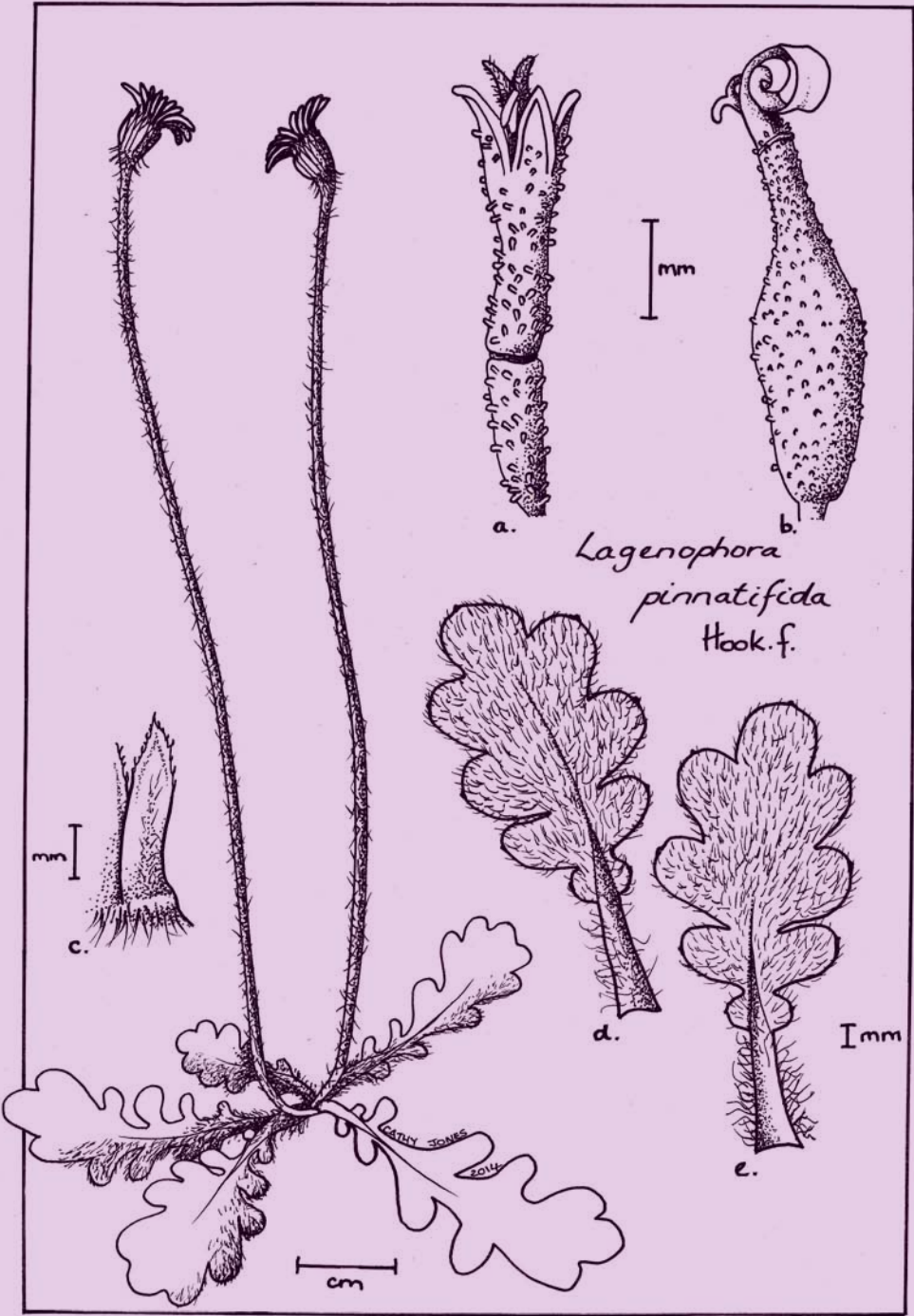


NEWSLETTER



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 2014 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2012 student subscription, available to full-time students, is \$12 (reduced to \$9 if paid by the due date on the subscription invoice).

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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 September 2014 issue is 25 August 2014.

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.

Cover Illustration.

Lagenophora pinnatifida drawn by Cathy Jones from a specimen collected on the Lake Chalice track, Richmond Forest Park on 16 February 2014. a.disc floret, b.ray floret, c.phyllary with thin dry margins, d.leaf abaxial surface, e.leaf adaxial surface.

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NEWS

Regional Botanical Society News

■ Auckland Botanical Society

March Meeting & AGM

At the AGM Ewen Cameron was re-elected as President of the Society and Mike Wilcox was elected a Life Member. Corin Gardiner spoke of his work on the form and function of the glandular hairs, bristles and appendages of the traps of the bladderworts in the genus, *Utricularia*.

March Field Trip

Because of the stormy weather this trip was delayed one week. The walk in the Kaukapakapa Estuary Scientific Reserve took members through gumland scrub and into regenerating kauri then diverse podocarp-broadleaf forest.

April Meeting

Peter de Lange visited Sardinia in 2013 with a Southern Hemisphere Visiting Professor scholarship. His talk covered the landscape, flora and fauna and conservation issues facing the island.

April Field Trip

Tricia Aspin, our Awhitu expert, led a walk on private land on Pollock Wharf Road. The dairy farm has good wetlands grading into saltmarsh. Interesting plants included *Korthalsella salicornioides*, *Coprosma tenuicaulis*, *Nertera scapanioides* and *Schoenoplectus pungens*

May Meeting

Mike Wilcox's talk on the Leguminosae covered the botanical features of the family, the New Zealand native legumes, legumes as economic plants and leguminous weeds in New Zealand.

May Field Trip

The numbers attending this walk around Lake Rototoa (Ototoa) on the South Kaipara Head were swelled by members of the local Landcare group. As we walked along the southern shoreline we became familiar with some of the minute turf plants along the shoreline, and with the many monocots that thrive in wetlands. Washed up on the water's edge were two lake pests – hornwort (*Ceratophyllum demersum*) and the bladderwort, *Utricularia gibba*.

Forthcoming Activities

21 June	Mataia Estuary, Glorit
2 July	TBC
19 July	Maungawhau/Government House rock forests
6 August	Brenda Osborne from Auckland Council biodiversity team
16 August	North Waikato/south Auckland

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

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

■ Rotorua Botanical Society

February 2 Umurua Scenic Reserve

The Umurua SR has been bisected by a new fence and was grazed until recently. The forest was typical of the Mamaku area with a canopy of tawa, kamahi, tawari, miro and mangeo and lots of tree ferns in the understorey. Several gullies were in rough grass and provided weeds to add to the 1984 species list. The ridges provided a good range of ferns, especially filmy ferns, including *Hymenophyllum scabrum* and *H. frankliniae*. Once across the old dividing fence *Alseuosmia macrophylla*, *Coprosma grandiflora*, fuchsia and wineberry were common. We traversed the forest to the Umurua Stream, which ran broad and shallow before dropping over a cliff as a spectacular waterfall. Near the top of the falls was *Astelia nervosa* and at the foot of the falls abundant *H. atrovirens* and *Blechnum nigrum* was an unexpected feature. On the return we noted *Pittosporum cornifolium* and *P. kirkii* in a large kahikatea.

March 8 Mt Tarawera

This combined Rotorua Bot. Soc. and Forest and Bird trip climbed to the crater rim of Mt Tarawera in 4WD vehicles. The track initially passed through young pines, then kanuka and kamahi forest. This lowered in height eventually to bare scoria at the summit. After a special blessing we ascended the sacred Wahanga Dome. The main vegetation at the summit was *Pimelea prostrata*, and *Raoulia albosericea* and clumps of lichen. We passed several black-backed gull nesting sites where there were swards of grass and a variety of weeds. We headed to the northern edge near where kamahi and other species formed a continuous shrubland. Here pine seedlings arising amongst the debris of trees that had been felled about 10 years earlier covered the slopes. We spent a few hours pulling pine seedlings. In the gullies were patches of *Dracophyllum subulatum* or kanuka shrubland. About 80 spp. were recorded, perhaps half those previously recorded from the Dome. Nevertheless there were a few additions of weeds that seemed to be recent arrivals.

April 6 Mt Tawhiuau

The Tawhiuau track crosses the Mangamate stream, traverses a flat terrace then abruptly heads steeply upwards. At the base, the vegetation is tall kanuka. It then crosses a dense tawa forest gully with the odd titoki or pukatea and one small clump of supplejack. After crossing a stream it ascends an open ridge with *Echinopogon ovatus* in fruit beneath rewarewa and low kanuka. The gullies on either side were in typical tawa forest changing to red beech forest with a prominent understorey of tawari at about 700m. Here we first saw podocarps, as saplings. In quick succession we saw matai, miro, rimu and toatoa. The last was evident as canopy trees 30cm or more in diameter. Near the summit was *Hymenophyllum pulcherimum*, uncommon in the district, and Prince of Wales feathers.

May 11 Lake Tarawera Walkway

A new walkway from Tarawera Landing to Te Rata Bay opened this summer. Fourteen of us were ferried from the Landing to Hot Water Beach for the 15km return walk. Along the foot of the cliffs we found the thermal *Christella dentata*. The track initially went through tall kanuka (which was dominant for much of our route), resulting from re-colonisation following the 1886 Tarawera eruption. Sheltered very deep, narrow gullies had tree ferns, especially mamaku, taller more diverse vegetation and areas of remnant pohutukawa forest. For the first two hours the track climbed steadily with a range of ferns, especially filmy ferns, and shrubs. Highlights included *Hypolepis lactea*, *Gaultheria oppositifolia*, *Piper excelsum* and *Drymoanthus adversus* on mingimingi. We descended to a large outwash flat of tall kanuka with an understorey of mingimingi and a dense moss carpet. The next rise cut off Moura Pt peninsula; on the ridge *Carex virgata* was unexpectedly common. On the descent, *Hymenophyllum pulcherrimum* was noted along with *H. rarum*, *H. sanguinolentum* and *H. dilatatum*. After Hawaiki Bay weeds became more common, including *Lonicera japonica*, *Clematis vitalba*, Montpellier broom, *Prunus campanulata*, *Cotoneaster glaucophyllus*, wilding radiata and corsican pine.

FUTURE EVENTS

June 14 Wairere Falls
July 6 Lindemans Rd
August 2 Maketu Spit

President: Paul Cashmore (07) 348 4421

pcashmore@doc.govt.nz

Secretary: Elizabeth Miller (07) 343 5013

rotoruasbotanicalsociety@gmail.com

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

■ Taranaki Botany Group

We would be delighted to welcome any visiting botanists, so please get in touch if you want to join us. Leaders are the co-convenors of the group, contact details at the end.

Correction to a trip report in the previous issue: 19 January 2014 NZNFRT Omoana Bush. The published report said 'We failed to reach the NZNFRT property' but in fact, what we failed to reach was the mature forest. We were on the property the whole of our walk.

FUTURE EVENTS

15 June Omata Bush KNE. A 10ha piece of lowland bush to be explored.
20 July Upper Huatoki Walkway. Treasures in this patch of mature forest within the NPDC urban area include a giant rimu and epiphytic shrubs like *Brachyglottis kirkii*.

24 August Plant identification session.

Contacts: Barbara Hammonds 06 7597077; Email: barbara_h@xtra.co.nz
Janica Amooore 06 7520830. Email: waiongona@clear.co.nz

■ **Wanganui Museum Botanical Group**

FUTURE EVENTS

1 July	Talk by Lyneke Onderwater on Mayor Island botany, Bay of Plenty.
5 August	AGM and members contribution
31 August or 1 September	Kaiwi orchid hunting. Contact Kevin Luff.
2 September	Talk by Dr Carlos Lehnebach on his native orchid research.

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**

January 18-27: Te Urewera National Park; Whirinaki Forest Park

Thirty four of us were based firstly, at Camp Kaitawa, followed by three nights at the Whirinaki Recreation Camp.

Day 1 - Panekire Bluff. The track began just above Lake Waikaremoana (582m) with scruffy modified vegetation, but soon we were into forest with mature beech and a mix of rimu, tōtara and miro. New to Wellingtonians were *Ixerba brexioides* and *Quintinia serrata*. Some areas had a limited understorey, the result of deer browsing. We saw a large bunch of *Peraxilla colensoi*, in full bloom, without the protection of the usual aluminium bands. The track ascended steadily to Panekire Bluff. Highlights included *Celmisia spectabilis* in full bloom, *Mida salicifolia*, *Microsorium novae-zealandiae*, with its uniform, finer, frond than *M. pustulatum*, little “alpine gardens” around Bald Knob, *Myosotis venosa*, *Oxalis magellanica* and *Viola filicaulis*, all with white flowers, and flowering *Carmichaelia* — pinky-purple, over the edge from Bald Knob. Other features were Prince of Wales feathers’ (*Leptopteris superba*) and mountain cabbage tree/tōi (*Cordyline indivisa*).

Day 2 - Lake Waikareiti & Puna Hokoi. It was a slow botanising walk from the Aniwaniwa Bridge to Lake Waikareiti, with many going on to Puna Hokoi wetland. Leaving the road at Aniwaniwa, you step into a mixed podocarp/broad-leaved forest. Red beech, silver beech, rimu and *Ixerba brexioides*, form the canopy, with some kāmahī. The understory is dominated by *Pseudowintera axillaris* and the unpalatable ferns *Blechnum discolor*, and *B. novae-zealandiae*. There were occasional large patē, *Pseudopanax arboreus*, koromiko, makomako, tree fuchsia, kawakawa and tarata. Other features included a scattering of flowering *Jovellana repens*, the change from *Leptopteris hymenophylloides* through hybrids to pure Prince of Wales’ fern (*L. superba*) as we climbed, and the mistletoe *Peraxilla colensoi*. On a bank, a white bell flower of *Luzuriaga parviflora*, and then at the lake’s side, straggling *Dracophyllum latifolium*, some with pyramid inflorescences. Along the lake edge we walked through red beech, passing large neinei (*D. latifolium*), kidney fern and *Hymenophyllum demissum*. In the evening we had a talk from Jenni Moses describing the project she was leading to record and practise Tūhoe traditional medicine— rongoā.

Day 3 - Waipai Swamp. There was extensive deer-pugging in the swamp, and evidence of possum browse. Along the track we saw silver beech, *Blechnum discolor*, *B. fluviatile*, and *B. novae-zealandiae*, *Histiopteris incisa*, *Leptopteris superba* and *L. hymenophylloides*. Plants of note included *Mida salicifolia*, *Thelymitra cyanea* and the sundews *Drosera binata* and *D. pygmaea*. We also saw the orchids *Chiloglottis cornuta* and *Corybas macranthus*, the shrub *Neomyrtus pedunculata* in flower, pink pine, a bed of sphagnum moss, the heath *Androstoma empetrifolia*, kahikatea, the rush *Empodisma minus* covering large areas, and pōkaka.

Day 4 - Lake Kiriopukae and Dry Lakes The track to the lakes is among second-growth forest with lacebark, rewarewa, kānuka, mānuka and *Sophora tetraptera*). At the lake, several *Coprosma rugosa* supported many *Ileostylus micranthus* mistletoes. We botanised the dry lake-beds and saw the tiny blue-flowered *Lobelia carens* and *L. perpusilla*, *Gonocarpus micranthus* and *Potentilla anserinoides*. Also botanised that day were the Kaitawa Walk in the Tuai Conservation Area, and Onepoto Caves.

Day 5 - Ngamoko Range, including Tawa Track loop. The Ngamoko Track climbs through dense forest to the Ngamoko Range summit, 1099m. Not far from the start, we detoured along the Tawa Track Loop where there were rimu to c. 40m plus, including a twin-trunked specimen, tawa to c. 25m, two northern rātā, d.b.h. 2m and 1.4m, leaning against each other, and a rimu wrapped in the girdling roots of a northern rātā, their combined d.b.h. c. 3.5m. The largest tree we saw, near the Ngamoko Track, was a 32m, northern rātā, estimated to be 800–1000 years old. We added numerous species to the plant list, including Hall's tōtara, mataī, māhoe, black maire, kaikōmako, quintinia, *Dracophyllum latifolium*, *Dicksonia fibrosa* and *D. lanata*, *Chiloglottis cornuta*, *Uncinia clavata*, *Astelia trinerva* and *Collospermum hastatum*. We recorded browse on the dracophyllum, *Coprosma tenuifolia* and *A. solandri*. En route to a high row of sandstone bluffs we found a single specimen of an unidentified *Myosotis* sp. On finding *Helichrysum lanceolatum*, we noted its unhelpful name with its round/oval leaves. We found an *Ophioglossum* with a fertile stalk about 8 cm tall. Later in the week, at Arohaki Lagoon, we became familiar with *O. coriaceum*, but those plants were less than 4cm tall.

Day 6 – Old Māori Trail The track begins on SH38, then runs up the gently sloping valley of Awāwaroa Stream. The first native plant in flower was the parasitic *Euphrasia cuneata*, among weedy, young forest with ivy, montbretia, brier rose. Despite deer prints, and browse on *Coprosma tenuifolia* and *Griselinia littoralis*, some native species are regenerating. *Metrosideros colensoi* was a common climber on small trees. Huge mataī are producing many seedlings. Large rimu, tōtara and black maire were scattered emergents. At one point we noted a sward of *Plantago raoulii*.

Day 8 – Arohaki Lagoon It was a pleasant 2km walk through *Beilschmiedia tawa* forest with skirted *Dicksonia fibrosa*. Then the forest changed to kahikatea, and there was a large sea of fairy grass (*Lachnagrostis elata*), with small islands of *Juncus*. Highlights here included hedgehog grass, *Schoenus maschalinus*, *Lobelia carens*, *Gratiola sexdentata*, *Eleocharis gracilis*, *Hypericum minutiflorum* and *Ophioglossum*. There were at least two from the genus *Carex*: *C. virgata* and *C. maorica*. *Coprosma rotundifolia* was towards the edge next to *Neomyrtus pedunculata*, as was *Rubus schmidelioides*. Towards the edge was *Dicksonia squarrosa*, *Myrsine australis* and low down were *Blechnum fluviatile* and *Leptopteris hymenophylloides*. On the return was *Streblus heterophyllus*.

Day 9 – Te Whaiti Nui a Toi Canyon This walk led through towering tawa, rimu, mataī and tōtara to a bridge over the Whirinaki River. Here the species list was enriched with numerous plants, both native and exotic. **Fort Road.** The track through this forest of very tall podocarps and tawa, with tree-fern understorey, is the heart of the Whirinaki Ecological Management Zone, set up after the 1979 controversy about the future of Whirinaki Forest. The site is subject to intensive pest animal and weed control. Despite this, there was still possum browse on some of the abundant seedlings of *Fuchsia excorticata* and *Coprosma tenuifolia*. We were struck by the *Dicksonia fibrosa* with trunks up to 50cm d.b.h. A highlight was an H-shaped rimu, where a branch of an old rimu had rubbed against the bark of a younger rimu, wearing away its bark, so water and nutrient-carrying tissues of the two trees connected and grew together. This process, called “inosculation”, is a form of grafting.

FUTURE EVENTS

June 16	Talk by Julie Deslippe (VUW): Plant-mycorrhizal interactions.
July 5	Field trip to Haywards Scenic Reserve. Sunita Singh 387 9955 / 027 405 2987.
July 21	Panel discussion - Eco-sourcing of plants: what, why, where and how.
August 2	Field trip to Colonial Knob Scenic Reserve. Leon Perrie, 381 7261
August 18	AGM and talk by John Barkla (DOC): The special plants and places of Otago.
September 6	Field trip East Harbour Regional Park. Mick Parsons 473 1142

President: Richard Herbert. 04 2326828 herbert.r@xtra.co.nz

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

■ Nelson Botanical Society

February Field Trip: Lake Chalice, Richmond Forest Park

We had a fine day for our walk from Patriarch Ridge to Lake Chalice and found several plants of interest including *Aciphylla ferox* which is at its eastern boundary, replaced by *A. aurea* further east. On the track margins were many *Hebe brachysiphon* in stunning full bloom and a few *Olearia*

cymbifolia in flower. We found one gangly specimen of the “Nationally Endangered” *Pittosporum patulum* beside the track and *Clematis petriei* classified as “At Risk: Naturally Uncommon”. Other plants that caught our eye were *Lagenophora cuneata*, *L. strangulata* and *L. pinnatifida*. Around the lake margin we were rewarded with *Rorippa palustris* and good numbers of *Centipeda aotearoana*.

Anniversary Weekend Camp: Waima Valley, South Marlborough

Day 1 - Alpines on Altimarlock, Black Birch Range We drove in 4WD vehicles to Altimarlock on the Black Birch Range and saw *Brachyglottis monroi* with magnificent yellow flowers beside the track, *Celmisia spectabilis* in full flower with a spattering of *C. insignis*, classified as “At Risk: Naturally Uncommon”. Close to the ground were *Raoulia grandiflora*, *R. subsericea* and *R. bryoides*. Also seen in flower was *Celmisia sessiliflora* and mounds of the vegetable sheep *Haastia pulvinaris* with its golden flowers, *Gentianella bellidifolia* with its big white flowers and the taller *G. corymbifera*. We were pleased to find a few *Myosotis drucei* in flower and *M. australis* “white” with spent flower heads.

Day 2: Sawcut Gorge, Isolated Hill Scenic Reserve Our group braved the multiple river crossings to reach Sawcut Gorge on Isolation Creek. On the way we found large numbers of the pink broom, *Carmichaelia glabrescens*, *Geranium potentilloides*, *Asplenium lyallii* and several species on the national threat list including *Wahlenbergia matthewsii*, *Parahebe martinii*, *Heliohebe hulkeana* subsp. *evestita*, *Pseudopanax ferox*, *Pleurosorus rutifolius* and small populations of both *Anthosachne multiflora*, (a lovely grey-green grass) and *Connorochloa tenuis* another threatened grass with gracefully trailing stems. We also found a few isolated plants of *Senecio* “South Marlborough”, a limestone endemic, which has only been found in this area. *Carmichaelia astonii* (Nationally Vulnerable) was on a limestone rubble slope as well as *Gentianella astonii* subsp. *astonii* (Naturally Uncommon) and another limestone grass, *Festuca multinodis*.

Day 3: Woodside Gorge The final day of this camp saw members wading in the waters of Woodside Creek to seek out the K–Pg Boundary (**K** denotes the Cretaceous geological period while **Pg** is the Paleogene era). *Pachystegia insignis* and *Celmisia monroi* were abundant together with *Wahlenbergia matthewsii*, *Heliohebe hulkeana* subsp. *evestita* and *Linum monogynum*. A large *Hoheria angustifolia* was covered in *Passiflora tetrandra* and in a number of places we found *Parsonsia capsularis*. The shrub *Helichrysum lanceolatum* was present in small quantities and *Lobelia angulata* was along a shaded curve in the riverbank with *Adiantum cunninghamii*, *Pneumatopteris pennigera* and *Blechnum triangularifolium*. Nearby we found *Hebe parviflora* var. *arborea*, *Rubus squarrosus*, *Clematis afoliata* and *Melicytus* “Waipapa”. On slopes behind the paddock, *Myoporum laetum*, *Cordylina australis*, *Pennantia corymbosa* and *Hoheria angustifolia* were flourishing.

April Evening Meeting and AGM: “A Visit to Alaska”, Rebecca Bowater

Rebecca shared an amazing photographic journey through the Alaskan Fiords showing us the diverse flora and fauna of this pristine landscape. We viewed whales, seals, otters, moose, bald eagles, kittiwakes and loons in their natural habitat. The native plants display more colour than we see in New Zealand as seen in photos of pink *Loiseleuria procumbens*, *Dryas octopetala*, *Pedicularis lanata* and blue-mauve flowers on *Oxytropis*. Other species included arnica daisies, geraniums, *Ledum groenlandicum*, clumps of pink *Silene* and tall epilobiums.

Easter Camp: Mistletoe Bay, Queen Charlotte Sound.

Day 1: Peninsula Loop Track We set off just above the coastline and climbed to the spine of the peninsula. Time was spent learning differences between species which superficially look the same: *Tmesipteris elongata*, with sori parallel with the leaf edge and *Tmesipteris tannensis* with sori turned over to look slightly ‘V’ shaped, *Blechnum discolor* and *B. chambersii*, *B. filiforme* and *Doodia australis*, *Coprosma lucida* and *C. robusta*. We also saw *Pterostylis alobula* and *Acianthus sinclairii*.

Day 2, April 20: James Vogel Walk Six of us did the Vogel Walk through mature forest with magnificent trees including tawa, karaka, matai, pukatea and kahikatea. One matai had massive *Griselinia lucida* roots down its trunk and *Metrosideros diffusa* vines growing up. We found a number of filmy ferns including *Hymenophyllum demissum* and *H. sanguinolentum* which had sori shaped, respectively, like a pair of blackberries and like tiny sputniks.

Day 3, April 21: Cullen Point Loop Walk We drove to a circular walk on Cullen Point, not far from Havelock and were lucky to see *Pterostylis alobula*, *Acianthus sinclairii*, and *Orthoceras novae-zeelandiae* in flower. Further along we came across a large hard beech which had covered the track

deeply in seed. There were many *Cordyline banksii* and *Libertia mooreae* was of interest. The find of the day was *Botrychium australe*, classified as "At Risk: Naturally Uncommon".

FUTURE EVENTS

June 15 Pelorus Fungal Foray: Pam McConnell
June 16 Talk by Rebecca Bowater "Flying, Fungi and Flora"
July 20 Nature Walk, Tin Line Bay, Abel Tasman National Park: Beryce Vincenzi 03 528 4549
July 21 Talk by Carlos Lehnebach, Te Papa, on orchids, subject to be decided.
August 17 McKee Reserve, Ruby Bay: Don Pittham 545 1985
August 18 Talk by Chris Ecroyd "Flora of NW Victoria, Australia"

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>

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

Canterbury Botanical Society

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

Secretary: Alice Shanks

Website: www.canterburybotanicalsociety.org.nz

Wakatipu Botanical Group

Chairman: Neill Simpson (03) 442 2035

Secretary: Lyn Clendon (03) 442 3153

Botanical Society of Otago

Chairman: David Lyttle djlyttle@ihug.co.nz www.otago.ac.nz/botany/bsol/

Secretary: Allison Knight, P O Box 6214, Dunedin North. bsol@otago.ac.nz

NOTES AND REPORTS

■ Seen but unseen - rediscovering *Simplicia laxa* in the southern North Island

P.J. de Lange, Principal Science Advisor, Science & Capability, Department of Conservation, Private Bag 68908, Newton, Auckland 1145, pdelange@doc.govt.nz; **J.R. Rolfe**, Technical Advisor Flora, Science & Capability, Department of Conservation, PO Box 10420, Wellington 6143, jrolfe@doc.govt.nz; **T. Silbery**, Department of Conservation, PO Box 191 Masterton 5810, tsilbery@doc.govt.nz

In 1880 Thomas Kirk (Kirk 1897) discovered a grass growing somewhere in the vicinity of the 'Dry River Station, Ruamahanga' (Eastern Wairarapa, North Island). This grass, with the benefit of better material collected by Donald Petrie from Waikouaiti, on the north-eastern Otago Coastline, and from Deep Stream in the Otago hinterland, Kirk eventually described as a new endemic genus, *Simplicia*, and the species he called "*laxa*" (Kirk 1897). The meaning of the epithet Kirk didn't explain but one assumes he chose it in allusion to the lax, sprawling, open growth habit typical of the species, for he notes that the grass has 'weak' and 'flaccid' culms.

The genus and species remained pretty much an enigma until 63 years later when it's status was first revisited by Zotov (1943) who added a further species to it, initially as a variety of *S. laxa* (Zotov 1943), and then later as a species – *S. buchananii* (Zotov 1971) – based on a plant that had initially

been described as *Poa* (*P. uniflora*) by Buchanan (Buchanan 1880). For his 1971 paper, Zotov had several 'modern' collections of *S. b Buchananii* to work from but for *S. laxa* he relied largely on live material that had been collected from Castle Rock in the Old Man Range in 1969, supplemented with observations made from the original Kirk and Petrie material.

It was not until 1990 that *S. laxa* was seen again, this time by Brian Molloy who was searching for basicolous plants on the limestone outcrops near Ngapara, North Otago. Molloy found *S. laxa* growing in a few small roadside limestone rock overhangs, and that find, with support from the Department of Conservation prompted a study of *S. laxa* by Peter Johnson (Johnson 1995), which helped summarise what was then known about the ecology of the species, its field recognition and conservation management. Amongst the many findings, it was understandably concluded that the species was tied to schist and limestone rock outcrops where it grew in overhangs and shady niches.

Because both species of *Simplicia* were evidently extremely uncommon, they were also among the first indigenous grasses to be listed as 'Rare and Endangered' (Given 1976). Since then, *S. laxa* has been listed under the various threat classification systems as 'Insufficiently Known', 'Endangered', 'Nationally Endangered', and currently as 'Nationally Critical' (Given 1981; Williams & Given 1981, Wilson & Given 1989; Given 1990; Cameron et al. 1993, 1995; de Lange et al. 1999, 2004, 2009, 2013). *S. b Buchananii* has fared little better with listings ranging from 'Insufficiently Known', 'Local' and 'Range Restricted' to the current listing of 'Nationally Critical' (Given 1981, 1990; Cameron et al. 1993, 1995; de Lange et al. 1999, 2004, 2009, 2013).

At the time when Johnson did his field work, *S. laxa* appeared to be extinct in the North Island, and seemingly was confined to a handful of sites in Otago. Then, in 2005 Colin Ogle made a remarkable discovery. A chance find of an enigmatic tuft of grass growing in a roadside forest remnant near Mangaweka, followed by some remarkable persistence in trying to work out its identity resulted in the recognition of *S. laxa* at four sites around Mangaweka and Taihape (Ogle 2010). At the time of the finds there was some debate as to which species Ogle's *Simplicia* belonged. In 2008, as part of a team trying to resolve that issue, one of us (PdL) collected material from these populations, which, together with South Island samples of *S. laxa* and *S. b Buchananii*, were subjected to phylogenetic investigations using AFLP DNA fingerprinting and nrDNA ITS data (Smitsen et al. 2011). That study concluded that, for now at least, Mangaweka and Taihape plants were better placed in *S. laxa*.

Prior to Ogle's 2005 discovery, surveys for North Island populations of *Simplicia laxa* had been undertaken in Wairarapa, most notably by the late A.P. (Tony) Druce who had, understandably, searched much of the Dry River catchment (where Kirk stated he had got his original specimens). Based on the information then available about the habitat of *S. laxa* in Otago, Druce targeted limestone gorges, overhangs and cave entrances. Others had tried too, without success. Ogle's 2005 find now suggested the reason for the failure; all these people had been looking in the wrong places.

Ogle (2010) was the first to suggest that *S. laxa* was really a forest species, rather than, as had been believed, a plant of rock outcrops and overhangs (Given 1981; Johnson 1995). He felt that surveys of alluvial forest remnants dominated by matai (*Prumnopitys taxifolia*), kowhai (*Sophora* spp.) and titoki (*Alectryon excelsus* subsp. *excelsus*) might be more rewarding. Further, it was not just any remnant that would suffice, the best chances it was felt would be those that were subjected to sheep and/or



Fig. 1. Peter de Lange (left) and Toby McDonald (right) inspect the first *Simplicia laxa* site found near the Wainuioru River. Note the sparse understorey and light ground cover.

cattle browsing, and sporting a ground cover containing such herbs and grasses as *Hydrocotyle elongata*, *Oxalis exilis*, *Poa imbecilla* and *P. matthewsii*. Ecological data summarised by Ogle (2010) also suggested that a survey of suitable forest habitat in Wairarapa might result in its rediscovery there. In 2014 that suggestion finally came to fruition when DOC commissioned a survey of Wairarapa sites for *S. laxa*.



Fig. 2. The cattle and sheep browsed interior of an eastern Wairarapa forest remnant near Tinui. The grass dominating the foreground is an almost pure sward of *Simplicia laxa*.

In late February 2014, we surveyed three forest remnants fitting the profile described by Ogle (2010), and in two of these remnants we found four populations of *S. laxa* (Fig. 1). This little grass was finally rediscovered 134 years after Kirk last collected it! We don't doubt either that it had been seen in these areas by other botanists; all were remnants that had been thoroughly investigated previously (including on occasion at least one or more of our *Simplicia* survey party). We believe that *Simplicia* would have been seen there for sure, but due to its cryptic nature it had been mistaken for a range of 'look-a-likes', including the superficially similar (when sterile) *Echinopogon ovatus* and *Microlaena stipoides*, and (when fertile) *Poa imbecilla* and *P. matthewsii*. It was only with the benefit of Colin Ogle's 2005 discovery, his subsequent publication (Ogle 2010) and the participation by one of us (PdL) in the collection of plants from the Mangaweka – Taihape area for the phylogenetic study (Smitsen et al. 2011) that we believe that our 2014 survey was successful.

Small populations of *Simplicia* were located in two areas, both on private land, one bordering the Wainuioru River and another near the road between Masterton and Tinui. The grass occupied very specific microhabitats within the forest remnants investigated, growing in semi-shaded conditions in places with minimal understorey (Fig. 2). All populations seen thrived in locations that were subjected to light year-round cattle and sheep browsing; *Simplicia* was notably either scarce or absent

from adjacent forest that had been fenced to exclude these animals where the subsequent growth of taller grasses, herbs, saplings, and general thickening up of the understorey and canopy, we believe, resulted in the decline and/or local extinction of *Simplicia*.

These findings present somewhat of a conservation management dilemma for, in the long-term, cattle and sheep will eventually open up the forest remnants to such an extent that the ground cover that *Simplicia* favours will be replaced with other, more aggressive, light demanding grasses and weeds. On the other hand, fencing to exclude farm stock will also result in the loss of *Simplicia*, probably more quickly than if the current browsing regimes employed by eastern Wairarapa farmers are left intact. For now, we have no alternative management answers to the *status quo*.

More significantly though, the rediscovery provides us with a further opportunity to revisit the taxonomic status of the North Island populations of *S. laxa*. Johnson (1995) was the first to illustrate and discuss differences within South Island *S. laxa* populations, noting that these differences may warrant further investigation. Interestingly, Kirk (1897) had also noted that 'the Ruamahanga specimens are much weaker, and have narrower leaves than those from Otago, but there is no other difference', which is all the more remarkable considering he had only a handful of specimens from three locations (one North Island, two South Island). Whatever Kirk's musings, Johnson (1995) was correct, and Smitsen et al. (2011) further demonstrated that there was a genetic structure to the variation observed by Johnson (1995) but they refrained from making taxonomic changes to reflect those findings because morphologically these differences needed further careful study. They also felt that such a study needed better DNA sampling of plants from the Ngapara area of North Otago and, ideally, ones from the Wairarapa (if they might be rediscovered). Now that *S. laxa* has been rediscovered in eastern Wairarapa, we believe it worth again revisiting the taxonomy of this species.

In the interim, the eastern Wairarapa plants are morphologically similar to those seen at Mangaweka and Taihape. In particular they have the same, feeble growth habit noted by Kirk (1897), smaller, sparingly branched inflorescences, glabrate leaves and leaf-sheaths, and sparsely prickly-toothed lemma (Fig. 3A,B,C). Also, like Mangaweka and Taihape plants, eastern Wairarapa *Simplicia* seems to only rarely produce adventitious roots on the branch nodes, something Honeycomb Cave and Otago plants often do. However, as Smissen et al. (2011) note, these differences are not as clear-cut as implied here, for the type material of *S. laxa* from Waikouaiti, which seems to be a gathering of several individuals, comprises 'glabrate' and 'hairy' plants. This variation suggests that in this area, possibly two races co-existed, or maybe during the mounting of Kirk's herbarium – which had been loose-leaf, with specimens stored unmounted in paper, and whose mounting happened many years after his death – North Island and South Island plants had been accidentally mixed. We just don't know, and sadly, so far no one has rediscovered *Simplicia* at Waikouaiti to help resolve the issue.

In the interim, the eastern Wairarapa find is still cause for celebration; it allows for further taxonomic investigation, it adds to our knowledge of the species, it confirms its remarkable persistence in a seriously fragmented, modified landscape, and it adds to our conservation understanding of this species. However, the find made 134 years after Kirk last collected it, also highlights the incongruity of conservation perceptions and the value humans put on them. After all we found a grass, and as grasses go, a fairly non-descript one at that! Our discovery, shared by local farmer Toby McDonald, in a quiet riverine setting was nicely understated (Fig. 1). "Well", said one of us, "perhaps we should celebrate with a beer this evening". We doubt the New Zealand media would see our achievement as noteworthy, nor the general populace. However, we do like to think that the ghosts of those who had looked before appreciated our efforts. To the select few of the botanical fraternity still with us, and who had also tried their luck in the Wairarapa our find was enthusiastically acknowledged by heart-felt emails. Our find was also nicely summed up by local Department of Conservation staff who, when shown a specimen, were suitably underwhelmed "Aah, is that it?" they said.

Acknowledgements

The Wairarapa *Simplicia laxa* survey was funded by the Department of Conservation Data Deficient programme, project DD 4516. Our thanks go to Colin Ogle for his valuable insights and advice leading up to the survey, and to Colin and Robyn Ogle for assisting on the first day of survey at Waihora River, when, unfortunately, we did not find *S. laxa*. We are grateful to Clive Paton, Toby McDonald and Simon Vallance for permission to survey forest remnants on their land. Toby accompanied us on the second day of survey when we first encountered *S. laxa* near the Wainuioru River.

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■ **Charles Knight's letters to J. Müller Argoviensis (Geneva) on New Zealand and Australian lichens, 1882-1888**

David Galloway, Landcare Research, Private Bag 1930, Dunedin 9054 gallowayd@xtra.co.nz

This is the last in a series of notes recording Charles Knight's correspondence with leading European and Scandinavian lichenologists in the latter part of the 19th century. When Knight retired, aged 70, in 1878 from his post as Auditor-General (Galloway 1990, 1998, 2013c), he devoted a large part of his time to the development of his lichen herbarium and to writing papers on his lichen discoveries both in New Zealand and Australia (Knight 1880, 1882, 1883.). He also corresponded with Northern Hemisphere lichenologists such as William Nylander (Paris), Ferdinand Arnold (Munich), Thore Magnus Fries (Uppsala), Edward Tuckerman (Amherst, USA), Hugo Lojka (Budapest) and Juan Puiggari (Apariahy, Brazil) exchanging New Zealand lichens with them in return for named Northern Hemisphere lichens, including exsiccatae, and lichenological literature (Galloway 2013a, 2013b, 2013c, 2014a, 2014b; Galloway & Vitikainen 2013). With Müller Argoviensis he continued this tradition and in so doing, gained for New Zealand lichens and lichenology, considerable global interest.

The Swiss botanist and lichenologist Johannes [Jean] Müller Argoviensis (1828-1896) was born on 9 May in Teufenthal in the canton of Aargau [Argovie]. He was educated at the University of Zurich and spent his scientific life at the Botanic Garden in Geneva where he was successively Curator of the de Candolle Herbarium (1851-1869), Curator of the Delessert Herbarium (1869-1896), Director of the Botanic Garden (1870-1874) and Professor of Botany at the University of Geneva (1871-1889). Distinguished first as a flowering plant taxonomist, contributing monographs on Resedaceae, Apocynaceae and Euphorbiaceae to De Candolle's *Prodromus* in the 1860s and to Martius's *Flora Brasiliensis* from 1860 to 1881 (Briquet 1896; Stafleu & Cowan 1981), he became interested in Swiss lichens in the early 1850s and from around 1870 onwards in tropical lichens. A prolific writer, he did much to internationalise lichenology by providing names for a very wide range of extra-European material that passed through his hands in Geneva. Since Müller worked at a time when several others with that same surname were actively publishing, Martius suggested to him that he adopt the epithet "argoviensis" in reference to the canton of his birth. Along with William Nylander (1822-1899), Müller Argoviensis dominated lichen taxonomy in the latter part of the 19th century (Kärnefelt 2009).

In the Müller Argoviensis Correspondence held in the Library of the Herbarium of Les Conservatoire et Jardin Botaniques de la Ville de Genève, there are 9 letters from Charles Knight. These record the exchange of specimens and published work between the two lichenologists, as well as documenting Knight's honest opinion of William Nylander. From this fruitful interchange Müller Argoviensis was later to publish two important works on New Zealand lichenology (Müller Argoviensis

1892, 1894). At the beginning of the correspondence Knight was 74 and comfortably retired, while Müller Argoviensis was 54 and at the height of his powers as a publishing lichen taxonomist of the first rank. Knight's letters are printed below.

The Letters

(1) "...Wellington, New Zealand. 27 November, 1882

My Dear Sir,

Many thanks for your obliging letter of the 1st ultimo, and especially for your kindness in at once entering upon my proposal to exchange lichens. I am now busy in making up a set for you to dispatch by the next mail Steamer via Melbourne and Suez. This, although less direct will be a better arrangement than delaying it for the sailing of a vessel from Wellington direct to London. It will be saving in time of at least three months. Some of the scarcer Lichens of which I am at present without duplicates will necessarily be delayed for a future opportunity. Say in about two months from this date, when I shall be sending a set to Sir Joseph Hooker. The present collection will be about 200 in number without including duplicates. In reference to your request that I should send specimens of those Lichens published by others from Lichens supplied by myself, I do not know for certainty that any one has so published. About 14 years ago I sent a collection of N.Z. Lichens to Dr Nylander – about 300 in number – which he very kindly named for me and claimed 140 or more of them as his, but he failed to note which of them were new species. At this distance from Europe, without access to European publications and only Schaerer's work and Exsiccati for reference, I was unable then to determine which out of the 140 he (Dr Nylander) had actually published. He added at the time that "le Syn. Lich., Novae Caled. contient des descriptions de plusieurs de vous espèces de la Nouvelle Zélande". Since then he has published (Linn. Soc. Bot. Vol. 9, 244) Lichenes Novae Zealandiae quos ibi legit anno 1861 Dr Lauder Lindsay. He has also said in his letter to me "Je publierai un travail sur tous les Lichens qui sont d'un grand interest pour la science et montrent cette partie de la Flore néozélandaise beaucoup plus rich qu'on me l'avait pense avant vos recherches. Vous avez considérablement augmenté nos connaissances de cette vegetation curieuse".

No publication was made or Dr Nylander would have supplied me with a copy. I am sorry to add for some years after I gave up the study entirely. My duplicates were neglected - the tickets misplaced - and the collection still further injured by the removal of the seat of Government from Auckland to Wellington. You will understand, therefore, that owing to want of information and the confusion arising from displacements and loss of specimens, I have been unable to quote Nylander with any confidence, and his omission to note which were new at the time adds to the difficulty. I shall send you, however, a list of those to which "Nyl." Was annexed by Dr Nylander.

It would be very satisfactory to obtain the publication (say in the "Flora") of the lichens of N.Z. in accordance with the views of Theop.[sic.] Fries, Massalongo & Koerber as modified by yourself.

Believe me

Dear Dr Müller,

Yours very truly,

Charles Knight..."

(2) "...Wellington, N. Zealand. 22nd January 1883

Professor Müller

Geneva

Dear Sir,

On the 9th Instant I shipped on board the sailing ship "Wanganui" a case of N.Z. Lichens addressed to my Agents, Henry S. King & Co. 65 Cornhill, London with instructions to forward the case to your address.

Hoping you will receive the specimens in good order.

I am, with much esteem

Yours faithfully

Charles Knight..."

(3) "...Wellington, New Zealand. 23rd April 1883

Dear Dr Müller,

The Cuban Lichens¹ came to hand in good condition by the last steamer via Suez and Melbourne. The package was delayed in London waiting for a collection of Hungarian Lichens from Professor Lojka of Budapest, who, I am sorry to add after all the delay, did not respond to my offer to purchase it. Dr Arnold in writing to me says "hanc collectionem ditissimam tibi commendo".

Your valuable collection of about 240 exotic lichens has interested me greatly and I thank you heartily for it. I trust you will be able to fulfil the promise you hold out of occasional contributions to my herbarium. I shall always respond by returning you at least an equal number of Australian and Tasmanian Lichens. Hoping that as "confreres", we may have many opportunities of assisting each other in a Science to which you have contributed so many valuable Papers,

Believe me

Yours faithfully

Charles Knight M.D. ..."

(4) "...Wellington, 2 September 1883

My Dear Dr Müller,

I am this day in receipt of your letter of the 12 July. I am pleased to learn that the N.Z. Lichens have given you satisfaction. Many of the specimens were mere scraps; but bad as they were it was better to send them than to delay until my collections were better supplied with duplicates. Those Lichens which are found principally in the northern part of the North Island and the southern part of the Middle Island were especially inadequately represented and as large number entirely omitted. It is now some years since I collected in those districts. In a few months I may have an opportunity of visiting places both North and South of Wellington, and will then give you an earnest proof of my desire to cultivate the friendly alliance which I gather from your kind letter you wish to establish between us.

I regret that my friend Dr Nylander is so intolerant and quarrelsome and so offensive "contra bonos mores" [against good morals]. He is incorrigible. For years he has had a great "down" on Prof Fries of Upsala. He seems never to miss an opportunity for a rude onslaught on "Microgonidism", and "Schwendenerism". Certainly Dominus Schnetzler might well complain. As to "Sporologists" they have carried their views to great extremes, at the same time they have done much good, especially Körber, in enforcing a searching investigation of the minute anatomy of Lichens, on which I observe you lay special stress. I regret to find on looking over my Memorandum that I neglected to retain a list of the N.Z. Lichens sent to you. The specimens from your own herbarium are invaluable to me and I can scarcely sufficiently thank you for your liberality. Thanks also for the copies of your papers recently sent to me.

Believe me

Dear Dr Müller,

Yours faithfully,

Charles Knight..."

(5) "...Terrace, Wellington, New Zealand. 11th Feby, 1886

Dear Dr Müller,

I have this day sent a collection of Lichens to Prof H. Lojka of Budapest – accompanied by a Packet of about 90 directed to your address in Geneva, which I have requested Lojka to forward. I have lately received a numerous collection of Lichens from the North of Queensland in the neighbourhood of Torres Straits. The collection was made for me by Dr Hartmann² and included many specimens of saxicolous Lichens but not many species. Those sent today are from Toowoomba and Brisbane. I shall be much pleased and encouraged by your criticisms on them for my guidance. I am very desirous of obtaining from you duplicates of Lichens that you can conveniently spare. My Agents in London are Henry S. King & Co, 65 Cornhill, London.

Believe me,

Yours very faithfully,

Charles Knight..."

(6) "...Wellington, New Zealand. April 7th 1887

Dear Dr Müller,

I have directed my Agents, Henry S. King & Co, 65 Cornhill London to procure for me a set of Stizenberger's Lichenes Helvetici Exsicc., which I am under the impression includes more than 1000 specimens of Swiss Lichens. I am afraid they will not know to whom to apply in Geneva for information. Should such be the case I have taken the liberty of referring them to you for assistance. In great haste to secure the outgoing mail which leaves here in about 10 minutes

Believe me.

Yours sincerely.

Charles Knight..."

(7) "...Wellington, N.Z. 8th February 1887

My Dear Sir,

I received this morning your kind letter dated 29 November last and hasten to reply. I return herewith your List of Lichens with the information you need noted thereon. I send by Book Post copies of papers on the Lichens of Queensland. I may mention that Thursday Island in Torres Straits is included in the Province of Queensland. At the time I sent you the parcel of Lichens I had not received my copies of the Papers owing to the Government Printer at Brisbane having made a mess in transferring my drawings (which were made on tracing paper) and rendered it necessary to delay publication for several months.

The day after tomorrow a steam ship leaves Wellington for London. I propose to take advantage of the opportunity to send you a case of Queensland Lichens. I shall put up as many duplicates as I can. They will of necessity be mostly unmounted. Some of the specimens are cut off my typical set. This is owing to my having no duplicates. Another opportunity of sending a parcel to you will occur early in the month of March, when I propose to send a number of specimens collected by my friends in Melbourne. It may be worth while to delay your paper on the Lichens of Australia until you have an opportunity of examining the Victorian Lichens which I shall send you next month. Although I have put numbers to most of the specimens sent by the present opportunity I do not see that this will be of any use either to you or to myself. What I propose is this viz., that you shall return me a complete set of each species and variety named to give them authenticity; the remainder of course to be yours. My set to be securely packed in a suitable box for transmission to New Zealand through my Agents in London (Henry S. King & Co 65 Cornhill, London). If you are inclined to be generous I should be greatly obliged by your adding a set of such of the Australian Lichens (of late years published by you in the Flora) as you can spare. I may mention that the whole of the Lichens sent by the present opportunity were collected in Queensland; those from Torres Straits by C.H. Hartmann and the rest by several collectors and sent to me by my friend Mr Bailey³ of Brisbane. If you agree, I will instruct my agents to discharge any expense you may incur in providing a suitable box and in the dispatching of it to England, and to remit you 240 Francs for determining the Lichens on your forwarding the box.

Nylander is an Ishmaelite; he seems to me of an unhappy disposition and soured in temper. It is a misfortune to the Science to have such an irascible person at the head of it. I have made many mistakes in my determinations of Lichens and no doubt deserved a Lecture; but there are many excuses for a person residing in a distant colony and unable to obtain either books or specimens from European Botanists. It is very pleasant to look back upon the encouragement one has received from the Hookers –

In reference to the future I propose to send my collections entirely to you for determination. I admit it was a mistake of mine to attempt to determine exotic Lichens under great disadvantages.

Accept dear Sir, friendly greetings and believe me with great esteem

Truly yours,

Charles Knight..."

(8) "...Terrace, Wellington, New Zealand. 7 March 1887

Dear Professor Müller,

On the 5th Instant I despatched by the Steam Ship "Ruapehu" a case of Australian Lichens (agreeably to my promise) consigned to Messrs Henry S. King & Co, 65 Cornhill, London with directions to forward the same to your address in Geneva.

The case contains between 300 and 400 specimens. Those collected in Victoria are distinguished by "Vict." Being added to each "No." those from New South Wales by the initials N.S.W. and the Queensland Lichens by "Qd". I have retained a duplicate set. It will therefore be sufficient to refer to the "No's" in furnishing a list of names for my guidance.

I am sorry to add that many of the specimens are mere scraps; but in every case I have sent you the best.

In reference to the N.S. Wales Lichens published in the Linnean Transactions I have noted on each specimen the names given in my Paper.

I have included in the Case a scrap of Maingay's⁴ specimen Parmelia circumnodata (Nyl.) with a specimen & drawings of the Queensland Lichen, which I take to be identical with Fée's P. coronata and Nylander's circumnodata. Nylander describes the under surface of Maingay's Lichen as pale. You will find it to be black in color; the mistake arises out of the fact, that in stripping off the black hairs, the black under surface of the thallus is torn away also, and exposes the pallid medullary layer. You will see this by the drawing of the section I made of the thallus.

Believe me, my dear friend,

Yours very faithfully
Charles Knight

P.S. For the future I propose to send my further collections to you for identification. I shall next take up the Tasmanian Lichens and hope from time to time to send you further gatherings of Australian Lichens. Already since sending off to the ship the present lot, I have received several fresh plants from Queensland. Among them I find an interesting Graphis or Fissurina on leaves of Flinnderia [sic] maculosa. I enclose a specimen..."

(9) "...Terrace, Wellington, New Zealand. 4th April 1888

Dear Dr Müller,

I return you sincere thanks for your kindness in sending to me copies of your valuable papers on Lichenology.

I enclose two specimens of a new Gomphyllus discovered by the Revd Mr Wilson⁵ of Victoria. He wishes it to be named G. globulus; but in view of the only other species "calicioides" would not G. baeomyceoides be appropriate? [in fact named thus by Wilson (1891)]. The specific name, however, must be left entirely to you, if you would be good enough to describe the plant and publish it among the Australian Lichens.

I trust that the case of Australian Lichens sent to you in the month of February 1887 through my Agents Henry S. King & Co, 65 Cornhill arrived safely in Geneva.

Believe me

Most sincerely your obliged friend

Charles Knight..." [To this Müller Argoviensis has written: "...resp. 22 July 88. Bien reçu"]

Müller Argoviensis subsequently made use of New Zealand and Australian lichens sent to him in several of his publications (Müller Argoviensis 1884, 1885a, 1885b, 1886, 1887, 1892, 1895a, 1895b, 1895c). Müller Argoviensis described *Knightsiella* in Knight's honour in 1886: "*Genus in honorem cl. Dr. Ch. Knight, F.L.S., de Lichenographiae Novae Zealandiae et regionis New South Wales Australiae benemeriti dictum est*" (Müller Argoviensis 1886; Hertel 2012:61). In recent years the sole species in the genus, *Knightsiella splachnirima*, was transferred to *Icmadophila*, but recent molecular work may well see the reinstatement of *Knightsiella* as a monospecific taxon (Galloway & Elix 1981; Galloway 2000; Ludwig 2011). On a visit to Kew Müller Argoviensis looked at many New Zealand lichens, especially those sent to Kew by William Colenso, on which he published a paper listing names for Colenso's lichens and describing nine new taxa (Müller Argoviensis 1896). This paper was published posthumously in November 1896, 10 months after Müller's death after a short illness on 28 January 1896. Müller Argoviensis is probably best remembered for his detailed catalogue of New Zealand lichens (Müller Argoviensis 1894), a work much influenced by his correspondence and exchange of specimens with Charles Knight.

Acknowledgements

I am grateful to the late Dr Patricia Geissler (Geneva) for providing photocopies of the Charles Knight letters in the Müller Argoviensis Correspondence held in the Library of the Herbarium, Les Conservatoire et Jardin Botaniques de la Ville de Genève.

Notes

- 1 Müller Argoviensis sent Knight an exsiccata set of 240 Cuban lichens with the printed title page "*Graphideae Cubensis a cl. C. Wright lectae et a cl. W. Nylander determinatae*". Although Knight acknowledged the safe delivery of this set in April 1883, both Willey (1886:76) and Sayre (1969:149), give the date of distribution as 1884. Charles Wright (1811-1885) collected lichens in Cuba between 1856 and 1865 (Galloway 2014a: 20). A part of this collection was sent to William Nylander "...for determination, in whose hands it remained for many years, when it was transferred to Dr. J. Müller, of Geneva, Switzerland, by whom it was issued in 1884, but with most of the plants still unnamed and undescribed, much to the disappointment of those who had purchased this noble collection hoping to find it an aid in the determination of tropical lichens. The determinations of the Pyrenocarpae were, however, published by Dr. Müller in 1885, and that of the Graphideae may perhaps be expected before long..." (Willey 1886: 76).
- 2 Carl Heinrich Hartmann (1833-1887). Horticulturist and plant collector of Toowoomba, Queensland. A friend and correspondent of Charles Knight to whom he sent Queensland lichens and a collection of lichens from Thursday Island in the Torres Strait, several of which were circulated in Hugo Lojka's exsiccate *Lichenotheca Universalis III* of 1886 (Galloway 2014b).

- 3 Frederick Manson Bailey (1827-1915). Colonial Botanist for Queensland. Correspondent of Charles Knight to whom he sent specimens of Queensland lichens that he collected, many of which Knight named.
- 4 Alexander Carroll Maingay (1836-1869). British surgeon in the Indian Army who collected plants from Burma (Myanmar) and Penang.
- 5 Frances Robert Muter Wilson (1832-1903). Scottish born, Presbyterian minister at Kew, Victoria who collected lichens and was greatly helped in his initial lichenological endeavours by Charles Knight, before corresponding with Müller Argoviensis in the 1890s (Ralston 2001)

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■ **William Martin's appreciation of John "Jack" Scott Thomson (1882-1943)**

David Galloway, Landcare Research, Private Bag 1930, Dunedin 9054 gallowayd@xtra.co.nz

On 29 October 1968 from the Biochemistry Department of the Otago University Medical School, I sent William Martin (1886-1975) the following letter:

"...Dear Mr Martin,

The reprints of the Port Pegasus paper arrived today and I have enclosed one in this letter.

At the moment I am trying to tie up odds and ends of a somewhat unsatisfactory Ph.D. thesis which I shall submit next year before moving to Palmerston North, where I have accepted a position with Plant Chemistry Division DSIR.

While I shall be sorry to leave Otago, the new job offers great scope biochemically, where I can also pursue my enzymological studies on lichens. Also of course, the North Island offers great scope for field studies, so I can't imagine myself being stuck for something to do. I'm only sorry that I didn't do a bit more while around Dunedin, but as you know lichens are a difficult group, and they take several years to get to know properly. However I hope eventually to come back to university work here, and then perhaps do justice to our remarkable local flora.

For the past year or so I have been thinking about the possibility of writing a book on the New Zealand lichens – preferably something well illustrated in colour, for this would probably make the group more accessible to the general reader than a mass of words. It is a project that I hope will be realized within 8-10 years. By that time I think enough data should be available to give an adequate introduction to the subject. An integral part of such a study would be a history of lichenological investigation and, where possible, of lichenological investigators.

Of the indigenous collectors four names are important viz: J.S. Thomson, H.H. Allan, J. Murray, and yourself. Now this is where I ask you for help. Would it be possible for you to give me your views on these people, as scientists & collectors and how they came to their interest in lichens & what they achieved.

Your own & Murray's contributions have been very fine ones, and I would regard it as a great loss if details of how you came to study the group were lost to future investigators. I find personal history is a most valuable adjunct to objective scientific reportage.

If you could do this for me I would be most grateful, and of course in the event of publication it will be a pleasure to acknowledge your contributions.

With kind regards

Yours sincerely

David Galloway..."

On 1 November 1968, William Martin replied:

"... In response to your request for personal notes re. recent workers I am enclosing a short note on each so far as known to me. I trust there may be something of general interest. If there are points omitted which you require or desire, don't hesitate to ask. I knew each of the three fairly intimately. So far as I am concerned most of my work has been done after I had passed 'the allotted span' (I am now 82), so the quality may reflect the setting in of obsolescence. However, I have published some 42 papers in various journals – relatively few on the lichens – so, perhaps I can claim to have made

some contribution to the botany of N.Z. ...” [Of his own interest in lichens Martin wrote at this time] “...I knew the mosses but scarcely knew more than a dozen or two lichens. It was at the request of Jas Murray that I should assist him by including mosses in my field forays that I first became really interested in the lichens. At my time of life I decided to limit myself to the Cladonias and to make available to Jas Murray anything of interest in other genera. This arrangement worked well till his accidental death in 1961. By this time I had built up a surprisingly large lichen herbarium. In Cladonia, I had the constant collaboration of Dr A.W. Evans¹ of USA the recognized authority on the genus, and later of Dr Teuvo Ahti, the leading student of the Cladina group of Cladonias. Following Jack Thomson’s death I was given permission by his son Tom to go through his lichen collection housed at the cordial factory and where material was ample to abstract small samples of named material. I was also loaned the notebooks recording each collection with the date & locality for each. These I copied – fortunately, for the books seem now to have gone astray – but, as there was a danger of the collections being dumped as unwanted lumber, I arranged for them to go to the O.U. where for a time they were housed in the Chemistry Dept, and later at the Botany Dept. I was able to supply material to many overseas workers and received in return large numbers of named overseas lichens. I still have hundreds of unnamed plants awaiting overhaul by some future worker. At the age of 82, I can’t expect to continue much longer to contribute to lichenology. However, health remains good at present. Present collections number circ. 9000...”

William Martin’s account of Jack Scott Thomson is transcribed here, adding a further dimension to earlier accounts of this important southern botanist and lichen collector (Sim 1943; Holloway 1943; Godley 1996; Bannister 2000; Galloway 1985, 2012).

“...J. Scott-Thomson’s Contribution to N.Z. Lichenology. An appreciation.

The Annual Report of the Otago Branch of the Royal Society of New Zealand for 1943, published on page xxv of Vol. 74 of the Transactions [correctly Proceedings] of the Roy. Soc. of N.Z., places on record the significant contribution to Botanical Science in New Zealand by the late John Scott Thomson of Dunedin in a minute prepared by Dr J.E. Holloway and Dr F.J. Turner. Though framed in general terms no mention is made to Thomson’s interest in or contributions to lichenology, extensive as they were. Doubtless this resulted from the fact that all his botanical papers were concerned mainly with the vascular flora, and references to lichens were incidental, no papers being devoted solely to this plant order.

In association with George Simpson F.L.S., Jack Thomson F.C.S., F.L.S. visited almost every part of the South Island collecting and studying the indigenous vegetation. These “botanical twins” as they came to be known began their plant studies in the early 1920’s and until 1933 confined their attention to the flowering plants and ferns. They worked in close collaboration with Dr Leonard Cockayne and Dr H.H. Allan, Director of the Botany Dept of the D.S.I.R. who for some time had been studying the lichen flora and making numerous collections mainly in the North Island. It was he who suggested to Jack Thomson that on his numerous excursions to places in the South Island, he pay some attention to the lichens and help to build up the collections housed in the D.S.I.R. Herbarium², destined to become the principal herbarium in the country.

From April 1933³ to 1941 Thomson applied himself diligently to collecting the South Island lichens. His initial collection was made on Mt. Maungatua [Thomson’s initial collection was in fact made from Flagstaff (1 April 1933), though his first 14 numbered collections are from the summit bogs on Maungatua (7 April 1933) – see Note 3 below] on the western margin of the Taieri Plain; but in the same month he made further collections on Mt Flagstaff, Waipori, Matanaka, Waikouaiti, Pigroot, and Kyeburn. In May six separate localities were studied and in June nine others. The whole of his 1944 collections were made in Otago and Southland, ranging from the Kakanui Mts in the north to the coastal areas of Southland. In 1934 he ranged further afield, his excursions including Mt Tapuaeunuka (9400’) and the Chalk Range in Marlborough, Porter’s Pass, Mt Torlesse, and Castle Hill Basin in Canterbury. Thomson was an expert mountaineer and, among other alpine localities visited where lichens were collected, may be mentioned Mt Tutoko (9000’), Mt Earnslaw (8000’). Mt Torlesse (6000’) and Mt Ida (6000’).

As the primary purpose of this activity was to form a representative collection of the indigenous lichens for the D.S.I.R. all collections were shared with Dr Allan, who did the work of identification, or arranged for overseas specialists to do it. A very large number of specimens was forwarded to Dr Zahhlbruckner of Vienna⁵ for determination and he in turn called on Sandstede⁴ to determine the Cladonias and on Motyka⁵ to identify the Usneas and Ramalina [Martin is in error,

Ramalina specimens were determined by Gyelnik⁶ and by Bouly de Lesdain⁷. Zahlbruckner published his determinations in "Lichenes Novae-Zelandiae" in 1941. His determinations increased the known lichen flora by 66 new taxa from the North Island and by 93 new taxa from the South Island. The North Island specimens were collected mainly by Allan, Dr Lucy Moore, and Mr K.W. Allison, and those from the South Island were almost wholly the work of Mr J. Scott-Thomson. Though he did no more than collect lichens, his work resulted in a significant increase in the known lichen flora.

He died in 1943 and his lichen collections which filled some 28 cases [wooden soft-drink crates] and which were stored in a lumber room above the main office of the cordial factory of which he had been a proprietor, remained untouched for some years collecting dust and generally regarded more or less as lumber, and so in danger of being destroyed. In 1952 the writer was given permission by Mr Tom Thomson, son of Mr Jack Thomson, to examine the lichens still in the original tobacco tins and in perfect condition. The original note books in which the lichens were recorded together with relevant data were also made available and a duplicate copy was taken. Realizing the value of the collection, it was suggested that it be gifted to the Otago University, a course that was readily acceded to. As the only member of the University staff then studying the indigenous lichen flora was Dr James Murray of the Chemistry Department, the Thomson collection was for a time housed in that department where it was overhauled and rearranged; but, following Dr Murray's tragic death in a motor accident, it was transferred to the Botany Department Herbarium, where it is now housed.

In all, Thomson had collected some 436 species and numerous varieties representing one third of the known lichen flora of New Zealand. The genera best represented were Parmelia (including Hypnogygnia [sic]) 46 species, and Sticta (including Pseudocyphellaria) 45, Lecidea 43, Cladonia 44, and Lecanora 34. The species collected most frequently were Sticta chloroleuca (21 times), Sticta coronata (15), and Cladia aggregata (14). Some 50 of the species novae" had been obtained in the environs of Dunedin, an area containing at least 400 lichen species. It may be worthy of note that further species new to the area or new to science have since been collected by Dr Murray and the writer.

The lichens of the Thomson collection had been obtained from 133 separate localities in the South Island, while Nos 2983 to 3122 represented lichens obtained on Herekopere Island and on Stewart Island mostly from Table Hill and from areas bordering Paterson's Inlet. Besides the alpine areas already named, other areas from which alpine and subalpine lichens were gathered included Mt Madeline, Mt St Mary, Mt Pisgah, Kelly Range, Mt Alfred, Garvie Mts, Longwood Range, Rock and Pillar Range, Mt Misery, and Grave-Talbot Pass [the Darran Mountain specimens were in fact collected by Dennis H. Leigh]. Some sixty gatherings came from Doubtful Sound. No attempt was made in any area to make a comprehensive collection of all species present, this being impossible in the short time usually available; nevertheless no other collection, other possibly than that made in 1926 by Dr and Mrs E. Du Rietz, has been made on so extensive a scale by any single individual, and, though determinations were not as a rule made by him, his work has greatly enlarged our knowledge of the lichen flora, recognition of this fact being his just due.

William Martin, 27 Merchiston Street, Andersons Bay, Dunedin..." (Martin 1968, manuscript in possession of the author).

New lichen names described from Thomson's collections are found mainly in Zahlbruckner (1941) but also in Redinger (1936), Frey (1936, 1949), Motyka (1937), Hilmann (1938), Gyelnik (1938), Lamb (1947), Dodge (1948), Llano (1950) and Lamb (1977). Duplicates of Thomson's lichens are found in the following herbaria: AK, BM, CHR [a major holding of material sent to H.H. Allan in the first instance, with many isotypes of species named by Zahlbruckner and other authors. Thomson's hand-written list of the lichen collection sent to Allan is held in the Rare Books Room of the Landcare Library at Lincoln, together with a hand-written copy of this made by William Martin], Genoa [Museo Civico di Storia Naturale "Giacomo Doria" – specimens that I discovered here in the attic of this great museum, sent to the Italian war poet and lichenologist Camillo Sbarbaro (1888-1967)], OTA [Scott Thomson's personal lichen collection containing many isotypes of taxa named by Zahlbruckner and other authors. James Murray's hand-written list (plus notes) of the Thomson lichen collection is also held in OTA], W [a major collection, containing many duplicates and holotype material of names described by Zahlbruckner] (Galloway 1985, 2007).

Notes

- 1 Dr A.W. Evans (1868-1959). Celebrated bryologist and Professor of Botany at Yale University (Schuster 1960). He took up a study of *Cladonia* in c. 1928 at age 60, and for the next 32 years made many important contributions to Cladoniology. One of the earliest proponents of Asahina's chemotaxonomic approaches to lichenology (Hale 1960) he was, for many years, William' Martin's main correspondent and advisor on *Cladonia* matters.
- 2 At that time the herbarium of the Plant Research Station in Palmerston North, was Dr Allan's personal herbarium and kept in his room, together with Allan's books and reprints, which in effect comprised the future Botany Division Library. It continued thus on the establishment of Botany Division DSIR and its removal to Wellington (Dr Henry Connor, *pers. comm.*)
- 3 Thomson's April 1933 collections (49 in number) include: 1 April, Flagstaff; 7 April, Maungatua summit; 8 April, Waipori; 15 April, Pigroot, Kyeburn; 16 April, Matanaka, Waikouaiti [J.S. Thomson's list "Approximate altitudes - and other data- at which the lichens mentioned below were collected" – Landcare Research, Library Archives]
- 4 Heinrich Sandstede (1859-1951). German lichenologist. A baker by trade, who became the leading European specialist in *Cladonia* before World War II (Llano 1952; Kärnefelt et al. 2012). Between 1935 and 1939 he received many New Zealand specimens of *Cladonia* from H.H. Allan (including J.S. Thomson's collections) for determination, Sandstede's names being reported in Zahlbruckner (1941: 324-328).
- 5 Jozef Motyka (1900-1984). Polish lichenologist whose major monograph on *Usnea* in two volumes contains several new names based on J.S. Thomson material sent to him by H.H. Allan (Motyka 1937).
- 6 Vilmos Köfarago-Gyelnik (1906-1945). Hungarian lichenologist who published profusely on lichens before World War II. From New Zealand collections sent to him by H.H. Allan, Gyelnik described two new taxa in *Nephroma* (Gyelnik 1938) from collections made by J.S. Thomson.
- 7 Maurice Bouly de Lesdain (1869-1965). French lichenologist from Dunkerque (Dunkirk) on the English Channel coast (Abbeyes 1966) who, in March 1936, received New Zealand specimens of *Usnea* and *Ramalina* from H.H. Allan for determination. This material included J.S. Thomson specimens. Bouly de Lesdain wrote to Allan "...Je vous adresse une longue liste de determinations des Usneas que vous avez en l'amabilité de m'envoyer, ainsi que le nom d'un nouveau Ramalina que j'ai le plaisir de vous dédier..." This being *Ramalina allanii* (Bouly de Lesdain 1937), now a synonym of *R. australiensis* (Blanchon et al 1996: 68).

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BIOGRAPHY / BIBLIOGRAPHY

■ Biographical Sketch – James Speden (1870-1952)

Val Smith, 80 Mill Road, New Plymouth 4310.
James Speden (1870-1952)

James Speden was born in Opoho, Dunedin, on 28 September 1870, the third son of James Speden and Helen Laurie, and the first of their ten children born in New Zealand. The Spedens were Border Scots, and James' parents had lived in Galashiels before emigrating with their two infant sons on the clipper *James Nicol Fleming* in 1869. James senior worked as a carpenter and builder until 1877, when he tendered for a 199-acre block of land at Knapdale, 12 km north of Gore. After attending North-East Valley School, young James became a first-day pupil at Knapdale School in 1879. He and his brothers helped establish the farm, but it could not support them all, and James took up a carpentry apprenticeship with William Willis of East Gore.



Celmisia spedenii

After travelling to Scotland and England in 1892, he returned to building, and in 1894 took over the business of a previous employer, Mr W A McCaw. In 1895 he married Margaret Christie, with whom he had three daughters and two sons. A major early contract was the rebuilding in 1896 of Gore School, which had been destroyed by fire. Along with an expanding timber and hardware business, James became interested in native plants, especially alpine herbs and shrubs. In 1906 he bought a four-acre section on which he built an impressive home and developed an extensive garden.

Wood carving, building design, tramping, painting and photography complemented his interest in collecting, studying and cultivating native plants. With Dugald Poppelwell of Gore, he collected extensively in the Garvie, Eyre and Remarkable ranges of Fiordland, and elsewhere in the South Island, especially around Arthur's Pass. His rhododendron expertise evolved from his friendship with David Tannooh, superintendent of the Dunedin Botanic Garden, who asked him to propagate seeds of Himalayan species sent from Scotland by collector Frank Kingdom-Ward. Speden later devoted over an acre to the cultivation of rhododendrons. Always ready to share his knowledge, he contributed numerous articles to scientific and horticultural journals.

As he became interested in local affairs, he eased his son Gordon into management of the business. In 1928 James was a foundation member and first president of the Gore Garden Club, and was active

in the district's Early Settlers Association. In 1929 his wife Margaret died, and in 1932 he married Ellen Jones. They moved to Opoho, Dunedin in 1946 and shortly before his death in 1952 he was elected an honorary member of the Institute of Horticulture. Ellen died in 1973. James Speden's passion was reflected in his substantial bequests for the cultivation of native plants, and sixty years on, Ian Speden of Lower Hutt, who provided this information about his grandfather, credited him with triggering his own interest in botany.

James Speden was awarded the Loder Cup in 1943 for his botanical explorations and the collection and cultivation of native plants. Two of his discoveries, the speargrass *Aciphylla spedenii* in 1922, and the needle-leaved daisy *Celmisia spedenii*, which he located in 1939 in the Eyre Mountains after seeing the species in cultivation in Gore, are named after him. A large speargrass weevil *Lyperobius spedenii* found in the mountains of the Lake Wakatipu area, and a large southern New Zealand land snail, *Powelliphanta spedenii*, are also named in his honour.

References

Speden, I & E (comp.) 1999. *The Spedens in the Borders and New Zealand*. Wellington, printed privately by Pronto Print.

Celmisia spedenii

Asteraceae

Speden's mountain daisy, a montane to alpine ultramafic endemic of sparsely vegetated rock strewn ground, fell field and rock outcrops, is locally abundant in its few known locations in northern Southland. It is a woody-based perennial herb, forming small to large mats to 1 m across, from which arise many stiff erect linear silvery leaves about 7 cm long with inrolled margins. Flower heads from December to February are 3-4 cm wide, on slender erect stiff stems up to 10 cm or so tall. The species was formally described and named after its discoverer by George Thomson, in 1945.

PUBLICATIONS

■ Publications Received

Canterbury Botanical Society Newsletter 2014: 4 Upcoming meetings and trips, meeting report on Spring Flowers in Ontario and British Columbia, balding *Hymenophyllum scabrum*,

Canterbury Botanical Society Newsletter 2014: 5 Upcoming meetings and trips, presentation of Hugh Wilson painting to Christchurch Botanic Gardens by the Society.

Canterbury Botanical Society Newsletter 2014: 6 Upcoming meetings and trips, meeting report on rosette-forming *Brachyglottis*, photo competition winners.

The New Zealand Native Orchid Journal 132, May 2014 *Pterostylis australis* review, Thompson Sound, Mt William SR orchids, *Gastrodia* species diversity, Nelson *Nematoceras* fungus gnats.

Wellington Botanical Society Newsletter May 2014 Upcoming meetings and trips, submissions made, trip reports including Te Urewera and Whirinaki Parks, Muritai track, Baring Head.

■ Book review - **Lichens of New Zealand – an Introductory Illustrated Guide. ISBN 978-0-473-26516-8**

Botanical Society of Otago (Audrey Eagle Botanical Publishing fund). \$20-00

Peter J. de Lange, *Principal Science Advisor, Science and Capability Group, Department of Conservation* (pdelange@doc.govt.nz)

It's a little known fact that in 1988 I was awarded a PhD scholarship to study the large lichen genus *Pseudocyphellaria* (Lobariaceae) under Dr David Galloway at the Natural History Museum, London

(BM). I would have done it, if not for the fact that the United Kingdom was still a little irked with New Zealand's then stance on nuclear weapons, and so refused me entrance to their country. Never mind. I say it here if only because I am a closet lichenophile. I have always been fascinated by lichens, and as a boy was perplexed that virtually nobody in the Hamilton Junior Naturalist Club (of which I was a member) had an interest in them, or could teach me about them. All we had to hand then was Martin & Child (1972), a lovely little book, crammed with lots of useful information and some nice pictures to be sure, but sadly rather limited in its scope. My lichen induction therefore had to wait until 1985 when as a second year B.Sc. student, I was collecting for the Waikato University Herbarium (WAIK) and one of my lab tutors (Frieda Henschens) was doing a M.Sc. on lichens under Dr Allan Green. Frieda noted my interest in lichens, encouraged this and furthermore pointed me in the direction of the university bookshop with instructions to purchase a copy of the New Zealand Lichen 'Flora'¹ (Galloway 1985) which had then just come out. This was a good purchase, though the only blight on my lichen landscape was that I had to learn a whole new set of terminology to work the keys. Still I had able assistance in the form of Frieda and Allan, both of whom helped explain the lichen 'Flora' in such a way that it avoided my leaving it on a shelf to accumulate dust. In this regard I realise I was lucky – most people don't have expert lichen knowledge on tap.

Then, 22 years later in 2007, David Galloway produced his second edition of the lichen 'Flora', a rather hefty two-volume tome, offering readers further insights into the huge increase in our collective knowledge of the New Zealand lichen mycobiota, and with that, of course, there came a correspondingly greater set of terminology to learn. That you need to come to grips with lichen terminology to understand the diversity here is of course blindingly obvious. Whilst the two lichen 'Flora' treatments provide a remarkable resource for the lichenologist it's also true to say that for many of us out there with a developing interest in lichens, those books are perhaps a little too technical to inspire and nurture a fledgling interest.

Recently, Dr Allison Knight has taken on the challenge of demystifying our lichens. A keen lichenologist, Allison has long seen a need to illustrate and explain in 'simple terms' (her words to me in 2013) the diversity and morphology of our lichens. Her small book, the aptly titled 'Lichens of New Zealand – an introductory illustrated guide' serves that purpose admirably. The format is A5 and, at 55 laminated pages, nicely weather-proofed and certainly not a dead weight for any budding lichenologist doing a day walk or even a more serious long-distance tramp. The text is certainly non-threatening to the 'non-specialist' – which was one of Allison's goals. There are 423 colour images depicting key lichen habitats, the lichens occurring within those habitats, examples of the three main lichen growth habits (foliose, fruticose and crustose), or illustrating key lichen characters such as cyphellae, soredia or maculae. Short sections explain with a minimum of 'technobabble' what a lichen is, their growth forms and habits, also their nomenclature, before discussing their occurrences within four carefully colour-coded 'ecosystem' chapters ('Urban and Pastoral', 'Coastal and Freshwater', 'Forest and Shrubland', 'Alpine and Subalpine'). It is within each of these four 'ecosystem' chapters that the bulk of lichen illustrations reside, in glossy plates of eight lichens per A5 page. Their colour is superb, each image taken when the lichen was in a fresh (i.e. 'moist') state. That these images are helpful cannot be doubted; during some recent field work on Mt Ruapehu in November 2013, Allison's book enabled me to quickly identify – in the field no less – *Arthrorhaphis alpina*, *Topeliopsis decorticans*, and *Pseudephebe pubescens* – identifications which I could later confirm at my leisure using the New Zealand lichen 'Flora' series.

Obviously though, no guide is ever perfect and there is always room for improvement. Although this guide serves its intended purpose admirably, as one of New Zealand's estimated 8–10% with colour vision impairment, I would have preferred to see colour codings used that enable the majority of those afflicted with this genetic disorder to be able to easily use the book – either that, or consider the use of a secondary hatching or patterning within each colour code. The latter, it has been shown, will enable even the worst colour-vision-afflicted to 'see' what can be seen by those with so-called 'perfect' colour vision. Scale bars are also missing. In any guide, especially one so well illustrated, it's disappointing not to see any units of measurement, and, at the very least I do believe it is well worth placing a ruler on the rear cover of such books (see for example Rolfe & de Lange 2010), to aid one in the field. A scale bar would not only greatly assist field identification but perhaps also avoid unnecessary collection of specimens (something the author quite rightly cautions against (Knight 2013; p. 5)); in this way notes can then be taken of the sizes of the various parts of the lichen directly in the field. Earlier, I noted that the images are of lichens taken when the taxa were fresh (i.e. 'moist'). This is understandable, and I appreciate the need for brevity, but many lichens completely change their

colour and form when dry. Some thought into how to depict this would be useful for future editions. As a biosystematist, I also understand the frustration many people feel with name changes, and for lichens these changes are perhaps more frequent than for vascular plants. The 'Introductory Illustrated Guide' addresses these changes by retaining the names used in the lichen 'Flora' series, indicating those names which have changed in the following manner: *Melanelia glabratuloides*^{*}. I don't like this for a number of reasons but mostly because '^{*}' is often used in New Zealand to indicate a naturalised plant, whilst in the system set by the New Zealand lichen 'Flora' series it is also used to indicate a lichenicolous genus (though to be fair the '^{*}' is then used in this way **Plectocarpon*). Overall though, I find this coding system distracting and a little annoying as I then want to know what the change to that name is. To help you the guide suggests one consults the New Zealand Plants Database (<http://nzflora.landcareresearch.co.nz>) which would be a good idea except that even there the names are not necessarily up to date. It would have been far better to have provided the name as currently used in modern literature, and a table cross-referencing the name changes to the New Zealand lichen 'Flora' series at the back of the guide. This is less messy and more user-friendly, even if, inevitably, the names will probably change again, and it adds an extra page to the book. Finally in a book of this nature, where content is intentionally rationed, I understand the need to cut down on references. However, the author has made a good selection (though some of the suggested texts are now out of print) but I question the relevancy of the final statement (Knight 2013, p. 54): '**HANDS-ON** The annual **John Child Bryophyte and Lichen Workshop** – welcomes everyone from beginner to expert'. It would be more appropriate perhaps if there was a contact address, webpage, email or phone number for said event. While I may know what this event is, a school child interested in lichens in Omamari may not. Also, societies change and fail; for the long-term usefulness of this book would this space have been better served with another key reference?

Still these are minor distractions really. The key question is whether I would recommend that people purchase the book. To that I would say a resounding '**yes**'! At \$20-00 – with a 10% discount if you are a member of any New Zealand botanical society, or 25% if you are buying 10 copies or more – the book won't burn holes in your wallet. As a guide it is certainly more portable than the very useful, but much larger and also now out of print, *New Zealand lichen checklist, key and glossary* by Malcolm & Galloway (1997). Allison Knight has certainly done well to bring the world of New Zealand lichens into your back pack and at much less expense than the average Kiwi spends on their weekly Lotto tickets! For the beginner lichenologist – who is otherwise faced with working out lichens by first purchasing a microscope, then using chemicals, before being faced with DNA extractions and reading sequence data, and then finally exercising considerable patience, as inevitably the specimens need to be sent elsewhere around the world for expert attention – Allison's helpful tips, enthusiasm for the subject and exquisite images provide some welcome relief.

¹Lichens are lichenized fungi and not plants, so strictly speaking they are part of our indigenous mycobiota and not our flora. However, the convention of the New Zealand Flora series has been to include lichens within it, hence my usage of 'Flora'.

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