

NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 124

June 2016



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 2016 ordinary and institutional subscriptions are \$25 (reduced to \$18 if paid by the due date on the subscription invoice). The 2016 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 September 2016 issue is 25 August 2016.

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

Euchiton audax drawn by Eleanor Burton.

NEW ZEALAND BOTANICAL SOCIETY
NEWSLETTER
NUMBER 124 June 2016

ISSN 0112-6865 (Print) 2230-3502 (Online)

CONTENTS

News

New Zealand Botanical Society News

Call for Nominations for Allan Mere Award 2016..... 2

Regional Botanical Society News

Auckland Botanical Society 2

Rotorua Botanical Society 3

Wanganui Museum Botanical Group..... 4

Wellington Botanical Society 4

Nelson Botanical Society..... 8

Other Botanical Societies 11

Announcements

John Child Bryophyte and Lichen Workshop..... 11

2016 Assessment of the Conservation Status of Indigenous Vascular Plants 11

Notes and Reports

The special copies of Kirk's *Forest Flora*..... 12

New Zealand adventive *Nephrolepis* spp. Another ladder fern 14

Biography/Bibliography

Biographical Sketch – James Murray (1923-1961) 16

Publications

Publications received..... 18

NEWS

New Zealand Botanical Society News

▪ Call for Nominations for Allan Mere Award 2016

Nominations meeting the following conditions are invited for the award of the Allan Mere for the year 2016.

Conditions of the Allan Mere Award

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.

The Award shall be administered by the New Zealand Botanical Society.

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 be signed by nominator and seconder, and accompanied by supporting information that must not exceed one A4 page.

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.

If, in the opinion of the Committee, no suitable nomination is received in any particular year, the Committee may refrain from making an award.

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.

The recipient shall receive an appropriately inscribed certificate.

Nominations should be forwarded by 30 July 2016 to:

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

Regional Botanical Society News

▪ Auckland Botanical Society

AGM

At the AGM Ewen Cameron was again elected President. It was a "no show" for the Lucy Cranwell Award recipient, so Ewen filled in with an interesting overview of the culture and botany of Sicily.

March Field Trip

This field trip to the Awhitu Peninsula included visits to two steep gullies at the Manukau Heads and also to the lighthouse. "Robinson's Gully" is the site of the first Auckland record for the large thalloid liverwort, *Dumortiera hirsuta*. Another highlight here was the large *Metrosideros perforata*, a tree in its own right. We next visited the lighthouse and had grand views across to the Waitakere Ranges and Whatapu Sands, both sites of many Bot Soc field trips. The second gully features good stands of *Lophomyrtus obcordata* and we observed many wind-battered specimens. Several were fruiting heavily and will provide a good source of seeds for the seed bank. Another highlight here was *Mentha cunninghamii* in flower mingling with the blue of *Wahlenbergia violacea*.

April Meeting

For Plant of the Month Holly Cox begged leave to pluralise to “Plants”, and spoke of several plants that are nuisances elsewhere, and for which Auckland Council staff are keeping an eye open. Robyn Simcock then illustrated the results of a research programme that involved assessing plants that are suitable to use on “living roofs”, plants that are resilient to the tough conditions of a shallow substrate in exposed conditions.

April Field Trip

Our group of 22 walked the Wairoa Loop track on the southern side of the Wairoa Dam in the Hunua ranges. It was a leisurely walk with a stop for lunch at the lookout over the dam and an easy walk down the valley to the carpark. The forest was colourful with *Metrosideros fulgens* flowering profusely in the tops of the trees and along the tracksides. Also notable were the large old miro trees (*Prumnopitys ferrugineus*) towering above the forest and fruiting abundantly with their red fruits littering the ground. Other trees of note were a large old rata (*Metrosideros robusta*), kawaka (*Libocedrus plumosa*) and numerous fruiting specimens of *Alseuosmia quercifolia* with their brilliant red fruits. King fern (*Ptisana salicina*) and umbrella fern (*Sticherus cunninghamii*) were also noted. Many plants were fruiting at this time and with colourful fungi such as red waxgill (*Hygrocybe* sp.) and orange pore conch (*Favolaschia calocera*) to brighten dark corners, and numerous epiphytes, there was plenty to see.

May Meeting

Sarah Flynn spoke of her love of the tree fuchsia for Plant of the Month, and outlined her experiments with the natural seed bank. Bruce Burn’s subject, “Auckland urban grasslands” introduced recent research on the biodiversity of some Auckland grasslands, with a view to making these places more botanically interesting while reducing management costs. While Waikumete Cemetery is certainly an interesting grassland that requires a lot less management than most, soil analysis showed that it would be difficult to emulate the infertility of the gumland soils there.

May Field Trip

In spite of a poor weather forecast, nine people braved the conditions on the Whatipu Sands. This area of mobile dunes has been monitored for 30 years by Ewen Cameron and the Auckland Botanical Society. On damp sands beside the Pararaha Stream were seen those tiny turf plants that favour such sites – *Limosella lineata*, *Triglochin striata*, *Eleocharis neozelandica*, *Lilaeopsis novae-zelandiae* and *Myriophyllum votschii*. After wandering over dunes and slacks the wind and the rain finally drove people back to the warmth of their cars.

FUTURE EVENTS

18 June	Waimauku, private bush & Kerr Taylor Reserve
6 July	Brenda Osborne & Jonathan Boow, “Ecosystems Guide”
16 July	Oratia
3 August	Lucy Cranwell Lecture, Heidi Meudt, “Systematic revision of the NZ forget-me-nots”
20 August	Gittos Domain, Blockhouse Bay
7 September	Alison Wesley, “Madagascar”

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

President: Ewen Cameron

Secretary: Vijay Soma

aucklandbotanicalsociety@gmail.com

▪ **Rotorua Botanical Society**

March - Whakaumu (Military) Track

The Wakaumu Track is a mountain bike track under development that follows part an old military track established in the 1860's, one of several in the district from that era. A forest road provided access to a point near the head of the Mangakirikiri Stream. The grade was very easy often with high banks and cuttings from the original construction. The forest had been heavily modified by logging, perhaps 50 years ago, providing a very varied vegetation.

The gullies contain tall old rimu and pukatea standing out over tawa, nikau, kohekohe and tree ferns while the ridges had kamahi, rewarewa, tanekaha, hinau, kanuka and hard beech. Much of the track was newly cleared and weeds rare but as we progressed further from the road and pine plantation, plants of mature forest such as *Quintinia serrata* and *Dracophyllum latifolium* appeared along with *Sticherus cunninghamii*. In one area of hard beech forest *Coprosma spatulata* was quite abundant and on a shaded bank *Trichomanes elongatum* appeared as expected. Highlights included *Pterostylis trullifolia* coming into leaf, and *Metrosideros fulgens* in flower. The odd rimu was heavily laden with epiphytes including *Phlegmariurus varius* nearly 2 m long and masses of *Astelia hastata*. Too soon we had to turn around and retreat to the vehicles only scarcely a km away.

May - Whakaipo Bay to Kinloch

A small group battled its way from Whakaipo Bay along the mountain bike track towards Kinloch, being blitzed periodically by frantic bikers. After an initial steep climb partly through pasture and regenerating forest, the track wound its way across the slope climbing in steps to the plateau of Te Tuhi Point. The route was through young regenerating forest dominated by kanuka, mahoe, mamaku, black matipo and rewarewa. On the drier corners the canopy was lower and mingimingi and kanuka dominated with unusual plants such as *Dracophyllum strictum*, akeake, and near the top, lots of *Acinthus sinclairii* and *Pterostylis alobula* in flower and scattered *Pimelea tomentosa*. The wetter gullies revealed a variety of ferns such as *Diplazium australe* and *Leptolepia novae-zealandiae*. Old slip gullies contained a mass of inkweed and other herbs and often tall poroporo.

A brief detour to a lookout provided good views of Kinloch and low scrub with *Pomaderris amoena*, *Wahlenbergia violacea* and seedlings of *Pinus pinaster* and *P. radiata* which had been felled nearby. The 9 km return turned up a few new plants were seen, the most interesting of which was a solitary ngaio with suggestions (debated and largely refuted) that it had been planted. Also a search of the numerous poroporo although providing numerous fruit found no flowers. The fruit suggested it was *Solanum lacciniatum* although some leaves suggested the narrow-leaved form of *S. aviculare* was present. Only a summer trip when flowers are present will sort that out.

FUTURE EVENTS

June 12 Ruahine Springs Geothermal Areas, Tikitere
July 2 Waikato River margins and Wairakei (Huka Falls Area)
August 7 Arahiwi Scenic Reserve Mamaku
September 3 Lake Arapuni, Waikato River

President: Paul Cashmore 027 650 7264 pcashmore@doc.govt.nz

Secretary: Elizabeth Miller (07) 343 5013 rotoruabotanicalsociety@gmail.com

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

■ Wanganui Museum Botanical Group

FUTURE EVENTS

July 5 Talk on African mopane worm by Peter Frost
September 3 Trip to Kitchener Park, Feilding
September 6 Talk on battle for our birds by Bill Fleury
October 4 Talk on plants seen in Spain, Austria, Germany and the Netherlands by Colin Ogle.
December 3 Trip to Paengaroa Scenic Reserve, Mataroa

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

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

■ Wellington Botanical Society

January Summer Trip – Western Waikato

Te Kauri Scenic Reserve

Highlights of the bush circuit were the orchids, the star being *Orthoceras novae-zeelandiae*. We compared *Lycopodium deuterodensum* and *L. cerna* side by side. We saw *Astelia trinervia*, new to

many of us, and *Lygodium articulatum*, hanging through the lower canopy of predominantly tanekaha (*Phyllocladus trichomanoides*). Lichenologist, Allison Knight, showed some of us her lichenicolous fungus, *Biatoropsis usnearum*, a brilliant red, grain-of-salt-sized gem. The climb at Devlin's Track took us among limestone outcrops with many perching *Peperomia urvilleana*, spectacular *Rabdothamnus solandri* tucked underneath, and patches of *Mida salicifolia* around every corner.

Walter Scott Private Scenic Reserve

We spent six hours botanising this 43-ha lowland forest, owned by Forest & Bird, which was dominated by tawa, some podocarps and nīkau. The area was probably logged in the early days. There were very few weeds within the forest, compared with other reserves in the area. Some limited planting had obviously been done but only of native plants. King fern/para (*Ptisana sinclairii*) is regenerating here. Some at the footbridge at the far end of the reserve appeared to be planted, and were not fertile. Towards the end of the day we found one mature plant in a gully, and around it growing numerous youngsters. This was a highlight of this trip. Our botanizing of the reserve added some twenty species. Notable species were the three patches of giant moss/pāhau-kākāpō (*Dawsonia superba*) a single basket-fungus/tutae-kehua (*Ileodictyon cibarium*), and one *Drymoanthus adversus*.

Mahaukura Track, Mt Pirongia

The lower forest is dominated by stands of tall trees—mainly *Knightia excelsa*, *Beilschmiedia tawa*, *Litsea calicaris*, *Phyllocladus trichomanoides* and *Dysoxylum spectabile*, with the occasional emergent *Dacrydium cupressinum*. The understorey has many *Genistoma ligustrifolium* var. *ligustrifolium*, and the sprawling *Alseuosmia macrophylla*, which varies greatly in leaf size and shape. Some plants had entire margins, and some had deep serrations, but none looked different enough to attempt to identify it as the oak-leaved *Alseuosmia quercifolia*. It has been a good year for flowering, so the plants had many fruits; in areas where it had more light, the fruits glowed bright red.

Tall *Cyathea medullaris* were a feature. There were also the lacy *Cyathea cunninghamii*, with their narrow trunks. As we climbed there were increasing numbers of *Quintinia serrata* and *Ixerba brexioides*, some in flower. *Coprosma aborea* was present as an attractive small tree with the reddish undersides of the leaves giving a different colour to the canopy. The fern *Microsorium novae-zealandiae* was recognised by rhizomes that were totally covered in scales, and that did not reach the ground. It was great to see *Hymenophyllum bivalve* on a tree—a fern rarely seen this far north.

Ally, our lichen expert, had asked us all to look out for the Data- Deficient *Dibaeis absoluta*, with flat green body and flesh-pink apothecia that lack stalks. There were cries of joy when she discovered it, and went on to find two more patches. Nearing the first knoll, we saw the very photogenic *Dracophyllum traversii*, with great spikes of terminal flowers. On the knoll we saw *Raoulia glabra*, an unexpected find so high on the mountain, and, surprisingly, a small *Orthoceras novae-zealandiae* in flower. This orchid is usually a lowland plant.

After the knoll the track became very rough, so most of us retreated at this point. Those who went on were rewarded with *Lycopodium fastigiatum* and *L. scariosum*. Some of the party went on from here to Mt Pirongia's summit, 959 m. The state of the forest seemed to be good, with palatable plants such as toropapa sprawling everywhere.

Kauri Grove Track, Te Kauri Scenic Reserve

The main purpose of this track, starting c. 1 km SE from Te Kauri Lodge on SH31, is to lead people to the area's largest stand of the southernmost naturally occurring kauri. Along the fence line, the vegetation, coated with pine needles, comprised several dry-tolerant fern species, mingimingi, profuse pigeonwood seedlings, *Litsea calicaris*, a few *Cordyline banksii*, *Astelia solandri* and *Quintinia serrata*, with an emergent smattering of *Phyllocladus trichomanoides*, rewarewa, occasional Hall's tōtara and rimu. Nestled among the numerous exotic intrusions were indigenous herbs, e.g., *Pterostylis banksia*, a *Ranunculus* sp. and a *Lobelia* sp. We had many discussions, including one about *Polystichum neozelandicum* and *P. wawranum*.

Once the track left the fence line, the conditions became wetter and cooler. After a few slithery metres down, we saw numerous young kauri, the plants getting larger until we reached a group of fair-sized trees surrounding an information board. We saw two large trees of up to 1 m d.b.h. on the west side of the spur. The trees were mostly in good condition, sporting healthy, flaking bark, and very little

lichen. Accompanying them were *Astelia trinerva*, *Gahnia paucifolia* and *G. setifolia*. Four species of *Hymenophyllum*, *Drymoanthus adversus* and *Ichthyostomum pygmaeum* were spotted, mostly on rewarewa. We reached the stream, where numerous *Cyathea smithii*, young pukatea, nīkau and parataniwha graced the stream banks.

Upper Tawarau Gorge

"The largest continuous tract of native forest remaining on limestone topography in the North Island" (Flora and Vegetation of parts of Tawarau Forest, Western King Country. Ogle, CC and Druce, AP. *Wellington Botanical Society Bulletin*, (43) April 1987 pp 13–26.)

We drove through Otorohanga, along Marakopa Rd, and then tiny Apple Tree Rd to the car park. On Apple Tree Rd, we saw spectacular examples of heavily flowering *Olearia cheesemaniae*, and the site of the 'frost hollow' recalled by BotSoc members who were on the 1984 Botanical Survey, described by Ogle and Druce's article, quoted above. The frost hollow is long gone, mainly because of invasions (or plantings?) of Tasmanian blackwood (*Acacia melanoxylon*).

Near the cars we had our first question, over two 'grassy-looking plants'. The consensus was *Carex banksiana* and *C. horizontalis*, and it was an opportunity to repeat the old tip: "Sedges have edges, rushes are round, and grasses have joints right down to the ground". We noticed that the *Pittosporum tenuifolium* had much larger leaves than we see in Wellington. Someone spotted minute flowers on *Raukaua anomalus*, we admired a grand *Cordyline indivisa*, and on our return saw five *Gastrodia minor* growing close together.

We walked down to the river, enjoying the blankets of *Leptopteris superba*, and through a majestic grove of very large and very old *Nestegis montana*. Below them we saw the small rengarenga, *Arthropodium candidum*. The track follows the river downstream, often with a limestone wall close on the right, providing opportunities for eye-level botanising. Among the plants on this stretch of the track were *Myosotis*, *Corybas*, parataniwha (*Elatostema rugosa*), *Blechnum colensoi*, many species of *Hymenophyllum*, and various mosses, liverworts and algae. The loop provided an opportunity to marvel over a very deep and narrow slot in the bank of the river, carved by a stream, which entered the river in a waterfall. Botanically it was similar to the morning's track, with the additions of three *Senecio*, *Griselinia littoralis*, *Gunnera monroi*, *Polystichum wawranum* and *Pseudognaphalium trinerva*, among others. We made seventeen additions to the existing list.

Marokopa Natural Tunnel Scenic Reserve

The streamside and limestone cliff vegetation on the farm side of the tunnel kept us busy for some time. This was mostly forest-margin plants, with pasture grasses underfoot. The more unusual plants included the limestone obligate, *Asplenium cimmericium*. In the North Island this is known only from cave entrances and limestone areas in the Waitomo area, and is more common in the western South Island. *Clematis quadribacteolata*, at or near its northern limit for the west coast, also caught our eye. We also saw *Clematis forsteri*. A scramble over old rock falls led us to the tunnel entrance proper where we saw *Asplenium lyallii*. The tunnel itself is spectacular – arching high overhead like an enormous cathedral, with glow-worms on the ceiling in the darker sections.

After the (mostly) easy walk along the wide streambed through the tunnel we emerged into a different world - a mature, although milled, lowland forest, with many tree ferns on the valley floor and thick undergrowth. In places the ground was carpeted with liverworts. The abundance of *Pseudopanax arboreus* and *Schefflera digitata* was a good indication of low possum numbers. Some of us followed the stream to its junction with the Marakopa River and found a few list additions including *Hymenophyllum rarum*. Flowering *Rhabdothamnus solandri* was a feature around both entrances to the tunnel, and included some varieties with very beautiful dark red flowers.

Rakaunui Scenic Reserve

This was a rewarding two-hour foray into a 10-ha forest remnant on the edge of Kawhia Harbour's estuary. From the entrance we had to slide down the hillside within the bush to the water's edge on beds of fronds from the sub-canopy of mainly *Dicksonia squarrosa* and *D. fibrosa* that were covered with unusual amounts of *Microsorium scandens* and *Metrosideros diffusa*. Alongside us were protruding limestone outcrops pocketed with *Peperomia urvilleana*. The forest canopy included *Alectryon excelsus* subsp. *excelsus*, along with *Litsea calicaris*, *Podocarpus totara* and *P. laetus*, and some *Hoheria sexstylosa*, tawa, pūriri and pukatea. Further back there were very tall kahikatea and

Rhopalostylis sapida. Over the tidal edge leaned large *Sophora chathamica* and many *Pseudopanax arboreus*. *Calystegia tuguriorum* and *Clematis paniculata* spread themselves through the estuarine vegetation nearby that was dominated by *Bolboschoenus fluviatilis* with *Typha orientalis* and *Apodasmia similis*. At the edge were *Carex virgata*, *Cyperus ustulatus*, and lots of *Blechnum fluviatile* amid a mixture of shrubby species including *Veronica stricta* var. *stricta*, *Leucopogon fasciculatus*, *Piper excelsum* subsp. *excelsum*, *Coprosma rhamnoides* and *C. propinqua* var. *propinqua*.

There were the calls of many native birds, including the North Island fernbird, a feature not noted in the forests we have been in up until now. Evidence of previous human disturbance on the flatter areas was marked by the revelation of a midden. We aimed for the top of the reserve up steep forest-floor slopes dotted with *Stellaria media*, and between limestone outcrops resplendent in ferns including *Pellaea rotundifolia*, another species not seen in other reserves we visited.

5 March 2016: Tupoki Takarangi Trust, Wainuiomata Coast Rd

This long but narrow strip of land (c. 177 ha) covers a wide range of ecosystems north of the Baring Head section of East Harbour Regional Park. The block is not open to the public without the Trust's permission. It runs east from Fitzroy Bay across a coastal platform uplifted by earthquakes, up a very steep coastal escarpment, across the marine terrace, down the inland escarpment and across the Wainuiomata River flats (including the river and an oxbow) to Coast Road.

We walked up a spur south of the gully that we botanised last year. On the marine terrace Pat Enright showed us *Juncus distegis*, a rush new to most of us, although according to NZPCN's web site, it is widespread but local in its occurrence. Several species of rushes and sedges gave us the opportunity to learn a few more. There was much discussion about a bunch of *Carex*, which were identified as *Carex testacea*, *C. raoulii* and/or *C. "raotest"*. Pat has now confirmed them as all *C. "raotest"* which differs from *C. raoulii* by all its terminal spikelets being male. The bush in this block is relatively diverse, considering its grazing history. Of note was a wonderfully shaped *Streblus heterophyllus* near the head of the gully, numerous *Pseudopanax crassifolius*, and *Clematis forsteri* in seed.

We scrambled along and down the steep coastal escarpment on the lookout for species, which have been found on adjacent Baring Head's scarps. Although we did not find matagouri, *Brachyglottis greyii* or *Clematis afoliata*, they may be present as we did not cover the entire escarpment. Unpalatable species, such as *Olearia solandri*, *Coprosma propinqua* var. *propinqua*, and *Melicytus crassifolius*, were abundant. We saw a tangled mass of *Rubus schmidelioides* and *R. squarrosus* near the bottom of the escarpment. Beyond it we found remnants of a stone wall which had previously protected gardens, and an area rooted by pigs. The rooted area was an old fire site and was near a grove of old karaka. A huge *Melicytus crassifolius*, although severely grazed by sheep, is still dense enough to provide habitat for native lizards.

Although we saw few cattle, they are damaging the wetlands, and tracking through the bush, opening up light-wells for invasive pest plants. Horses may also be grazed occasionally, as we saw manure on the coastal edge. The land would benefit immensely from allowing the block to be grazed only by sheep, as they would not enter wetland, unlike cattle, and they are not usually keen to enter thick bush. The high value areas could be fenced off from stock, or the number of sheep reduced, to allow regeneration of the bush areas.

25–27 March 2016: North Wairarapa

Kōwhainui QEII Trust Open Space Covenant, Mauriceville

In a tributary of the Kopuaranga River, the forest is a remnant of '90-Mile Bush', a once-vast area of native forest covering northern Wairarapa and southern Hawke's Bay, most of which was cleared for farming in the 1800s. Once in the gully, we were first impressed by the abundance of *Blechnum colensoi*. We saw numerous tawa seedlings, but few saplings or young trees of the canopy species, probably because the covenant fence is not designed to exclude goats. Our party saw four goats in the bush. Later, up on the true left, we found a big *Nestegis cunninghamii*, and a massive, female kahikatea, in fruit. We admired *Hoheria sexstylosa* in full bloom, and about 41 fern species. These included *Botrychium biforme*, *Diplazium australe*, *Leptolepia novae-zelandiae* and *Tmesipteris elongata*.

Mount Bruce Forest (Tararua Forest Park)

From the end of Mount Munro Rd, Mauriceville, we used the at-first unmarked legal access across

farmland, then climbed a farm track over pasture to the forest boundary. The fence should be designed to exclude stock and feral goats, but it is not. Numerous pest-control lines cross the track, part of the impressive efforts to control pest animals in the forest, and we saw a Timms trap, ingeniously-boxed to exclude kiwi. Weed species require control also. We saw tutsan, elderberry, barberry, and Himalayan honeysuckle, and near the farmland, old man's beard and ragwort.

Botanical highlights included five podocarps kahikatea, rimu, tōtara, miro and mataī, *Alseuosmia pusilla*, *Coprosma rigida*, and the filmy ferns *Hymenophyllum demissum*, *H. flabellatum*, *H. revolutum* and *H. sanguinolentum*. Seedlings of rewarewa, tawa and tītoki are common, suggesting that rodent control is effective. This must be maintained to ensure the eventual replacement of the understorey, canopy and emergent tiers, missing as result of many decades of seed-predation by rodents. Finally, a skink, merely 40 mm long, slithered off someone's palm, into the trackside vegetation.

Rewanui Forest Park.

Native lowland forest, which makes up about half the 334-hectare property, is fenced from the remaining grassland and exotic trees. Unlike areas we had visited the previous two days, this forest has been well-trapped and fenced. Hence there is a good understorey, and plenty of possum fodder such as *Schefflera digitata*. The Montfort Trimble Foundation is developing Rewanui as a forest park, and as a trial site for native and exotic timber trees. Besides the area of native forest, they have small stands of eleven species including kauri, red beech, silver beech and pūriri. We spent 3.5 hours botanising the low level Tōtara Loop track. There are some very good examples of tōtara, with plenty of rewarewa and mataī. More exciting was the tiny *Myosotis spathulata* that Pat pointed out, and *Fuchsia perscandens*, which is common on the lower track, but uncommon in Wairarapa. We added *Corynocarpus laevigatus*, *Hymenophyllum sanguinolentum* and *Metrosideros perforata* to the substantial plant list of the forest area

FUTURE EVENTS

- June 20 Talk on Mangere Island by Robyn Smith.
July 2 Orongorongo Track. Leaders: Ian & Jill Goodwin 475 7248
July 18 Talk on what limits recruitment of *Muehlenbeckia astonii* by Debra Wotton.
July 23 Te Mārua workbee. Co-leaders: Glennis Sheppard 526 7450, Sue Millar 526 7440.
August 6 Silversky Track, Crofton Downs. Leaders: Chris Moore 479 3924, Chris Horne 475 7025, Barbara Mitcalfe 475 7149
August 15 AGM and talk on a Drucean approach to the woody flora of NZ by Matt McGlone.
September 3 Tawhai St Reserve – Horoeka St Reserve loop, Stokes Valley. Leader: Michele Dickson 972 2350.
September 19 Talk on lichens, mosses, liverworts and lichens by Rodney Lewington, Carol West and Peter Beveridge.
October 1 Otari-Wilton's Bush lichens, mosses, liverworts and lichens. Leaders: Rodney Lewington, Carol West and Peter Beveridge

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

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

■ Nelson Botanical Society

January Field Trip: Hanmer Springs

Amuri Ski Field, Mt. St Patrick, 31 January

We were fortunate in being able to drive up the road to the skifield and were soon drawn to tall *Aciphylla aurea* and *A. colensoi* flower-heads. The yellow flowered *Dolichoglottis lyallii* was putting on a lovely display and close by was the cream flowered *D. scorzoneroideis* x *D. lyallii*. We studied *Acaena fissistipula*, *A. saccaticupula*, *A. profundeincisa* and *A. glabra*. As we climbed higher we saw *Ourisia caespitosa* and *Parahebe decora* in flower and *Schizeilema pallidum*. Hidden under some *Dracophyllum rosmarinifolium* we uncovered *Pterostylis humilis*. Flowering throughout the herbfield was *Gentianella corymbifera* and *Hebe lycopodioides*. On an area of flat scree we examined a patch of *Ophioglossum coriaceum* and later found a few *Myosotis* "australis yellow" and *Stellaria gracilentia*. *Hebe epacridea* and *H. pinguifolia* were widespread. *Epilobium crassum* was common and *Myosotis drucei* had just finished flowering. Further up there were cushions of *Raoulia bryoides* and *R. apicinigra* was also common. On scree near the summit were *Leptinella dendyi* and *L. pectinata* ssp.

pectinata. On the way down we identified *Heliohebe raoulii* and the last find of the day was the Marlborough endemic *Aciphylla* "Mt St Patrick" flowering in a creek.

We headed up the Jacks Pass Road to the flats, which appeared as an area of dry, river terraces with *Chionochoa rubra* subsp. *rubra*. However, closer inspection revealed a host of small gems such as: *Craspedia incana*, *Muehlenbeckia axillaris*, *Raoulia subsericea*, *Pentachondra pumila*, *Acrothamnus colensoi*, *Leucopogon fraseri*, *L. nanum*, *Celmisia spectabilis* *C. durietzii*, *C. gracilentia* and *Coprosma petriei*. *Acaena inermis* with its red, barbless spines was also seen. In the shade of a rock were *Coprosma propinqua*, *Thelymitra longifolia* and an un-named *Melicytus*. We were interested in the *Utricularia dichotoma* growing in a swampy area and on a bare land with "frost creep" were *Raoulia grandiflora* and *Montia calycina*. In a wetland we saw *Celmisia* "rhizomatous", cushions of *Oreobolus pectinatus*, *Gonocarpus micranthus*, the narrow-leaved *Euchiton lateralis*, *Schoenus pauciflorus*, *Myriophyllum propinquum*, *Chaerophyllum colensoi*, *Ranunculus macropus* and *Potamogeton cheesemanii*. On a higher level were *Ozothamnus vauvilliersii*, *Olearia cymbifolia* and *Drosera arcturi*. *Centrolepis ciliata*, *Epilobium brunnescens*, *E. komarovianum* and *E. chionanthum* abounded.



Raoulia subsericea at Edwards River Flats, near Hanmer. Photo Beryce Vincenzi



The ultramafic endemic *Gentianella stellata*, seen on the trips to Whispering Falls and near the Rush Pools. Photo Uta Purcell

March Field Trip: Whispering Falls

Thirteen members assembled at the carpark and headed upstream to the mineral belt. We soon found plants specific to this area: a patch of a mottle-leaved *Geranium*, which looked similar to *G. microphyllum*, then *Melicytus* aff. *alpinus*, *Carex devia*, *Pimelea suteri* and *Gentianella stellata* flowering prolifically. The flowering *Olearia serpentina* and *Corokia cotoneaster* with orange and yellow fruit were resplendent. We discovered *Wahlenbergia albomarginata* subsp. *olivina* with its pale blue flowers, then *Asplenium trichomanes* perching on a rock. We had *Podocarpus acutifolius* and *P. laetus* in close proximity and probably a hybrid. As we climbed up to the Whispering Falls *Craspedia* "Hackett limestone" had remnant seed heads, then *Metrosideros colensoi* hanging as a curtain over the incredible limestone formations. There were patches of *Hymenophyllum flexuosum* and *Adiantum cunninghamii* was plentiful. The green mistletoe *Ileostylus micranthus* was found above the falls.

Post Easter Camp: Cape Campbell

Day 1

On the edge of the beach we saw common shoreline species such as the introduced *Beta vulgaris* and *Glaucium flavum*, as well as *Chenopodium*

triandrum, *Atriplex prostrata* and *Samolus repens*. More exciting were good numbers of *Eryngium vesiculosum*. Later, we climbed up the grassy banks and made our way through *Olearia solandri* and *Ozothamnus leptophyllus*. Near the lighthouse we were rewarded by seeing *Plantago spathulata*, *Pimelea prostrata* and *Microseris scapigera* in flower. Later *Convolvulus waitaha* was spied with its delicate white flowers and *Senecio* aff. *glaucophyllus* "Cape Campbell" was spotted along with *Vittadinia australis*, *Linum monogynum* and *Anthosachne sacandros*. An interesting sight was specimens of *Coprosma propinqua*, each with a different colour of fruit, one blue, one white and one yellow. Later we went to Canterbury Gully where our first finds were *Austroderia richardii* and *Schoenoplectus pungens*, then *Carex pumila*, *Coprosma acerosa*, *Raoulia* aff. *hookeri* "coast" and *Poa billardiarei*. At low levels we found prostrate *Discaria toumatou* and upslope we found a large population of *Carmichaelia australis*.

Day 2

Sunday was spent near Marfells Beach Camp. We followed a narrow gully through papa inland from the camp, where the main objective was to find the nationally endangered, *Senecio hauwai* which proved easy to find. Also noted were *Selliera radicans* and *Samolus repens* var. *repens*. We then walked along the beach to a population of *Carmichaelia muritai*, which DOC planted about 20 years ago. The plants were doing well, particularly where they were sheltered by *Coprosma propinqua* and *Ozothamnus leptophyllus*. Further along we climbed up on to a papa slump and found another local endemic, *Craspedia* "Marfells" growing under some shrubs. Also found were *Euchiton traversii*, *E. audax* and *Carex flagellifera*. We ended the day to the northwest of Marfells Beach, where we saw *Carex pumila* and *Plagianthus divaricatus* beside a small lake.

April Field Trip: Rush Pools and Argillite Quarry

Twelve members enjoyed an autumn day botanising through pine forest, native bush and then ultramafic vegetation. In the first half-hour through the pines we spotted *Asplenium flabellifolium*, *Blechnum discolor*, *B. fluviatile*, *B. novae-zelandiae*, *Histiopteris incisa*, *Aristotelia serrata*, *Carpodetus serratus*, *Coprosma foetidissima*, *C. grandifolia*, *C. rhamnoides*, *Cyathea dealbata*, *C. medullaris*, *C. smithii*, *Dicksonia squarrosa*, *Leptospermum scoparium* and *Kunzea ericoides*. We noticed *Hebe leiophylla*, *Aristotelia fruticosa*, *Coprosma propinqua* and *C. dumosa*. Crossing into the mineral belt was obvious by the vegetation change and we soon found some special plants for the area: *Astelia graminea* var. "serpentine", *Olearia serpentina*, *Carex devia* and *Brachyglottis* "Richmond". Also found were *Helichrysum lanceolatum*, *Gonocarpus incanus*, *Leptecophylla juniperina*, *Ozothamnus vauvilliersii*, *Pittosporum divaricatum* and *Melicytus* aff. *alpinus*. Lower to the ground were flowering specimens of *Pimelea suteri*, *Wahlenbergia albomarginata* ssp. *olivina*, and *Gentianella stellata*. On the way down we saw many *Korthalsella salicornioides* perched on branches of manuka.

April AGM & Talk: "20 years of botanising in South Marlborough" - Cathy Jones

In 1996 Cathy moved to Nelson DOC, where her area included from the Richmond Range to the Seaward Kaikouras, the Clarence River to the west then northeast to Rarangi. The challenge was how to manage the 200 species of threatened plants - firstly she and her team had to find the plants, identify threats, and then control the threats to manage the population for recovery, and finally maintain the population. She described the Sedgemere ephemeral tarn with its turf communities as a particularly important site. Plants of note in the tarn are *Craspedia* "tarn", *Cardamine* "tarn", *Chaerophyllum colensoi* var. *delicatum*, *Pseudognaphalium ephemereum*, *Myosotis brevis*, *Isolepis basilaris*, *Lobelia ionantha* and *Epilobium angustum*. There was a huge problem with *Carex ovalis*, rabbits and hares and they resorted to mowing the *Carex ovalis* seed heads, raking and removing them, then controlling it by weed-wand spraying. It took 8 years for the tarn to be 'turned around'.

Other areas mentioned with their own suite of plants included the Chalk Range with *Myosotis colensoi* and *Gentianella astonii* subsp. *arduana*, along with *Pachycladon fasciarium*. Goats have been a major problem so cages were installed over seedlings only to discover that the zinc in the galvanising was affecting the plants and then stainless steel mesh had to be used. The Waima River also has special limestone species including *Wahlenbergia matthewsii* and *Senecio* aff. *glaucophyllus* "South Marlborough limestone". Cathy also covered Limestone Hill in the Clarence Reserve where *Gingidia* aff. *enysii* "Clarence", *Brachyglottis haastii*, *Pimelea traversii* subsp. *borea* and *Gentianella astonii* subsp. *astonii* grow.

FUTURE EVENTS

- June 19 Pelorus River. Contact: Penny Palmer, 03 5391329
June 20 Talk by Leon Perrie: "On tales of Pacific fern exploration".
July 17 Adele Island. Contact: Helen Lindsay 03 5284020
July 18 Talk by Shannel Courtney: "Coastal Peppercross - a species on the edge".
August 21 Eves/Snowden/Faulkners Bush. Contact: Uta Purcell, 03 5450280
August 22 Talk by Leigh Marshall: "Nelson Nature".
Sept. 18 Wairoa weed busting, Wairoa Gorge. Shannel Courtney, 03 5469922
Sept. 19 Talk by Brian Patrick: "Lepidoptera and plant interaction".

President: David Grinsted, 03 5424384

Secretary: Don Pittham, 03 5451985, pitthamd@xtra.co.nz

Treasurer: Uta Purcell, 03 5450280, 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 Amoore 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

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/bsoc/

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

ANNOUNCEMENTS

■ John Child Bryophyte and Lichen Workshop

Interested in mosses, liverworts, and lichens? Then you might be interested in coming to the John Child Bryophyte and Lichen Workshop, an annual workshop focussing on these often overlooked miniature plants. This year the workshop will be held at Coroglen on the Coromandel Peninsula in early December. We welcome people of all ages and backgrounds, and there is always someone willing to teach newcomers about the lifecycles, habitats, and identification of these awesome little plants. If you are interested in coming along and learning more about the tiny plants of the forest, contact Betina at fleming.betina@gmail.com for details.

■ 2016 Assessment of the Conservation Status of Indigenous Vascular Plants

Notice is hereby given that the conservation status of indigenous vascular plants will be reassessed at

the Landcare Research / Manaaki Whenua Campus, Lincoln, Canterbury in August 2016.

The 2016 assessment will replace the 2012 indigenous vascular plant conservation status report (de Lange et al. 2013). For a PDF (792 Kb) of the 2012 assessments go to www.doc.govt.nz/Documents/science-and-technical/nztcs3entire.pdf

Submissions are welcomed that provide information to assist the panel in making its assessments. Information on how to make a submission is available on the DOC website.

Submissions close 31 July 2016.

As three of the past threat listing panel (Prof. David Norton, Dr Peter Heenan and Mr Ewen Cameron) have elected to stand down, a new panel has been proposed and approved by the Department of Conservation. The new panel comprises Dr Peter J. de Lange (Chair, Department of Conservation), Dr Leon Perrie (Museum of New Zealand Te Papa Tongarewa), Ms Sarah Beadel (President, New Zealand Plant Conservation Network), Mr Paul Champion (NIWA), Dr Ilse Breitwieser (Landcare Research Ltd), Dr Ines Schönberger (Landcare Research Ltd), Ms Kerry Ford (Landcare Research Ltd), Mr Shannel Courtney (Department of Conservation), Mr John Barkla (Department of Conservation) and Mr Jeremy Rolfe (Facilitator, Department of Conservation).

NOTES AND REPORTS

■ The special copies of Kirk's *Forest Flora*

Bev Abbott, Wellington Botanical Society,
bevabbott@xtra.co.nz

When Thomas Kirk's *The Forest Flora of New Zealand* was published in 1889, readers valued its wealth of local knowledge and references, the sort of information that could never be prepared by non-resident botanists on short visits to New Zealand (Moore, 1973). It included descriptions of 108 species of trees and shrubs, and 159 full-page plates that had been prepared by about eight illustrators (Sampson, 1985).

Two thousand foolscap copies and 300 demy folio copies were printed. But there were also some special copies. A.G. Bagnall noted in the entry about Kirk's *Forest Flora* in Volume 2 of the New Zealand National Bibliography that "There are interesting special copies, at least one with colour plates (WTu)."

The 'WTu' refers to the Alexander Turnbull Library in Wellington. Their special copy is kept in the library's 'cold room', a special room held at minus 29 degrees. (Most other stores in the library are at about 2 degrees.) This collection of books, called the 'wrapped reserve collection', is a selection of seminal and important volumes which are wrapped in special plastic (a bit like clingfilm), then frozen to stop them degrading and to ensure they survive for centuries to come. When I asked to see it, it was brought up to room temperature slowly over the weekend. One of the consequences of my asking to see it, is that this precious book won't be returned to the cold room. Evidently it is not good conservation practice to thaw then re-freeze a book. This copy is now being re-catalogued and placed in the main collection so other researchers can access it without restriction.



Thomas Kirk

¹ E-mail from Fiona Oliver, Curator NZ and Pacific Publications, Alexander Turnbull Library, 28.4.2016.

An oval stamp inside the front cover contains the words “High Commission for New Zealand” and “Library” which means it was once part of the library of a High Commission for NZ. The country, however, has not been identified. The provenance details were not recorded on the catalogue record when the book was deposited with the Turnbull.

There are three special copies

A letter, written in 1954 by Kirk's youngest daughter Cybele Kirk (1870 –1957), provides evidence that three special copies of Kirk's *Forest Flora* were produced.

“This is one of three special copies, one for the Kew library (Forestry Department), one for the Prime Minister of New Zealand, and one for the Author.”

Cybele signed the letter, “Auntie Cybele” but did not name the intended recipient. Text in the letter saying ‘This copy was given to Grandma’ indicates that the book had belonged to Kirk's widow, Sarah Jane Kirk, (1829-1916), and was now being passed to a grandson or granddaughter. The most likely recipient was Bernard Callcott Kirk, the only son of Thomas William Kirk (1853-1936), the elder of Thomas Kirk's two sons who survived into adulthood. The younger son was Harry Borrer Kirk, (1859-1948).

Cybele Kirk's letter is in a folder of research notes compiled by Laneth McKinnon² when she was drafting a biography of Thomas Kirk. The biography was never completed, but the Alexander Turnbull Library has a copy of the draft.

Where are the other two special copies?

Enquiries to the Library at the Royal Botanic Gardens, Kew have revealed that Kew holds two copies of Kirk's *Forest Flora*, but neither has colour plates. The copy held in the Kew Rare Books Store is the copy sent by the author to Kew. It is one of the larger-size copies (42cm). On the flyleaf is the inscription “Professor W. T. Thiselton Dyer, C.M.G. &c. with the author's compliments. 30/4/1889, Wellington, N.Z.” The second copy at Kew is the smaller format (35cm) and, according to the bookplate, was presented to Kew by Miss Gertrude Fennell, 1922.³

In 1964, Lady Hellaby (Eleanor Lillywhite Hellaby) gifted a special copy to the Botany Department at Otago University. She had received it from her sister Rose. This copy was displayed at Otago University's celebration of botanical teaching and research in 2014.⁴ How Rose acquired this copy is not yet known. The coloured illustration of *Sophora* can be seen under the entry for the E.L. Hellaby Indigenous Grasslands Research Trust on www.otago.ac.nz/library/exhibitions/botany – Botany: our heritage, our future. A celebration of teaching and research. 2014.

So, if Cybele's information is correct, and three special copies were produced, two have now been located; one in the Turnbull and one in the Botany Department at Otago.

Who coloured the pictures?

It is likely that more than one person was involved in applying the colour washes to the special editions (pers. comm. Jane Humble, botanical illustrator, who observed the variations in the quality of the application of colour to the pictures in the Turnbull copy).

Further questions

But there is more to learn. Perhaps others know the answers to the following questions.

- What happened to the copy that Cybele Kirk passed to another family member in 1954? Is this the one that is now in the Botany Department at Otago?
- Did the Premier receive a copy in 1889, and if so, is this the one that is now in the Turnbull, having also spent some time in one of the High Commission of New Zealand libraries. Which country was it sent to, and why?

² Also known as Lanna Brown and Lanneth Coughlan.

³ Email from Anne Marshall, Acquisitions Librarian, Royal Botanic Gardens, Kew. 4.2.2016.

⁴ www.otago.ac.nz/library/exhibitions/botany Botany: our heritage, our future. A celebration of teaching and research. 2014.

- What happened to the special copy that was intended for the Forestry Department at Kew?

Acknowledgements

Particular thanks to Fiona Oliver (Alexander Turnbull Library), Dr Kath Dickinson, Botany Department, Otago University, Donald Kerr, (Librarian, Otago University), Anne Marshall (librarian at Kew), and Jane Humble.

References

Bagnall, AG. New Zealand National Bibliography to the Year 1960. Government Printer, Wellington. The bibliography was published in six volumes between 1970 and 1985.

Brown, Lanna (1968). The Forest Era of Professor Thomas Kirk. New Zealand Forest Service Information Series No.56. Government Printer, Wellington.

Kirk, C. 1954. Letter to un-named person. Record Number 81-159-84. Correspondence and Research Notes on Thomas Kirk. Alexander Turnbull Library, Wellington.

Kirk, T. 1889. The Forest Flora of New Zealand. George Didsbury, Government Printer, Wellington.

Moore, LB. 1973. Thomas Kirk, Botanist. *Tuatara* 20(2), 51-56.

Sampson, F. Bruce. 1985. Early New Zealand Botanical Art. Reed Methuen Publishers Ltd. Auckland

■ New Zealand adventive *Nephrolepis* spp. Another ladder fern.

Mark Large, Unitec Institute of Technology (mlarge@unitec.ac.nz)

Nephrolepis cordifolia (L.) Presl (ladder fern or tuber ladder fern) is widely known as an invasive weed, and is now regarded as being fully naturalised in New Zealand (e.g. see Howell & Sawyer 2006). The first records of this plant being wild date from the 1970's (Webb, Sykes and Garnock-Jones 1988). However, herbarium material (see Bell 1889, AK289696) records the presence of this species in Auckland gardens from the late 19th century.



Figure 1 *Nephrolepis* aff. *N. exaltata* growing near Waiatarua, Auckland. Plants are crested and tuber-less.

The presence of other native species of *Nephrolepis* (in particular *N. flexuosa* Colenso) potentially complicates the recognition of the adventive species. However, *N. cordifolia* (ladder fern) has easily been distinguished by the presence of “bulbils” or “tubers” that appear along wire-like runners. These structures are lacking in the native species.

Allowing for occasional cultivation, *N. flexuosa* also tends to have a more circumspect natural distribution, being associated with thermal regions of the North Island (i.e. the geothermal fields from Rotorua Lakes District to Taupo).



Figure 2 *Nephrolepis* aff. *N. exaltata* growing in shade near Waiatarua, Auckland. Same plant as Figure 1.

exaltata is similar to both *N. cordifolia* and *N. flexuosum*. Like the latter native species it is tuber free. However, the fronds are usually wider and softer than either species. In cultivation the fronds are usually crested (sometimes elaborately so). In the wild the plant often loses the crested. (In the populations observed to date crested seems to be associated with stress).

Although these wild populations are likely to be garden escapees and of clonal origin, all plants seen to date are fertile. In the summer of 2016 all produced living spores. Consequently studies are now under way to assess long term spore and gametophyte viability, as well as undertake a general risk analysis and assess genetic status.

The true extent of *N. exaltata* presence in NZ is unclear. Consequently we would be interested in anyone who notices this plant to contact us c/o mlarge@unitec.ac.nz.

Figure 3 *Nephrolepis cordifolia* Mt Albert, Auckland



Spore and frond morphology also differs slightly between species. Fronds in *N. cordifolia* being wider (mean c.23/24mm) and more rigid, whereas those in *N. flexuosa* are narrower (mean c.19/20mm) and slightly drooping.

In 1998 Sandra Van der Mast (Van der Mast & Hobbs. 1998) suggested that the common indoor plant *Nephrolepis exaltata* (L.) Schott. could “grow aggressively if planted outside in a suitable sheltered location”. (This is particularly true in northern New Zealand).

Nephrolepis exaltata is still widely available (under many named varietal forms including “boston lace”, “teddy junior” “blue bells”) from wholesale, retail and online plant suppliers. Generally this plant is seen as a “safe” option “Not to be confused with the “ladder fern” which is a noxious plant”. It is also assumed to be sterile/ non-viable.

Between 2014 and 2016 wild populations of *Nephrolepis exaltata* have been found in the Waitakere Ranges (western Auckland) and near Orewa/Whangaparoa peninsula (northern Auckland city). Anecdotal information also suggests a presence in Hawkes Bay.

Plants in the Waitakeres are forming large dense clumps very similar to those produced by *N. cordifolia*. Without close inspection these two species maybe confused. In fact morphologically *N.*

References

- Howell C. & Sawyer J.W.D. 2006 New Zealand Naturalised vascular plant checklist. New Zealand Plant Conservation Network. <http://nzpcn.org.nz/publications/Naturalised-list-06-new.pdf>
- Webb CJ, Sykes, WR & Garnock-Jones PJ. 1988 Flora of New Zealand VI. Naturalised Pteridophytes, Gymnosperms, Dicotyledons. Botany Division DSIR.
- Van der Mast S & Hobbs J. 1998. Ferns for New Zealand Gardens. Godwit. ISBN: 9781869620202



Figure 4 *Nephrolepis cordifolia* Mt Albert, Auckland (same plant as Figure 3, cleaned to show the characteristic tubers).

BIOGRAPHY / BIBLIOGRAPHY

■ Biographical Sketch – James Murray (1923-1961)

Val Smith, 80 Mill Road, New Plymouth 4310.

James Murray was born at Forest Hill, near Winton in Southland, on 3 April 1923, the eldest son of James Campbell Murray (1883-1971) and his wife Ann, née Jamieson (1891-1970). His father had emigrated from Scotland in 1909 on the same ship that had brought the Jamieson family to Dunedin, and after serving in World War I he married Ann. Together they cleared and farmed their Forest Hill property and had four sons. Their firstborn showed early interest and confidence in the bush, and reverence for all living things. He made the long walk to North Forest Hill School for two terms (1928-29), and then stayed with his grandmother in Dunedin and went to North East Valley School until December 1930. By 1931 the local school had closed and a school bus took pupils to Winton, where James was dux in 1935. After a year at Winton District High School, he boarded with his grandmother again and spent five years at Otago Boys' High School, where he was proxime accessit in 1940, dux in 1941, and as well as his academic achievements, took a leading role in extra-curricular activities.

Continuing to excel at Otago University, he graduated BSc on 8 May 1945 and was awarded a New Zealand University Senior Scholarship and Otago University's Peter Smeaton Junior Scholarship in Experimental Science. In November that year he attained First Class Honours for his MSc thesis on extractives from the tree daisy *Olearia paniculata*. Appointed an assistant lecturer in chemistry in 1946, he continued his chemical investigations into secondary compounds of native plants, combining his two loves, botany and chemistry.



Cladonia murrayi. Photo by Allison Knight.

Participation in a geological expedition to Port Pegasus, Stewart Island/Rakiura, in January 1949 enabled him to find new plants, including the lichen *Pseudocyphellaria coronata* (then known as *Sticta coronata*) for chemical extraction back in the lab.

In December 1949 at the East Taieri Presbyterian Church, he married Audrey Douglas, whose family farmed on the Taieri. She had been a technician in the chemistry department, and later trained as a kindergarten teacher. With the award of a National Research Fellowship for full-time research at Cambridge University, they left in October 1950 for the UK. Initially, Audrey lived with cousins in Paisley, Scotland, while James settled in at Emmanuel College, and eventually they moved into a flat at Fen Ditton, northeast of Cambridge, where the first of their three children was born. James worked in the organic chemistry laboratory of Sir Alexander Todd, and after two years of study his 159-page thesis on *Synthesis of Tropolones and related compounds* earned him his PhD.

Back in Dunedin in early 1953 James re-joined the chemistry department as lecturer and in 1958 senior lecturer at Otago University. His chemical investigation of New Zealand lichens, on which he published some 15 papers, led to his interest in their botany. It was difficult to get species identified and he joined forces with retired schoolteacher William Martin, a bryologist who also collected lichens. James Murray built up his own collection and examined the scattered literature then available; he also solicited specimens from Antarctica and the subantarctic islands for comparison. In 1959 he was awarded a Nuffield Travelling Fellowship for study at Imperial College and the British Museum. Between his concentrated herbarium work in London and Europe, the family visited relatives (and collected lichens) in Scotland. While overseas his first three papers on New Zealand lichens were published, and he joined the fledging British Lichen Society. Back in New Zealand in January 1961, he made a start on the backlog of matters requiring attention and began writing, in collaboration with Peter James of the British Museum, a world monograph on the lichen genus *Sticta*.

On Thursday 22 June 1961 there was great excitement when Jas (as he was known to friends, colleagues and students) took delivery of his new Wolseley car from the UK. Tragically, two days later he died in an accident in it, on the Taieri Plain near Mosgiel. He was 38, a diverse and generous man who gave freely of his knowledge, and his death was a great loss to New Zealand science. He is commemorated in the names of ten lichen species from New Zealand, Antarctica, Tasmania and Australia; the first, *Cladonia murrayi*, was described in his honour by William Martin in 1962, from the type collected by Murray from Secretary Island, Fiordland, in 1959. *Yarrumia*, a new genus created by David Galloway in 2015 to accommodate two species formerly included in *Pseudocyphellaria*, is a backward spelling of Murray and also commemorates James Murray, "who contributed so much to New Zealand lichenology".

▫ ***Cladonia murrayi***

Cladonia is a lichen genus of around 450 species in the family Cladoniaceae, widely distributed in the northern and southern hemispheres. *Cladonia* is the most speciose lichen genus in New Zealand with some 70 taxa currently recognised. *Cladonia murrayi*, a characteristic red-fruited species with conspicuous apothecia and long, well-developed basal squamules, is found in subalpine or alpine peat bogs, fell-field, on moist soil or rotting logs at lower elevations, from sea level to 1500 m. It is known from the Ruahine Range in the North Island, western and southern areas of the South Island, also Stewart Island/Rakiura and Campbell Island, and in Tasmania and New South Wales.

Reference

Galloway DJ 2015. Contributions to a history of New Zealand lichenology 5: James Murray (1923-1961). *Phytotaxa* 198 (1): 1-67. Auckland, Magnolia Press.

PUBLICATIONS

■ **Publications Received**

Canterbury Botanical Society Journal 2016 (4) Upcoming meetings and trips, meeting report – wetlands by Philip Grove, upcoming workshops.

Canterbury Botanical Society Journal 2016 (5) Upcoming meetings and trips, meeting and trip report – bugs and plants of drylands west of Christchurch, obituary for John Ward, volunteer weeders needed, QEII National Trust Brian Molloy Doctoral Research Scholarship, upcoming workshop.

Canterbury Botanical Society Journal 2016 (6) Upcoming meetings and trips, meeting report – Flora of Lord Howe, trip report for Carews Peak Reserve.

The New Zealand Native Orchid Journal May 2016 (140) NZ orchid key app, pollinators of *Pterostylis tanypoda* and *P. tristis*, *Bulbophyllum* type localities, *Corybas* 'pygmy'.

Wellington Botanical Society Newsletter May 2016 Upcoming meetings and trips, submissions made, grants and awards available, seed conservation research, Baring Head conservation, *Olearia gardneri* discovery, edible native plants, trip reports for western Waikato, Wainuiomata coast and north Wairarapa.

Manaaki Whenua Press offers Society Members 10% discount*

Please indicate Society Membership when ordering!

*excludes special set prices, eg Flora of NZ set

www.mwpress.co.nz