born on 12 February 1908, at Penrith, Cumberland, in the English Lake District, the son of Herbert Wharfedale Leigh, a dentist and Rebecca Huckvale. After boarding at Scarborough College and working at Hayes Garden Centre, Ambleside, he trained at Aldenham Gardens, Hertfordshire, and then for three years at the Royal Botanic Gardens, Kew (1,2). As part of his studies at Kew he was required to make a collection of pressed plant specimens and this he did in the Lake District during his 1931 summer holiday (3); and while at Kew he won the British Botany Prize (2). In 1933 Dennis came out to work in the Dunedin Botanic Gardens as a foreman (2). In so doing he followed in the footsteps of Alexander Walter Anderson (1901–86), born in Scotland, trained at Kew, and foreman from 1926 until 1932 when he became Superintendent, Parks and Reserves, Timaru.

In 1933, soon after arriving, Dennis became an Associate Member of the N.Z. Alpine Club, and in 1935 a Member (4). In 1934 he gave a Winter Lecture to the Otago Branch on "The English Lake District and its Rock Climbs" (5) and next year spoke on "Cumberland" (6). As for his expeditions during his Dunedin period he has left the following list (7).

1934: Botanical visit to the Matukituki Valley and Arawata Region. Botanical exploration on Mt Earnslaw and the Remarkables.
1935: Botanical visit and ascent of Mt Aspiring from the Matukituki Valley, also plant collecting expeditions to the Rock and Pillar Range, the Garvie Mountains, and Mt Maungatua. [On 3 January 1935, J.A. Sim, Leigh, and W.H. Walker made first ascents of Mts Bevan (7470') and Avalanche (8300') in the Aspiring group (5)].
1936: Botanical visit and ascent of Mt Tutoko [Darran Mountains, Fiordland] from the Hollyford Valley.
1937: Botanical visit to Mt Tutoko from Milford Sound, bringing back a large collection of high alpine plants for the Dunedin Botanic Gardens. Visits to Mt Egmont and Rotorua Botanical Districts.
1938: Plant collecting expedition to the Humboldt Mountains, bringing back extensive collections of plants for the Christchurch Botanic Gardens.

This list shows that it was probably in 1937 that Leigh collected the little cushioned spear-grass that bears his name. He found it in the Darran Mountains beneath the summit rocks of Mt Milne at an altitude of 6,500 ft and gave material to J. Scott Thomson of Dunedin who grew it in his scree garden. It was described by H.H. Allan in 1939 (8).

On 18 May 1938, Leigh spoke to the Dunedin mountaineers about "Alpine Botany and Colour Photography" (9); and on 21 June he addressed the Canterbury Horticultural Society on "Otago, its Gardens, its Beauty Spots, and its Alpine Flora" showing coloured slides (10). Later that year he became Curator of the Ashburton Domain (11). During his time there, "W. Thomas was asked to draw up plans for a proposed Canterbury Centennial swimming pool. The Woolston Brass Band gave a concert on the island on 19 March, 1939. Twelve more acres of sports ground were prepared. Fifty cherry trees were planted, half along West Street and half behind the pavilion. Several white swans were donated for the lakes. Donations of bulbs were invited and 14,000 were received" (11). His expeditions in 1938–40 involved "excursions to the Canterbury mountain ranges, and collections of two new species" (7). I am not sure what these are.

On 6 September 1940, Mr Leigh married Joan Tasman-Smith who had worked with him in Dunedin (2); and in June 1941 he was called up (11). His 3-year service in the Pacific theatre during WW2 included teaching jungle survival (1); and he participated in the landing of the 36th Battalion on Mono Island in the Treasury Islands on 27 October, 1943 (12). He was also co-editor of a history of this Battalion, published in 1944. The frontispiece illustrates another of his skills. It is a very accomplished painting of the interior of tropical rain-forest dominated by the plank buttresses and bole of a giant tree. The caption states: "Our frontispiece, Wild Mahogany, by Dennis Leigh, was a prize winning entry in an Arts and Crafts exhibition organised by the New Zealand forces in the Treasury Islands" (12).

After the war Mr Leigh returned to Ashburton for a short time (1,2). Then, in 1946, he became the Nelson City Council's Superintendent of Parks and Reserves. He inherited 100 ha of parks, a staff of 10, and an annual expenditure of about $10,000. By the time of his retirement in 1974 he had 40 staff, an annual budget of $230,000 and was responsible for 2212 ha. Major achievements were the development of the Broadgreen Rose Garden and the neglected Isel Park, purchased by the Council in 1959, as well as the landscaping of the Marsden Valley Cemetery (1). And expeditions such as the following continued.

1948–51: Collection of alpine plants from the Nelson ranges sent to the Open Air Native Plant Museum, Wellington (7).

1963: Climbed Mt Tapuaenuku (Marlborough) (13).

1960s: Sent "several collections from the Nelson area" and "montane Nelson specimens" to Botany Division DSIR (14).

1970: Member of the DSIR Entomology Division expedition to the Three Kings Islands in November which spent 4 weeks on Great Island with a brief visit to South West Island at the end. The seven-man team consisted of Dr G. Kuschel (leader), Mr J.G.R. McBurney, Dr G.W. Ramsay, and Dr J.L Watt (all of Entomology Division, Nelson), Mr D.H. Leigh (botanist, Nelson), Dr D.J. Galloway (lichenologist, Biochemistry Division, DSIR Palmerston North), and Dr F. Climo (malacologist, Dominion Museum, Wellington). "Apart from the lichens a small collection of plants was also made and included 10 new records" (15).

Dennis Leigh was elected a Fellow of the Royal New Zealand Institute of Horticulture in 1963 (16). He was also a President of the Nelson Horticultural Society and an Honorary Secretary of the New Zealand Institute of Park Administration (1). He died in the Nelson Hospital on 18 June, 1982 after a short illness (1,2) but he would be glad to know that a recent report has told us that his spear-grass is now known from 15 general locations in the Darran Mountains, with populations of several hundred at some locations, and is "not under threat from introduced or unnatural agents" (17).

Eponymy

1939 *Aciphylla leighii* "Mount Milne, Darran Range, Western Otago (Fiord Bot. Dist.) at c. 1980 M. D. Leigh! Type at herbarium, Plant Research Bureau, Wellington". H.H. Allan *Trans. Roy. Soc. NZ 69*: 270–71.

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Acknowledgements

I am very grateful to Mrs Rebecca Bowater (Nelson), Dennis Leigh's daughter, for information about her father, and also to Mr Ron Flook (Nelson) for finding Mrs Bowater for me. Dr G. Kuschel (Auckland) and Dr D. J. Galloway (Dunedin) kindly helped with the Three Kings Expedition and Dr Galloway with Dennis Leigh as alpinist. Thanks also to Mrs Wendy Weller for typing this note, and to Mrs Trish Faulkner (Landcare Research, Lincoln), Mr J.O. Taylor and Mr R. McNaughton (both of Christchurch) for searches.

Publications

Book Reviews

■ **Images in words and pictures – a review of "Mosses and other bryophytes: an illustrated glossary". Bill and Nancy Malcolm. 2000. Micro-optics Press, Nelson. iv + 220 p. A5 format. ISBN 0-473-06730-7. Available from Manaaki Whenua Press, Lincoln for $64.00 (NZBS members) or $80.00 (non-members)**

They've done it again! "Mosses and other bryophytes: an illustrated glossary" is a pictorially perfect, extremely useful tool for students of bryology. The text is clear and concise, providing extra information for terms that are not strictly morphological – see the definition for auxin and for didymodontolith (perhaps the longest word in this glossary and one that would be worth saving for a game of Fictionary Dictionary!).

Every term that you ever wanted to know about in connection with bryophytes, from a- to zygote, is defined in this glossary. There are over 1500 cross-referenced entries and almost 1000 illustrations. On any one page of text there is a minimum of two and a maximum of seven illustrations. The layout varies considerably, which is an attractive feature. Almost 400 bryophyte species are illustrated, and there is an index to these in the back, so this can be a valuable check on identification.

The terms moss, liverwort, hornwort and bryophyte are not defined in this glossary, the assumption being that users of this glossary are already adept at classifying these organisms. However, I expect that 99.9% of all terms ever used to describe attributes of bryophytes have been included in this glossary.

Apart from the excellent photographs and drawings, the most useful feature of this book is that illustrations and definitions are always on the same page. It is very difficult to achieve an exact balance between text and illustration (as many users of field guides will attest) but it has been possible in this case because of the extensive collection of photographs (in particular) that the authors have amassed and the total control over the layout that the authors have had. Readers will note the very economical use of space in this book – there's no blank space anywhere and this keeps the cost of the book lower, especially in a full-colour publication such as this.

Many expert bryologists would have loved to have had this glossary available to them when they were learning their trade but, even so, they will benefit enormously from having this comprehensive glossary at their fingertips – a one-stop terminology shop. As a rank amateur and beginner, I am fast running out of excuses for not being able to identify mosses – lack of time seems to be my only defence now! Suffice to say, this glossary will be a fundamental tool in my quest to know more about bryophytes.

Now for the negative, but hopefully constructive, criticism. Aside from the trimming and binding of the signatures (over which the authors have no control) my only request would have been for the inclusion of Beever, Allison and Child "The Mosses of New Zealand" in the section on further reading (p. 213). Given that there is considerable repetition between this section and the list of literature sources consulted (p. iii), this book could have been included for the benefit of New Zealand users. I notice that all the other major markets (USA, UK, Japan, Australia) are covered with reference to at least one identification guide.

I unreservedly recommend this book to anyone who is interested in bryophytes or who appreciates fine photography. The amount of work and careful attention to detail that has gone into the production of this book is apparent upon opening at any page. I extend my congratulations to the authors and eagerly await their next beautiful botanical book.

Carol J. West, Department of Conservation, P O Box 743, Invercargill

■ **"Mushrooms and other fungi of New Zealand" Don Horne, 2000. 129 pp. Paperback, Reed Books, Auckland. $14.95 ISBN 0 7900 0728 2**

This latest in the Reed New Zealand Nature Series, a new series following the format of the old Mobile

New Zealand Nature Series of the 1980's, which included Marie Taylor's "Mushrooms and Toadstools", is also pocket-sized but without the plastic jacket for outdoor use.

This is not the only difference however. After a brief introduction to the fungi, their uses and classification, there follows descriptions of eighty of the generally more common species of New Zealand fungi. With only one species to a page, the book has a spacious, uncluttered feel to it. The descriptions are clear, concise and easily comprehensible to anyone lacking prior knowledge.

Below each piece of text is a half-page, full-colour photograph and occasionally a second, full-page one for good measure. These photographs are superb. I have already been able to put a name to *Peziza ammophila* found among the dunes at Long Beach, and the beautiful *Conchomyces bursaeformis*, which distracted me at a recent fern workshop. A fine little book and an excellent introduction to a fascinating part of our flora.

John Steel, Botany Dept, University of Otago, PO Box 56, Dunedin (Extract from BS of Otago Newsletter No. 24, November 2000.)

- **Calendar Review: Ferns, mosses, liverworts, lichens, fungi and algae**

After the success of their 2000 calendar, Judith Curnow and Heino Lepp have produced another for 2001, again featuring Australian and New Zealand cryptograms. The format is identical to last years', with A4 size photographs on one page opposite the calendar which is decorated with several smaller photographs and/or drawings.

As to be expected the photographs are excellent aids for helping to identify these often difficult non-flowering plants and fungi. The large photographs depict twelve species and the smaller, 34, most of which are also present in New Zealand. An interesting purpose for the calendar is to enable those with no knowledge to identify species of fungi in the field and supply that data to a central database for mapping distributions of fungi throughout Australia (and New Zealand?). The accompanying notes are informative and easy to follow and I felt that their suggestions of cryptogamic wombats could lead to some imaginative discussions over a few beers.

The calendar costs $NZ17 and can be obtained by contacting **vombatus@hotmail.com** or direct from **PO Box 38, Belconnen, Act 2616, Australia.** They will advise how payment can be made in New Zealand to avoid exchange costs.

John Steel, Botany Dept, University of Otago, PO Box 56, Dunedin (Extract from BS of Otago Newsletter No. 24, November 2000.)

Journals Received

- **New Zealand Native Orchid Group Journal 77**

December 2000. Edited by Ian St George. 36 p.
Original papers in this issue are:
Thelymitra hatchii "Waitere". Margaret Menzies

WATCH OUT FOR a new edition of the NZNOG Field Guide, written and drawn by Ian St George, Bruce Irwin, Dan Hatch and Eric Scanlen. Extensively revised, this will be available in 2001.

Desiderata

■ **Request for fresh flowering and fruiting specimens**

Audrey Eagle has devoted almost 50 years of her life to painting in exquisite botanical detail the leaves, flowers and fruits of all the trees and shrubs native to New Zealand. Audrey has already published two superb volumes of colour plates accompanied by precise botanical descriptions. These are to be re-published, together with a proposed third volume. This will include a revision of the names and give an opportunity to complete some of the earlier illustrations with additional material (see list below). At present the publisher is desirous of combining the present two books and the proposed third book into two books with all species in a genus together. For the completion of this project it is not essential to add the requested specimens to the illustrations but it will undeniably make the final result more satisfying to the users. Audrey urgently needs specimens this flowering and fruiting season so that publication can proceed next year. Once found, keep cool and moist until you can contact Audrey and send them to her.

Her address is: 83 Marion Street, Macandrew Bay, Dunedin. Phone 03 476 1976, Fax 03 476 1946, email: aeagle@xtra.co.nz

The following list is based on Tony Druce's unpublished 1993 List & Shannel Courtney's 1999 10th Revision.

KERMADEC ISLANDS	*Ascarina lanceolata*	♂flowers
	Pittosporum Kermadec Island form	fruit
NORTHLAND	*Coprosma neglecta* Maunganui Bluff form	fruit
	Coprosma macrocarpa ssp. Surville Cliffs form	♂flowers
	Helichrysum aggregatum Surville Cliffs form	flowers
	Leucopogon fasiculatus Northland form	fruit
	Pimelea Mt Manaia form	fruit
	Pseudopanax gilliesii	♂ &♀ flowers
CENTRAL N.I.	*Aristotelia fruiticosa* var. *suberecta*	flowers & fruit
	Rubus cissoides Central N.I. form	fruit
	Olearia virgata ssp. *centralis*	flowers
N.W. NELSON	*Coprosma acerosa* ssp. Cobb Valley form	♂flowers & fruit
	Rubus schmidelioides var. NW Nelson form	♂ &♀ flowers
	Hebe aff. *carnosula* Red Hills form	capsules
CANTERBURY AND OTAGO	*Hebe brockii*	flowers & capsules
	Hebe haastii var. *macrocalyx*	capsules
	Hebe haastii var. *humilus*	capsules
	Hebe hectorii ssp. *subulata*	flowers & capsules
	Hebe hectorii ssp.*demissa*	flowers
	Coprosma ciliata Eastern S.I. form	♂ &♀ flowers
	Coprosma pseudocuneata S.I. form	♂ &♀ flowers
	Aristotelia fruticosa var. *rigidula*	♀ flowers
	Pimelea poppelwellii	fruit
	Pimelea concinna	fruit
	Pimelea urvilleana	fruit

SUBANTARCTIC ISLANDS	*Olearia lyallii*	flowers, pappus & achene
	Dracophyllum longifolium	flowers
	Melicytus "Maritime"	flowers
placed here for convenience not for geographic location	*Melicytus*, Tinline Valley form	fruit
	Melicytus "Cliff"	flowers & fruit
	Melicytus "dark"	flowers
	Melicytus obovatus Mt Owen form	fruit
	Melicytus alpinus	flowers
	Melicytus chathamicus	fruit
	Coprosma acerosa var. *brunnea*	stipule

Allison Knight, Editor, Botanical Society of Otago Newsletter, c/o Botany Department, University of Otago, P.O. Box 56, Dunedin

NOTES

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