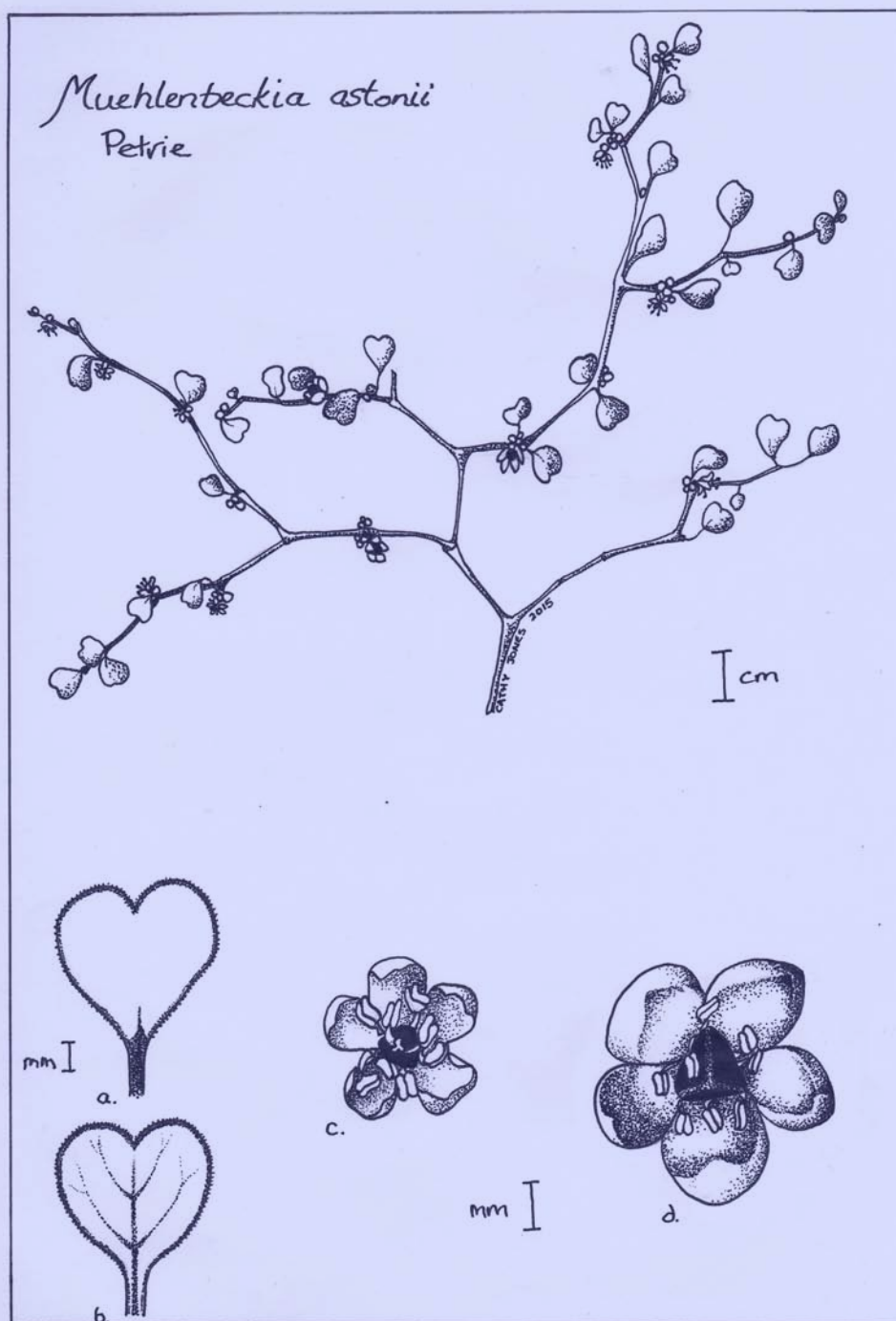


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 119

March 2015



New Zealand Botanical Society

President:	Anthony Wright
Secretary/Treasurer:	Ewen Cameron
Committee:	Bruce Clarkson, Colin Webb, Carol West
Address:	c/- Canterbury Museum Rolleston Avenue CHRISTCHURCH 8013
Webmaster:	Murray Dawson
URL:	www.nzbotanicalsociety.org.nz

Subscriptions

The 2015 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2015 student subscription, available to full-time students, is \$12 (reduced to \$9 if paid by the due date on the subscription invoice).

Back issues of the *Newsletter* are available at \$7.00 each. 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 each year for that calendar year. Existing subscribers are sent an invoice with the December *Newsletter* for the next years subscription which offers a reduction if this is paid by the due date. If you are in arrears with your subscription a reminder notice comes attached to each issue of the *Newsletter*.

Deadline for next issue

The deadline for the June 2015 issue is 25 May 2015.

Please post contributions to:

Lara Shepherd
Museum of New Zealand Te Papa Tongarewa
169 Tory St Wellington 6021

Send email contributions to editor@nzbotanicalsociety.org.nz. Files are preferably in MS Word, as an open text document (Open Office document with suffix ".odt") or saved as RTF or ASCII. Macintosh files can also be accepted. Graphics can be sent as TIF JPG, or BMP files; please do not embed images into documents. Alternatively photos or line drawings can be posted and will be returned if required. Drawings and photos make an article more readable so please include them if possible.

Editor's note

As the editor of the New Zealand Botanical Society Newsletter, I would like to acknowledge David Galloway's significant contribution to this publication. In the three years that I have been editor, David submitted far more articles than anyone else and averaged nearly an article per issue. I always looked forward to David's eloquent emails and am disappointed that I never had the opportunity to meet him in person.

Cover Illustration.

Muehlenbeckia astonii drawn by Cathy Jones from a plant collected in her garden on 24 February 2015. a. Adaxial leaf surface, b. abaxial leaf surface, c. hermaphrodite flower, d. fruit.

NEW ZEALAND BOTANICAL SOCIETY
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New Zealand Botanical Society News

■ Call for Nominations for Allan Mere Award 2015

Nominations meeting the following conditions are invited for the award of the Allan Mere for the year 2015.

Conditions of the Allan Mere Award

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

Nominations should be forwarded by 30 June 2015 to:

Ewen Cameron, Secretary, New Zealand Botanical Society, c/- Canterbury Museum, Rolleston Avenue, Christchurch 8013.

■ Call for suggestions for Loder Cup nomination 2015

The NZBS is one of the named groups able to nominate people for the Loder Cup – New Zealand's premier conservation award. The Loder Cup is entrusted to the Minister of Conservation who appoints the Loder Cup Committee and awards the Cup. The Department of Conservation handles the administration of the award and any other matters. The Cup is awarded annually to the person, group of people, or organisation, which has exceeded all other nominees in furthering the aims and objects of the donor of the Cup.

Suggestions for consideration by the Committee for the Society's nomination should be forwarded to the undersigned by 5 May 2015.

Ewen Cameron, Secretary, New Zealand Botanical Society, c/o Canterbury Museum, Rolleston Avenue, Christchurch 8013

■ Financial Statement for year ended: 31 December 2014

	2014	2013
INCOME		
Donations	\$410.00	\$254.89
Interest	\$29.12	\$29.00
2013 Subscriptions	-	\$2,999.00
2014 Subscriptions	\$3,279.00	\$748.00
2015 Subscriptions	\$1,506.00	-
Total Income	\$5,224.12	\$4,030.89
EXPENSES		
Postage costs	\$2,524.40	\$1,608.63
Printing costs	\$1,788.02	\$1,800.90
Calligraphy costs (Allan Mere)	\$86.25	\$57.50
Website fees 2013-2022	-	\$484.38
Total Expenses	\$4,398.67	\$3,951.41
Total income	\$5,224.12	\$4,030.89
Less total expenses	(\$4,398.67)	(\$3,951.41)
Net surplus	\$825.45	\$79.48
ASSETS		
Cash in bank - current account	\$9,150.83	\$8,988.16
Cash in bank - Achiever Savings	\$2,053.09	\$2,039.35
Total Assets	\$11,203.92	\$11,027.51
LIABILITIES		
Printing costs	395.37	\$448.50
Postage costs	-	\$595.91
Total Liabilities	395.37	\$1,044.41
Total Assets	\$11,203.92	\$11,027.51
Less Total Liabilities	(\$395.37)	(\$1,044.41)
NET ASSETS	\$10,808.55	\$9,983.10
Represented by		
Retained earnings c/fwd from previous year	\$9,983.10	\$9,903.62
Profit for year	\$825.45	\$79.48
TOTAL FUNDS AS AT 31 DECEMBER	\$10,808.55	\$9,983.10

Regional Botanical Society News

■ Auckland Botanical Society

December Christmas picnic/field trip

At Shakespear Open Sanctuary, Whangaparaoa Peninsula, the day was started with a botanical walk, first checking out the most untouched remnant of bush in the park, Kowhai Glen. The taraire forest was deemed worthy, at this time of the year, of having a *Danhatchia* hunt undertaken in the hope that this elusive orchid could be growing there. None was found. A detour to check the *Korthalsella salicornioides* growing on manuka then led to the staff tea room where a barbecue and pot luck picnic was held.

February Field Trip

The dry summer ensured that even in the swamp on the Ian Wells Track, Waitakere Range, people managed to keep their footwear from getting wet. The high hills have species not usually seen at lower altitudes, such as *Quintinia serrata*, *Ixerba brexioides*, *Dicksonia fibrosa*, *Notogrammitis pseudociliata*, *Pseudowintera axillaris*, *Blechnum procerum* and *Hymenophyllum lyallii*. Much *Raukaua anomalus* and *Cyathea smithii* and a single young tree of *Phyllocladus totoa* held our interest, as did the numerous cave weta in an old manganese mine.

Forthcoming Activities

14 March Woodcocks Kawaka Reserve, Warkworth

Auckland Botanical Society, PO Box 26391, Epsom, Auckland 1344

President: Ewen Cameron **Secretary:** Vijay Soma aucklandbotanicalsociety@gmail.com

■ Rotorua Botanical Society

December - Lake Surprise

The trip was originally planned as an overnight stay at Mangaturuturu hut (Tongariro National Park) with a Lake Surprise visit on Saturday. The forecast for Sunday of gale force winds and rain showers meant we amended the plan with a day trip on Saturday to Lake Surprise, overnight back in Ohakune, and a Sunday walk down through the high level beech forest of the Blythe track (parallel to the Turoa ski field road).

Saturday's weather was beautiful, and we managed to get to Lake Surprise in time to avoid most (but not all!) of the runners on the round the mountain "Goat" run, which coincided with the day of our trip. Although early, a number of alpine species such as *Ourisia vulcanica* and *Kelleria dieffenbachii* were beginning to flower. A highlight of the wetter areas around Mangaturuturu and Lake Surprise were the sundews *Drosera arcturi* and *D. spatulata*.

The Blythe track on Sunday proved to be an interesting and botanically diverse (and gently downhill!) walk through an altitudinal vegetation sequence. *Peraxilla tetrapetala* was seen on mountain beech at several points and other species of interest were *Manoao colensoi* and lush patches of *Hymenophyllum malingii* growing on some of the larger kaikawaka.

An interesting weekend in a very beautiful part of the central North Island.

February - Te Rereatukahia

The overcast day put most people off but we ended up with two keen recruits in the party. The early part of the track to the creek, a mere 100 m, took us an hour as it was a diverse piece of young regenerating kauri forest with lots of interest for the learners. Common plants such as five-finger, pigeonwood, kamahi, silver fern and *Lycopodium deuterodensum* all needed explanation. After a tricky, slippery crossing of the creek we emerged into a small grove of large kauri that greatly impressed one who had only seen a depauperate plant in Stellenbosch before. The awe continued for much of the trip as we progressed through dense stands of regenerating kauri some nearly 2m in diameter.

In between, there were impressive puriri and numerous kohekohe in the canopy. The shrubs included frequent *Alseuosmia macrophylla*, the scent of the forest in spring. As always there was debate about the maire species present. There were obvious *Mida salicifolia* with broad shiny leaves, but there were also narrowed leaved plants of *Nestegis lanceolata* and *N. cunninghamii* as well as the *Mida*. Examination of leaf venation and thickness, and branchlet colour were required to distinguish them. Further on *Coprosma arborea* was spotted and later the very similar *C. spathulata*, distinguished by its shrubby habit and very flat thick leaves. As the ridge climb levelled off the kauri disappeared and tawa became dominant, especially as we approached our turn point of the North/South track junction. On our return, the dense stands of kauri still attracted awe. Also, an overhanging patch of bush lawyer seen on our upward route suddenly revealed its companion native passionfruit.

FUTURE EVENTS

March 7	Mt Tarawera
April 12	Waikite Wildlife Management Reserve and Waikaropa Bush
May 9	Lake Tarawera - Humphries Bay to the outlet
June 6	Matekerepu Historic Reserve and Waioeka River mouth dunes

President: Paul Cashmore (07) 348 4421 pcashmore@doc.govt.nz

Secretary: Elizabeth Miller (07) 343 5013 rotorua-botanicalsociety@gmail.com

Web Page: www.wildland.co.nz/botanical.htm

■ Nelson Botanical Society

Labour Weekend Camp, Matakaitaki.

Day 1: Jamieson Ridge

We woke to a beautiful morning with thick frost and walked up Jamieson Ridge on the western edge of Nelson Lakes National Park. We found *Peraxilla colensoi* on *Lophozonia menziesii*. We later split into three parties. One group found *Euphrasia petriei*. Another group had afternoon tea under the third *Alepis flavida* mistletoe of the day and found *Notogrammitis angustifolia* subsp. *nothofageti* and several filmy ferns including *Hymenophyllum bivalve*, *H. villosum*, *H. demissum*, *H. multifidum*, *H. atrovirens* and *H. peltatum*.

Day 2: Matakaitaki Lodge Forest

We entered the Matakaitaki Lodge forest and were soon tangled in the understorey of coprosmas, *Pseudowintera colorata* and *Neomyrtus pedunculata*. At ground level we found *Hymenophyllum atrovirens* again, along with colonies of *Chiloglottis cornuta* and *Nematoceras hypogaeum*, in flower. A beautiful bank of *Leptopteris superba* and what seemed to be a hybrid between *Podocarpus acutifolius* and *P. cunninghamii* led us to a morning-tea-log under another *Alepis flavida*. We skirted the lodge, and found a tiny bit of frost flat vegetation, which contained two plants of *Coprosma wallii* and red *Gonocarpus micranthus*. We had lunch on the margin of a lovely sphagnum bog, mainly *Sphagnum cristatum* and *S. falcatulum* with areas of *Empodisma minus* and semi-islands of *Dracophyllum palustre*. *Dracophyllum filifolium* grows with bog pine on a more solid island in the centre of the bog, as well as on the margins. *Drosera spatulata* and *D. arcturi* are common and we found *Gonocarpus aggregatus* as well as *Oreobolus strictus* and *Carex echinata*.

Day 3: Johnson's Creek Track, Matakaitaki West Bank Road, Murchison

We found lush, streamside forest, again under beech forest but this time it was black beech with a diverse mix of sub-canopy broadleaved species and sapling kahikatea. There were many plants of *Olearia arborescens* and a good colony of *Myosotis forsteri*. *Pterostylis irsoniana* proved photogenic with its stripes and black labellum tip. It was great habitat for *Blechnum colensoi* and we found *Hymenophyllum rarum* and *Viola filicaulis*.

November Field Trip: Anne Melhuish property, St Arnaud. - 16 November 2014.

A group of six arrived with the challenge to find species to add to the list. Anne led us along a muddy track through cutover beech forest and on the side of the track was some lush looking *Senecio minimus*, a *Thelymitra* species, lots of *Blechnum discolor*, the smaller *Blechnum penna-marina* and

Paesia scaberula. We followed into the low bush with good numbers of regenerating *Libocedrus bidwillii*, abundant *Neomyrtus pedunculata* and *Myrsine divaricata*, and several species of *Coprosma* including *C. dumosa*, *C. microcarpa*, *C. foetidissima* and *C. pseudocuneata*. The occasional *Elaeocarpus hookerianus* was also present. We were able to check the difference between *Podocarpus acutifolius* and *Podocarpus cunninghamii* and we found *Luzuriaga parviflora*, in flower and fruit. A commonly found *Hymenophyllum*, turned out to be *H. villosum* and we found *H. malingii* on a dead *Libocedrus* stump. Cathy later spotted the tiny *Oreostylidium subulatum* then further down the hill we spotted *Cyathea colensoi*. In a wetter area the tiny *Nematoceras hypogaeum* was found almost buried in the leaf litter. Also found were *Androstoma empetrifolia*, *Pentachondra pumila*, *Lobelia angulata* and *Viola filicaulis*. We were surprised to find a few more species including *Chiloglottis cornuta* and a *Pterostylis* which may be *P. graminea* but a little immature.

December Field Trip: Mt Robert, Nelson Lakes National Park, 21 December 2014.

One of the delights of the day was a pair of well-camouflaged *Gastrodia* stems in bud. Passing from red to mountain and then silver beech took us past several species of orchids including: *Aporostylis bifolia* and *Chiloglottis cornuta* in leaf, and *Nematoceras hypogaeum* in flower. On the upper half of the Pinchgut, was a species of *Thelymitra*, with unopened flower heads and *Prasophyllum colensoi*. Also in flower in the subalpine zone was *Stegostyla lyallii*. *Aciphylla aurea* and *A. monroi* were encountered in this zone. Although we were early for amassed alpine flowering, we did find in flower: *Celmisia gracilentia*, *C. sessiliflora*, *C. spectabilis*, *Craspedia uniflora*, *Geranium brevicaule*, *Hebe canterburiensis*, *H. hectorii* subsp. *coarctata*, *Leonohebe ciliata*, *Leptinella pyrethrifolia*, *Phyllachne colensoi*, *Pentachondra pumila*, *Ranunculus verticillatus*, *Raoulia grandiflora*, *R. bryoides* and *Rytidosperma setifolium* with its red-orange stamens. We even managed to see several plants of *Notothlaspi rosulatum*, with its rosette of white flowers and *Lignocarpa diversifolia* in bud. We encountered species such as: *Euphrasia monroi*, *Kelleria* sp. (perhaps *K. dieffenbachii*), *Celmisia laricifolia*, *C. discolor*, *Notogrammitis billardiarei*, more than one species of *Lagenophora* and *Hymenophyllum* (including *L. pumila*, *L. pinnatifida* and *H. sanguinolentum*), and *Pittosporum anomalum*. On the descent we noticed *Gaultheria macrostigma*.

December Camp Report: Cobb Valley, 12-14 December 2014.

A hot Friday saw 17 bot soccers winding up the Cobb Valley road to camp at the Cobb Houses in the Cobb Valley. On Saturday Peel Ridge beckoned and in the car-park we found the colourful form of *Gentianella patula* with its maroon-striped petals, and flowering plants of *Pimelea mesoa* subsp. *macra* which is confined to the Cobb Valley. Emerging from the treeline, we familiarised ourselves with *Hebe canterburiensis* and *Pittosporum anomalum*. *Aciphylla ferox* lined the track but this was an off-year for flowering. After a group photo amongst the *Chionochloa pallens*, *C. australis*, and *Hebe masoniae*, we headed down to Lake Peel. Unfortunately, there wasn't much of a floral display, one of the exceptions being *Ranunculus insignis* in startling yellow. The array of shrub daisies was conspicuous, comprising *Traversia baccharoides*, *Brachyglottis bidwillii*, *B. adamsii*, *Olearia nummulariifolia*, *O. colensoi* and *Ozothamnus vauvilliersii*. Groves of *Hoheria glabrata* studded the shrublands interspersed with *Hebe topiaria*, *H. albicans* and *Aristotelia fruticosa*. On the rocky outcrops we spotted *Pachycladon latisiliquum*, the infrequently encountered *Myosotis macrantha* and *M. drucei*. Crossing the lake outlet, we were rewarded with the rare *Hebe ochracea*, interspersed with *Hebe hectorii* subsp. *coarctata*. *Astelia*s made their presence known with four species around the eastern side of the lake - *Astelia nervosa*, *A. nivicola*, *A. petriei* and *A. linearis*. Eyebrights were also the focus of attention with - *Euphrasia laingii* and *E. townsonii* occupying the seepages - along with *Plantago udicola*. In the cracks of a rock we found *Cardamine* "calcicole". We made our way upstream discovering *Ourisia macrophylla* subsp. *lactea*, *O. caespitosa*, *O. simpsonii*, *Brachyglottis "crassa"*, *Geum leiospermum*, *Forstera mackayi*, *Anisotome pilifera*, *Schizeilema roughii* and *Notogrammitis patagonica*. We then traversed to a boulderfield and found *Hebe crenulata*, *Leonohebe ciliolata*, *Melicytus* "Blondin" and *Coprosma pseudociliata*, along with *Polystichum vestitum* and *Cystopteris tasmanica*. Some bluffs were draped with the glaucous *Dracophyllum pubescens* and *Helichrysum intermedium*. A recent landslide supported colonisers such as *Montia calycina*, *Epilobium "minutiflorum"* and *Anaphalioides bellidioides*.

On Sunday we set off to the old magnesite quarry. At the car park we successfully searched for *Pittosporum patulum*. *Pittosporum dallii* was along scrub edges of the old burn areas and along the road cutting. *Pseudopanax colensoi* s.s. had also colonised the road cuttings while *Chionochloa conspicua* lined the road margins and *Clematis forsteri* was in full flower. Towards the quarry the vegetation changed to reflect the mineral belt geology, with the appearance of Cobb mineral belt

inaka, *Dracophyllum ophioliticum*, along with kanuka, manuka, *Phyllocladus* aff. *alpinus*, *Leptecophylla juniperina* and *Gahnia procera*. The quarry floor and debris piles were studded with *Hebe albicans* and *Colobanthus* "serpentine". In the mountain beech forest fringing the quarry outcrop we were shown a fine example of the magnesite outcrops, all slowly dissolving in a similar manner to limestone due to its mainly magnesium carbonate chemistry. The one we saw was well overhung providing a very dry habitat in which *Blechnum fluviatile* and a fine leaved form of *Poa colensoi* were thriving. On the south side of the outcrop we encountered cushions of *Notothlaspi australe* well below its normal altitude, along with mineral belt snow tussock *Chionochloa defracta*, and mineral belt sedge *Carex devia*. The find of the day, *Asplenium cimmeriorum*, was discovered here lining a shady overhang. We made a beeline to two of the largest intact magnesite outcrops and were treated to small flowering populations of *Myosotis brockiei*, usually a calcicole. A traverse past bluffs in the forest brought us to the back of another magnesite outcrop under which we relocated *Myosotis chaffeyorum*. Also growing with *M. chaffeyorum* was the very rare and still unnamed *Cardamine* "magnesite", which is similar to, and possibly the same as the unnamed Red Hills bittercress.

FUTURE EVENTS

March 15	Otuwhero Wetland. Leader Helen Lindsay 03 528 4020
April 2-6	Easter Camp, D'Urville Island. Leader Chris Ecroyd 03 544 7038
April 19	Bridle Track, Duncan Bay. Leader Uta Purcell. 03 545 0280
April 20	AGM, Potluck dinner and talk, "Last Summer" by Shannel Courtney
May 17	Rameka Track, Canaan Downs. Leader Elaine Marshall 021 256 9073
May 18	Talk to be decided

President: Cathy Jones 03 546 9499. Flat 1/47A Washington Rd, Nelson 7010. cathy.jones@xtra.co.nz

Treasurer: Uta Purcell 03 545 0280. 60 Marybank Rd, Atawhai, Nelson. mupurcell@xtra.co.nz

■ Other Botanical Society Contacts

Waikato Botanical Society

President: Paula Reeves

Secretary: Kerry Jones

General contact: secretary@waikatobotsoc.org.nz

Website: <http://waikatobotsoc.org.nz>

Taranaki Botanical Society

Contacts: Barbara Hammonds 06 7597077; Email: barbara_ha@outlook.com

Janica Amore 06 7520830. Email: waiongona@clear.co.nz

Manawatu Botanical Society

Jill Rapson: Ecology Group, Institute of Natural Resources, Massey University, Palmerston North. Ph (06) 350 5799 Ext 7963; G.Rapson@massey.ac.nz

Wanganui Museum Botanical Group

President: Clive Higgin (06) 342 7857 clive.nicki@xtra.co.nz

Secretary: Robyn Ogle (06) 347 8547 robcol.ogle@xtra.co.nz

Wellington Botanical Society

President: Karen Palmer, katyp@xtra.co.nz

Secretary: Barbara Clark, 04 233 8202 bj_clark@xtra.co.nz <http://wellingtonbotsoc.org.nz/>

Wakatipu Botanical Group

Chairman: Neill Simpson (03) 442 2035

Secretary: Lyn Clendon (03) 442 3153

Canterbury Botanical Society

President: Jason Butt (03) 355 8869 PO Box 8212, Riccarton, Christchurch 8440

Secretary: Alice Shanks **Website:** www.canterburybotanicalsociety.org.nz

ANNOUNCEMENTS

■ **NZ Coprosma Key: a new app for identifying *Coprosma*.**

Landcare Research, media release.

Identifying plants is complex when there are dozens, hundreds and in some cases even thousands of species, many with similar features. But Landcare Research is making this easier. They recently developed a free app for smart phones and tablets to identify native coprosma plants. Native coprosmas are a common and diverse genus of trees, shrubs and ground-hugging plants.

The app, called the NZ Coprosma Key, allows users to identify their plant specimen by selecting from a series of features to narrow down the range of 53 possible species. These features include leaf size, branch colour, leaf hairs and many others. The app was adapted from a computer-based coprosma identification tool and is the first of more to come.

Landcare Research scientist David Glenny, the lead author of the app, said it was created to help identify plants during ecological survey work and would be of particular benefit to Department of Conservation staff. However, it would also be useful to students, researchers, and others in the New Zealand botanical community, he said.

"Although the app is easy to use, I don't regard it as a key for beginners as you actually have to know already that you've got a coprosma. New Zealand has a lot of plants that look quite similar to coprosma. So I created the key mainly for people doing survey work who already know the flora reasonably well but who need help with what's quite a difficult group," he said.

One benefit of the app is that unlike traditional methods of identifying plants it is fully portable. "It eliminates the need for those in a remote area to cut a sample of an unknown plant to later identify with a book or computer", Glenny said.

Another benefit is that the app is "self-contained" and does not require internet access or cellphone reception in the field.

"It's better than I imagined," Glenny said.

Many coprosmas are most easily identified when in fruit, which only occurs at certain times of the year. However, the app overcomes this challenge, he said.



“Every pre-existing key used fruit colour, which is quite diagnostic. If you have ripe fruit that’s fantastic but fruit is typically only available in autumn. Ecologists tell me that in places like the West Coast forest’s they never see ripe fruit no matter what month they visit. So part of the point of that original computer key was to provide an ID tool that didn’t just rely on fruit colour.”

Landcare Research scientist Murray Dawson led the development of the LucidMobile coprosma app. Dawson is also developing apps to identify New Zealand grasses, native orchids, flowering plants and weeds. The development of the grasses and native orchid apps are nearly completed, Dawson said. The flowering plants and weed apps are due out later this year.

“These apps are very easy to use and self-explanatory. They are powerful and able to accommodate hundreds of images,” he said.

The development of the apps has been funded by the Terrestrial and Freshwater Biodiversity



Information System (TFBIS) Programme. TFBIS supports the

Landcare Research scientists Murray Dawson, left, and David Glenny using the app to identify a coprosma.

conservation of New Zealand’s indigenous biodiversity by increasing awareness of and access to fundamental data and information about terrestrial and freshwater biota and biodiversity.

The NZ Coprosma Key can be downloaded from <http://www.landcareresearch.co.nz/resources/identification/plants/coprosma-key>, the Apple App Store or Android Google Play Store.

■ Fern treatments for eFloraNZ

Leon Perrie, Museum of New Zealand Te Papa Tongarewa, leon.perrie@tepapa.govt.nz

Electronic Flora of New Zealand treatments for several fern families are now available online. These have been authored by Pat Brownsey and Leon Perrie

The Polypodiaceae (excluding *Notogrammitis*), Lygodiaceae, Marattiaceae, Osmundaceae, and Schizaeaceae were published in 2014. The Equisetaceae, Loxsomataceae, Marsileaceae, Psilotaceae, Salviniaceae, and Dicksoniaceae are scheduled for publication in March 2015. Treatments for the Gleicheniaceae, Ophioglossaceae, Thelypteridaceae, Cyatheaceae, and Hymenophyllaceae are in preparation.

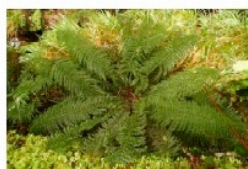
The published treatments can be accessed at: www.nzflora.info/publications.html

The authors welcome feedback, ideally supported by specimens (or otherwise with photographs uploaded to the website NatureWatch NZ – see article on citizen science projects).



FLORA OF NEW ZEALAND FERNS AND LYCOPHYTES

OSMUNDACEAE



P.J. BROWNSEY & L.R. PERRIE

Fascicle 4 – DECEMBER 2014



25–35 mm wide; the basal pair 50–120 mm long. Secondary pinnae oblong or narrowly elliptic, 14–28 mm long, 5–10 mm wide, sessile or adnate, divided most of the way to the midrib. Ultimate lamina segments linear, attenuate, flattened in plane of frond. Sporangia scattered on abaxial surfaces, confined to proximal part of primary and secondary pinnae.

Distribution: North Island: Northland, Auckland, Volcanic Plateau, Gisborne, Taranaki, Southern North Island.

South Island: Western Nelson, Sounds-Nelson, Marlborough, Westland, Canterbury, Otago, Southland, Fiordland, Chatham Islands, Stewart Island.

Altitudinal range: 10–950 m.

The species has a predominantly northern distribution. It is abundant in much of the North Island, especially in lowland and montane areas, from 10 to 950 m, but is uncommon in truly coastal regions, especially on the east coast and in Taranaki. In the South Island it is more common in lowland regions, but extends locally to 925 m in montane areas of inland Marlborough; it is absent from much of the high country.

Biostatus: Indigenous (Endemic).

Habitat: A terrestrial fern that occurs in lowland to montane areas, under kauri, podocarp, broadleaved and beech forest, especially on damp banks and along streams, but also on other valley sides and ridge tops. It frequently occurs with *L. superba*, but the latter is usually confined to damper sites and valley floors.

Recognition: *Leptopteris hymenophylloides* has very thin, membranous fronds, resembling filmy ferns and can be confused with them when very young. It is distinguished from *L. superba* by its longer stipe, triangular lamina, longer and broader pinnae, and by its ultimate laminal segments, which are flattened in the plane of the frond. The basal pinnae (50–120 mm long) are significantly longer than those in *L. superba* (1–20 mm long) and this character alone will usually distinguish the two species.

Cytology: *n* = 22 (Morton 1950; Brownlie 1958; Brownsey 1991).

Hybridisation: *Leptopteris hymenophylloides* and *L. superba* frequently occur together in wet, forested areas, and they hybridise readily. Hybrids (*Leptopteris wintermedialis*) show regular bivalent formation at meiosis and have spores of normal appearance, but there is no evidence for second-generation hybrids (Brownsey 1991).



Fig. 2. *Leptopteris hymenophylloides*: mature frond showing long basal pinnae and stipe.



Fig. 3. *Leptopteris hymenophylloides*: primary pinna showing deeply divided secondary pinnae, hairs on the underside of the pinna midrib, ultimate laminal segments lying in the plane of the frond, and scattered sporangia.



Fig. 1. *Leptopteris hymenophylloides* distribution map based on databased records at NI, OPH and WEL.

Botanical Societies on Facebook

Leon Perrie, Museum of New Zealand Te Papa Tongarewa, leon.perrie@tepapa.govt.nz

Some botanical societies are exploring social media as another means of engagement.

While the Wellington Botanical Society is not yet ready for official social media channels, some members are experimenting with a Facebook group whose goals align with the Society. As an “Open Group”, it provides a venue for users to discuss observations and identifications, and to share both local and national news. The Facebook group is called “Wild Plants of Wellington”: <https://www.facebook.com/groups/322939557873243>

Additionally, the Botanical Society of Otago and the New Zealand Plant Conservation Network both have their own official Facebook sites. Both are “Pages”, more for official communications, compared with “Groups” which offer richer (but riskier) interactivity.

Those with a systematic bent may be interested in the Facebook group of the Australasian Systematic Botany Society: <https://www.facebook.com/groups/434955569922530> With the name change to embrace both sides of the Tasman, this Society has increasing participation from New Zealand.

For an Australian example of a very successful social media venture by a botanical society, see the Facebook group for The Wildflower Society of Western Australia (Inc.): <https://www.facebook.com/groups/129636970391772> With over 1600 members, it is clearly offering a rich and rewarding experience.

Citizen Science fern and spider projects

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Te Papa is presently running two citizen science projects. If you upload a photo of a fern or spider to the NatureWatch NZ website, a Te Papa expert will help you with its identification. This is not only a

great way for you to extend your knowledge, but you will be helping Te Papa with its research, and your photo might be featured in the exhibition *DeCLASSIFIED! Nature's secrets revealed at Te Papa*.

All New Zealand ferns and lycophytes are welcome in the project that I am overseeing. But I am also interested in recording what people have in cultivation. Te Papa's Phil Sirvid is overseeing the spider project.

For instructions about participation, and more about the exhibition, see www.tepapa.govt.nz/declassified



NatureWatch covers much more than just spiders and ferns – in fact, all of life! It is a great way to record observations, and to seek help with identifications, in a manner that is useful and easily accessible for future scientific research. It is free to everyone. A log-in and password is required, but this provides for a richer, personalised experience: The NatureWatch website is: naturewatch.org.nz

Feel free to email me if you experience any difficulty.

NOTES AND REPORTS

■ Towards a Regional Threat Classification System for New Zealand

Jeremy Rolfe, Technical Adviser Flora, Department of Conservation, National Office, Wellington, jrolfe@doc.govt.nz, 04 496 1999

The Department of Conservation, working with regional councils, is developing a system to assess the conservation status of organisms at regional scales. Modelled on the New Zealand Threat Classification System (NZTCS; Townsend et al. 2008), the Regional Threat Classification System (RTCS) is being developed with regional councils using their boundaries for regional assessments.

Regional assessments of the conservation status of organisms will provide regional councils and DOC with valuable information to help plan biodiversity management, aid regional protection efforts, and will assist groups working on restoration projects to identify species of conservation concern that are appropriate for their projects. It is also anticipated that information gathered in the regional assessments will contribute to NZTCS assessments—in the past, people have been reluctant to contribute submissions to the NZTCS because 'they only know about their local situation'.

Historically, regional threatened plant lists have been developed in several parts of the country (e.g., Townsend et al. 1998, Forester & Townsend 2004, Stanley et al. 2005) but there was no consistency in the criteria used, or how 'regional' boundaries were defined. By developing an assessment process that is consistent with the NZTCS and using an agreed set of boundaries, it is hoped that regional threat classification will contribute to a more detailed understanding of the status of and trends affecting indigenous biodiversity throughout New Zealand. Where the NZTCS considers national trends, an RTCS can focus on local and regional trends affecting species.

Panels of regional experts from DOC, the regional councils and other organisations have tested the regional system on birds and reptiles of Greater Wellington and birds of Hawke's Bay. Regional assessments of vascular plants are now being trialled in Waikato and Greater Wellington.

The size of regional floras makes the assessment of plants substantially more complex than assessments of vertebrate groups—we estimate that regional vascular plant floras are c. 10× larger than their equivalent bird faunas. Confirming the regional flora to be assessed (including taxonomically indeterminate entities that have been assessed in the NZTCS) is a considerable task that requires herbarium records to be checked to validate the presence (historical or current) of taxa.

Assessment of taxa for their regional conservation status largely follows the process and criteria specified in the NZTCS (Townsend et al. 2008). The main departure from the NZTCS is that the population size thresholds for 'Regionally Not Threatened' taxa are modified from the NZTCS. This is to minimise the possibility that a taxon is assessed 'Regionally Threatened' or 'Regionally At Risk' in every region but "Not Threatened" nationally. These 'Regionally Not Threatened' thresholds vary according to the relative sizes of the regions.

An additional category, 'Regionally Extirpated' has been established to account for taxa that have been lost from a region but for which the possibility remains that they may in future be restored to that region, either naturally or by human agency.

The Regional Threat Classification System will also record several new 'qualifiers' in addition to the 18 in the NZTCS. These additional regional qualifiers are:

FR	Former Resident	Breeding population (existed for more than 50 years) extirpated from region but continues to arrive as a regional vagrant or migrant
IN	Introduced Native	NZ indigenous taxon that has been introduced to the region by human agency although not known to have naturally occurred there
RN	Restored Native	Taxon that had previously been extirpated from the region
TL	Type Locality	The type locality occurs in the region
NR	Natural Range limit	The known range (extending in any direction) of the taxon meets its natural limit in the region
HR	Historical Range limit	The inferred range (extending in any direction) of the taxon in pre-human times meets its natural limit in the region
NS	National Stronghold	More than 20% of the national population breeding or resident for more than half their life cycle in the region
RE	Regional Endemic	Known to breed only in the region

It is intended that regional assessments will be conducted 5-yearly by panels of regional experts in a manner similar to the NZTCS. Botanical societies can play a vital role in the regional assessments of plants by helping to validate regional vascular plant lists, contributing to the membership of regional assessment panels and submitting information about local plant populations.

After the regional vascular plant assessment trials have been completed, a Regional Threat Classification System manual will be prepared to guide the expert panels.

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BIOGRAPHY / BIBLIOGRAPHY

■ Biographical Sketch – David John Galloway (1942 – 2014)

Val Smith, 80 Mill Road, New Plymouth 4310.

David Galloway was born in Invercargill on 7 May 1942 and went to school there. His interest in lichens began around 1956 when he was a student at Southland Boys' High School. Retrieving the cricket ball from a bog during a weekend match he saw an interesting specimen that he later took to school to get identified. His chemistry teacher told him it was coral lichen, *Cladonia retipora*. The teacher was a son of lichenologist William Martin, and was doing the chemistry of the group for his father. David's interest was whetted, and he began collecting *Cladia* and *Cladonia* himself, under his teacher's supervision.

His biochemistry studies at Otago University, led to a MSc on limpids of New Zealand lichens, followed by a PhD. Contacts with Dr James Murray, an organic chemist at the university, and Professor Alan Mark of the botany department, coupled with his love of mountaineering, led to serious lichen collecting in the Otago high country. In the summer of 1962-63, following the tragic death of Jas Murray in a car accident, Professor Geoff Baylis arranged for David to help visiting lichenologist Peter James of the British Museum (Natural History) to curate the Murray lichen herbarium, and this moved David to consider a career in lichenology.

From assistant lecturer at Otago University, he went to DSIR's Applied Chemistry Division, Palmerston North, as a biochemist. Eventually, in 1972, after his leanings and potential were recognised, he was transferred to Botany Division to work on lichens. Director Eric Godley promptly sent him to the British Museum to become fully qualified, and there he met up with Peter James again. He focussed on the lichens of the southern hemisphere, especially Chile, and to repay his bond, worked on a New Zealand lichen flora, which was published in 1985. In 1974 he married his school sweetheart Patricia Payne, who had moved to England in 1967 to follow her vocation as an opera singer, and when Patricia sang in the great cultural centres of Europe, David continued his lichen work in nearby institutions.

In 1994, after 22 years in Britain, David returned with Patricia to Dunedin, and from 1995 to 2005 they lived in their cottage near Millers Flat in Central Otago, combining gardening and fishing with concerts, recitals and David's lichen-based contract projects. In 1996 he joined Landcare Research on a part-time basis to prepare a second edition and major revision of *Flora of New Zealand Lichens*, a massive task to which he devoted 100% of his time until its publication in two volumes in 2007. They then lived in Ohopo, Dunedin, where David worked in his study overlooking the garden, his general interest book on New Zealand lichenology from Banks and Solander to the present day, close to completion.

In 2007 friends and colleagues of David Galloway contributed 36 historical and lichenological papers to a magnum opus in his honour; the following year he was awarded the prestigious Acharius Medal for life-long and outstanding contributions in lichenology – only the second time it has been made to a southern hemisphere lichenologist. An honorary life president of the International Association for Lichenology, and with numerous letters after his name, David Galloway died in Dunedin after a short illness, on 6 December 2014, aged 72 years. Eighteen lichen species are named after him, including the New Zealand endemic *Cladonia gallowayi*, described by American lichen taxonomist Samuel Hammer in 2003.

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PUBLICATIONS

■ Publications Received

Canterbury Botanical Society February 2015 Upcoming meeting and fieldtrip, fieldtrip reports on QEII covenants, Glentunnel and summer camp Taparewa including a report on the hebes, an update to *Eucalyptus* in the Christchurch area.

Canterbury Botanical Society March 2015 Upcoming meeting and fieldtrip, meeting report on hard to identify plants, fieldtrip report on Lake Forsyth/Waiwera, Banks Peninsula, an update to *Eucalyptus* in the Christchurch area.

Wellington Botanical Society Newsletter December 2014 Upcoming meetings and fieldtrips, publications received, submissions made, trip reports for East Harbour regional park, Gibb's covenant, Eastbourne and Te Mārua workbee.

The New Zealand Orchid Journal February 2015 *Microtis papillosa*, status of *Pterostylis australis* agg. and associated species, the Hatch Medal 2014 – Gordon Sylvester, Carlos Lehnebach's orchid research update, Iwitahi Annual Orchid Weekend report, New Zealand indigenous flora seed bank.

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