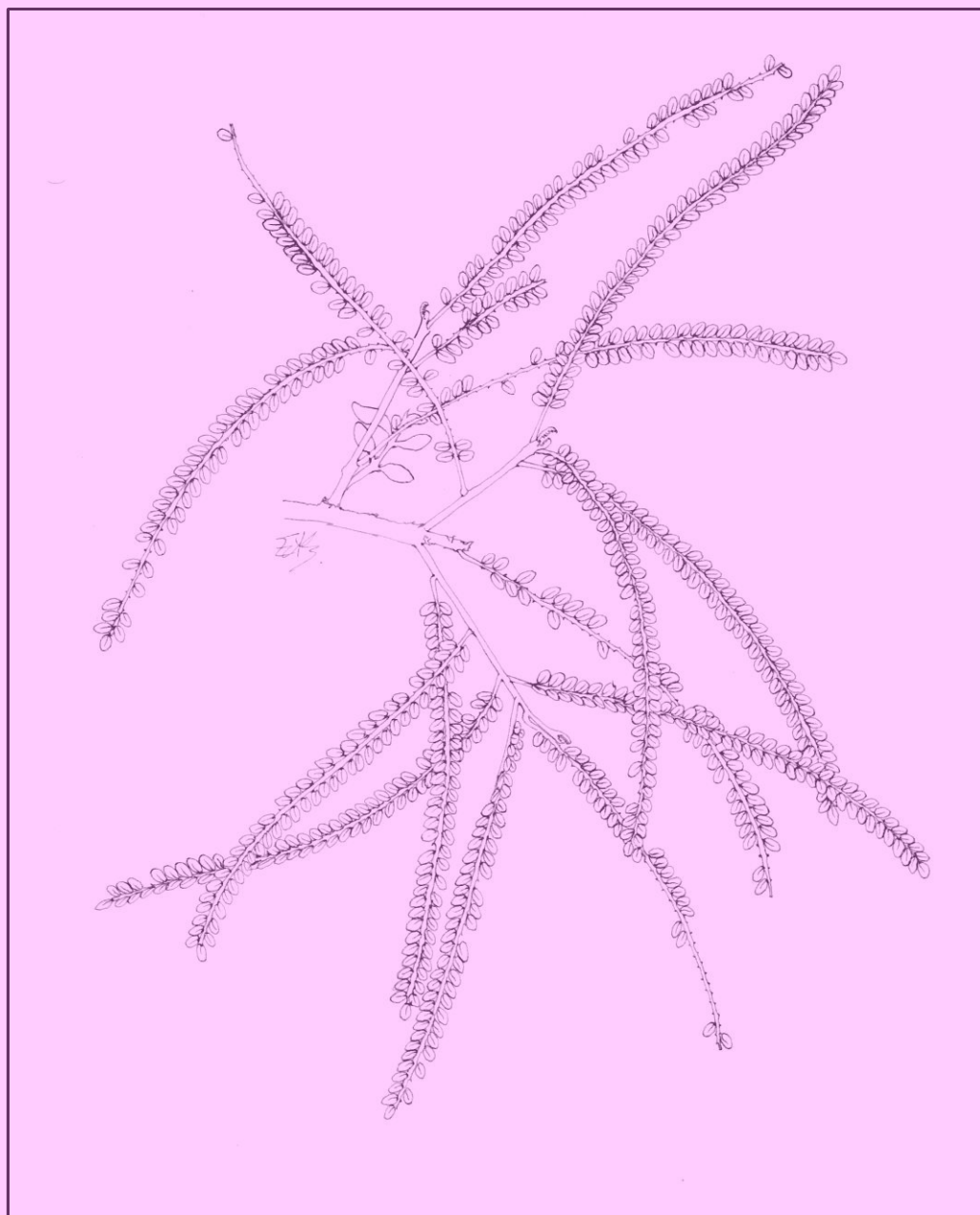


NEW ZEALAND BOTANICAL SOCIETY

NEWSLETTER

NUMBER 150

December 2022



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Subscriptions

The 2023 ordinary and institutional subscriptions are \$28 (reduced to \$25 if paid by the due date on the subscription invoice). The 2022 student subscription, available to full-time students, is \$15 (reduced to \$10 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 30 April each year for that calendar year. Existing subscribers are sent an invoice with the March *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 March 2023 issue is 25 February 2023.

Please post contributions to:
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Send email contributions to lara.shepherd@tepapa.govt.nz Files are preferably in MS Word, as a Microsoft Word document. 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

Sophora fulvida by Eleanor Burton.

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NEWS

New Zealand Botanical Society News

- **President's speech at presentation of Allan Mere 2022 to Dr Carol West, Tuesday 22 November 2022 at a Wellington Botanical Society meeting, at Otari Wilsons Bush Tourist Centre**

Anthony Wright, President, New Zealand Botanical Society



Tena koutou, tena koutou, tena koutou katoa
Nga mihi nui ki a koutou
Tihei mauriora!

I'm delighted to be here today to celebrate the achievements of Dr Carol West by making the 2022 presentation of the Allan Mere to her.

But first, a sincere thank you to Ōtari Wilton's Bush and the Wellington Botanical Society for hosting and organising this event for the New Zealand Botanical Society. It's so good to be in this venue in the midst of wonderful native forest – I must say Wellington is looking the most green and verdant I can recall – no doubt a result of rather a lot of rain.

Before proceeding, I'll give first a little background to the award, which some of you will have heard once or twice before! The Allan Mere was donated by Dr Lucy Moore in 1982 to commemorate the 100th anniversary of the birth of Harry Howard Barton Allan, first Director of Botany Division, DSIR, and author of Volume 1 of the *Flora of New Zealand*. The Allan Mere is awarded annually by

the New Zealand Botanical Society from nominations made by Regional Botanical Societies or individual members to persons who have made outstanding contributions to botany in New Zealand. The Mere is housed at the Allan Herbarium at Manaaki Whenua Landcare Research in Lincoln, just south of Christchurch.

The New Zealand Botanical Society Committee has awarded the Allan Mere for 2022 to Carol West and it is my pleasure to present this award.

The nomination was made by Kate Jordan for the Wellington Botanical Society, supplemented by support from the Waikato Botanical Society.

One of the especial pleasures of the nomination and award process is learning so much more about botanical enthusiasts I thought I already knew pretty well. Carol commenced her botanical journey in 1980 with completion of her Master of Science degree at the University of Auckland on the

regeneration of native plants on Tiritiri Matangi Island. This was followed by a doctorate on the population ecology of *Beilschmiedia tawa* at Pureora Forest, commenting on the impact of logging native forest at different intensities.

During her time at the University of Auckland, Carol was a keen member of the Auckland University Field Club, and we both enjoyed a recent reunion weekend to mark the centenary of Field Club's formation – along with Murray Douglas who is here today and about 180 other former members.

Carol then joined the Botany Division of the Department of Scientific and Industrial Research in 1984. For many years, she was also the Conservancy Scientist for the Department of Conservation Southland, where she provided advice to the DOC Southland Senior Management Team and Biodiversity Staff.

Carol returned to Wellington to take up the position of Manager of Threats Management at DOC before becoming their Director Terrestrial Ecosystems. Even while working at a very senior level of management, she continued her wide-ranging scientific work centred on the impacts of plant and animal pests on a wide range of ecosystems.

Carol has played a significant part in our understanding and protection of the Kermadec Islands flora, the sub-tropical extension of the Aotearoa Botanical Region. She has been involved in many projects there, including the massive weed eradication programme that commenced in 1990 and which has only recently ceased due to covid impacts.

As well as her many contributions through her paid employment, Carol has a significant volunteer portfolio that spans both the North and South Islands. She was a founding member of the Ōtatara Landcare Group and was actively involved with the Southland Natural History Field Club. In Wellington, she is an avid supporter of Ōtari-Wilton's Bush, the only botanic garden dedicated to New Zealand plants; and has been an active and enthusiastic member of the Wellington Botanical Society for over 30 years. Carol has also been a valued member of the New Zealand Botanical Society Committee since its inception, at the inaugural general meeting in November 1988.

Beyond our shores, Carol has presented on the New Zealand native flora at various international conferences, including in Australia, Chile and Iceland, as well as lecturing in Japan.

Thank you all for coming to do honour to Carol today, and thanks again to Tim for the Ōtari venue, Frances Forsyth, President of the Wellington Botanical Society for organising the event, and Kate Jordan for compiling the nomination.

I'd now like to read out the formal citation entered into the Allan Mere Book of Record:

Dr Carol West

Dr Carol West has contributed to the study and preservation of New Zealand flora for more than forty years. Carol completed her MSc at the University of Auckland on the regeneration of native plants on Tiritiri Matangi Island, followed with a doctorate on the population ecology of *Beilschmiedia tawa* at Pureora Forest. She has taken on many roles to study, protect and cherish New Zealand indigenous flora, and encouraged many others to do the same. Carol is an avid supporter of Ōtari-Wilton's Bush in Wellington, and has been an enthusiastic member of the Wellington Botanical Society for more than 30 years.

2022

At this point in the proceedings, I need to remind Carol that it was one of Lucy Moore's rules that the Mere be kept safe at the Allan Herbarium, and only "let out" for the presentation ceremony. However, Carol, you will get a calligraphed certificate – once it has been prepared by our scribe – which will be couriered to you, together with a bound set of nomination and announcement papers.

Congratulations to you Dr Carol West - I have great pleasure in presenting you with the Allan Mere for 2022.

Regional Botanical Society News

■ Auckland Botanical Society

September meeting

Unfortunately, the Plant of the Month speaker was unwell, so Ewen Cameron came to the rescue with a brief botanical exploration of Niue Island. The main speaker, Chantal Probst, gave us an overview of weed biocontrol in New Zealand, which she has been working on for 10 years at Manaaki Whenua - Landcare Research. She studies and tests fungal biocontrol agents against invasive plant species. We were reminded that biocontrol does not eliminate plants, but reduces them to manageable levels.

September field trip

Twenty-two members met on the Sandspit wharf and travelled by the Kawau Kat to Rabbit Island, a small (2.2 ha) island in Kawau Bay. Until 1976 it had a covering of pine trees, but these were felled, the timber used to build a jetty, and the land converted to a beautiful island retreat. The woman who is employed for 4 days per month as caretaker and gardener gave us an informative tour. The well-kept gardens were admired, and enough of the vegetation left growing around the perimeter gave us an idea of what grew there originally.

October meeting

The Plant of the Month speaker was Rowena Gilchrist from the Auckland Council. The main talk was shared between our two keen lichenologists – Dan Blanchon on coral lichens of Aotearoa and Marley Ford on studies into New Zealand Pannariaceae.

October field trip

Botanical Societies from Auckland and Waikato joined together to explore the Taupiri Scientific Reserve. The new Huntly Bypass goes right past this 664 ha reserve, and the track followed a ridge, then down to a wetland and then a climb to a high point.

November meeting – The Lucy Cranwell Lecture

Our 35th Lucy Cranwell Lecture, and the first since 2019, was given by Colin Meurk from Christchurch. His subject was how cities are keys to biodiversity and planetary futures. He claims that people must be connected to nature, and that both people and the biosphere benefit. With an earthquake-damaged city to study, he reported on what progress has been made and what more can be done to create connectivity for both humans and wildlife.

November field trip

Despite a dismal weather forecast a good gathering of the faithful met at the Te Arai carpark on the east coast, north of Pakiri. Jack Warden led us northwards behind the dunes, and it was a day for brushing up on grasses and exotic herbs. A little prostrate herb that was new to us was Brazilian whitlow (*Paronychia brasiliensis*). The distribution map on the Australasian virtual herbarium site (avh.org.au) showed that while Northland had the bulk of records, there was none from this area. It was a good opportunity to brush up on the differences between the two wind grasses, *Lachnagrostis billardiensis* and *L. filiformis*. The return walk up the beach sadly revealed a dead little blue penguin. Later in the day, when all were safe and warm, the heavens opened.

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■ Rotorua Botanical Society

August Trip - Highlands Station

Several large blocks of forest on Highlands Station have been fenced and set aside under a QEII covenant. The area overlooks Mt Tarawera so the soils are deep pumice overlain by Rotomahana mud. The areas have been fenced for many years but have been logged for podocarps. As a result

tree ferns, especially *Dicksonia squarrosa* and *Cyathea dealbata*, were very common under a sparse tawa canopy with the odd large mangaeo especially on the lower flat. It was a pleasant surprise to see the occasional very large kahikatea and rimu. In the more open areas mahoe and dense patches of supplejack slowed progress but these were often the small areas of abundant seedlings. The forest changed to a dominant kamahi canopy as we climbed a ridge to a high point. Here it became more open with rangiora, hangehange and rarekau. At one point on a small flat a large liane turned out to be an abandoned logging cable. Finally, after a steep climb we reached the edge of the block and a sunny lookout for lunch. Along the stand margin there were several very large, very ratty, possum damaged kaikamako.

After lunch we walked down the stand margin for a while at last having a good opportunity to search the high epiphytes, spotting the odd *Pittosporum cornifolium* and numerous *Earina mucronata*, *E. autumnalis* and *Dendrobium cunninghamii*. Heading back to the vehicles we dropped into a gully where ferns were quite numerous. Special favourites included the lacy *Leptolepia novae-zelandiae* and *Polystichum sylvaticum*. A final short section back to the vehicles along a road through the block provided our first real contact with herbs and shrubs such as snowberry, putputaweta, fuchsia and wineberry. The road banks yielded many of the usual forest herbs such as *Nertera depressa*, *Lagenophora pumila*, *Microtis unifolia*, *Hydrocotyle microphylla* and few weedy adventives.

September Trip 1 - Homunga Bay

A small group of 7 made a quick descent down along a farm track then through pasture to the fence of the reserve. At the gate we deviated from the Walkway and headed down the old farm track. The old banks on the track provided a wide range of interest, especially in the initial few hundred metres where the kānuka and kamahi closed over it and mahoe fringed the lower bank. These included the typical young seral plants such as tanekaha, rewarewa, *Adiantum cunninghamii*, *Blechnum parisiiae* and *Gahnia lacera*. Unexpected species included the short stemmed *Cordyline pumila*, *Gaultheria antipoda*, *Coprosma arborea* and the local weed *Erica caffra*. Further down, where it was more open, *Pomaderris amoena* and *P. kumara* were in flower and *Morelotia affinis* was common. We finally reached a lunch spot under a few large old radiata pines just 200 m from the fence as the opportunity of having a small group was taken to introduce new members to the local plants.

After lunch 3 people departed and we descended a short link track to the main coastal track near an old pā site with its characteristic karaka and puriri. The route was mostly along the tops of pohutukawa clad cliffs with spectacular views to the rocks below only broken by patches of flax and *Astelia banksii*. Where it wound into steep gullies we had the opportunity to see remnant coastal forest comprised of tawa, kohekohe, kawakawa and houpapa with many tree ferns, especially mamaku and whekī. Here the damper banks revealed several orchids including *Pterostylis banksii*, *P. trullifolia* and *P. alobula* in flower and swathes of *Acianthus sinclairii* in dense fruit. Ferns included *Asplenium oblongifolium* and *Pteris carsei*. Palatable species were generally uncommon because of past goat numbers and stock grazing. Scrubby areas were dominated by mānuka, hakea, and mingimingi with tall *Leucopogon fraseri* on the barer banks. As we turned for home at yet another descent to a creek had large swathes of *Macherina juncea* and *Apodasmia similis* covering the exposed coastal slopes. Along the creek flax was windswept under the pohutukawa along with the odd rengarenga lilly. Finally, before the long haul uphill to the cars, we retreated to Homunga Bay beach, to seek out and successfully relocate previously reported *Cyrtomium falcatum*, an unwanted invader.

September Trip 1 - Hancock Rd Te Kopia

The trip was combined with Waikato Bot Soc so 18 turned up including the owners, a couple who were third generation on the land. The family had owned a large area of flat land as well as the slopes of the Paeroa Range but sold the flat farmlands and placed the remaining forested land in a trust and had retired the lower slopes. They were in the process of restoring about 400 ha including developing the lower slopes for recreation, especially mountain biking. Initially we botanised an access road from the old quarry car park to the base hut. This part of the area was in tree ferns, mahoe, *Coprosma robusta* scrub with patches of grass and more mature regenerating forest with emergent rewarewa. The road banks were rich botanising. Finds included a rare bryophyte spotted by Matt Renner, *Gaultheria paniculata* and hybrids with *G. antipoda* and *Dracophyllum strictum*. We also had a rare opportunity to see male and female *Clematis paniculata* plants in flower only a few metres apart, the latter with much larger flowers.

From there we headed along the road to tall forest and followed a trap line to the lower boundary for lunch in the sun. This provided a transect down a gully through the mature forest. The forest was mainly tawa, mahoe and tree ferns but in the lower gully there were several massive old mahoe, remnant from before logging. Other plants of interest in the lower gully included *Polystichum sylvaticum*, *Leptolepia novaezealandiae* and very large *Diplazium australe*, freshly green after the winter. After lunch we ascended a steep mountain bike track along a ridge through typical tawa - kamahi forest to the road, now well above the hut. Several large mangeao and totara were noted, as well as the typical *Hymenophyllum demissum* carpets on the ground. Remnant old rātā, rimu and pukatea were also seen in the distance through canopy gaps. The steep descent to the hut was mostly through rich tawa forest with pigeonwood, mahoe, mangeao and pole rimu, miro, matai and kahikatea scattered along the track edges.

October Trip - Pongokawa Ecological Area

The Pongokawa Ecological area lies within the Rotoehu plantation and was originally set aside to protect a large kōkako population, displaced by forest clearance to create the plantation in the 1970's. The population subsequently crashed but persisted. An earlier BotSoc visit in 2009 explored the mature forest whereas this trip explored an eastern area that was heavily logged. The central track followed an old logging road up an initially broad gully, mainly through low rewarewa/kamahi forest. The track was framed in tree ferns, mainly *Dicksonia squarrosa* with some mamaku, mahoe and light understorey because of wallaby and other pests. The ferny banks were mainly covered in *Blechnum chambersii*, with the odd *B. vulcanicum* or *Polystichum wawranum* while the track sides included *Diplazium australe*, *Asplenium bulbiferum* and masses of seedling mangeao, perhaps as a result of recent rodent trapping, odd old mangeao and pukatea. Epiphytes included *Blechnum filiforme*, *Loxogramme dictyopteris*, *Lecanopteris pustulata* and *L. scandens*. Finally at an old skid site we headed into kamahi forest along a trap line with often large mangeao and patches of tawa. Highlights were a patch of *Lophomyrtus bullata* hybrids and a patch of *Pterostylis* (probably *P. banksii*) in bud. The forest here was much more varied with patches of kiekie and supplejack. After two large gullies most people gave up while the last stragglers went on down a steep face to a large pukatea that had survived clearance, before heading back to the cars.

FUTURE EVENTS

January 28 –30 Rangitoto Station, Northern Pureora (with Waikato Botanical Society)

February 11 Manawahe Ecological Trust and king fern population

March 18 Kaharoa

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■ Canterbury Botanical Society

September 10th Field Trip

Our first stop of the day was the McHughs Forest Park, a 43 hectare Douglas fir (*Pseudotsuga menziesii*) plantation, once owned by the Selwyn Plantation Board, but now maintained as a public park by the Selwyn District Council. Popular with cyclists, dog walkers and families, we saw many 'fairy houses' but no fairies were observed. The understory had a surprising range of native species for the Canterbury Plains, especially fern. Fern species present included patches of Hound's Tongue Fern (*Microsorium pustulatum*), Sickie Spleenwort (*Asplenium polyodon*) and Button Fern (*Pellaea rotundifolia*). Native groundcovers such as *Microlaena stipoides*, *Lagenophora strangulata* and *Dichondra repens* carpeted the ground in places. *Pittosporum tenuifolium*, as well as *Pittosporum ralphii*, hybrids and garden variety *Pittosporum* spp. cultivars were numerous, as well as *Coprosma rigida*, *Pseudopanax arboreus*, *Melicytus ramiflorus* and *Helichrysum lanceolatum*. Weeds were also numerous, including *Azara microphylla*, *Cyperus albobristatus*, *Daphne laureola*, *Hypericum androsaemum* and *Cotoneaster franchetii*.

After a bit of time away with the fairies, we eventually made it back to the carpark and headed to Silverwood, the New Zealand Farm Forestry Association's trial forest. Here we sat under some exotic

trees and had lunch. Mike Davies showed us around the forestry trials and arboretum and lamented the loss of most of the old tree plantings on the farm to dairy conversion and the resulting use of centre pivot irrigation which requires the removal of all trees. Mike mentioned how the whole farm was visible from the hills at one stage due to the extensive plantings. An interesting sight was an extensive patch of *Maytenus boaria* suckering from a cut stump. The forestry trial was not irrigated, and showed the growth rates of forestry species in dryland conditions, particularly *Acacia* spp. Elizabeth Forrest talked about the importance of eco-sourcing for the success of native farm plantings, and showed her successful plantings at Silverwood, after discussing the neighbouring plantings on the dairy farm which included inappropriate species such as the Chatham Island akeake (*Olearia traversiiorum*). We finished the day with a visit to the Adams Arboretum, planted by a relation of George Ridgens, T W. Adams, and notable for an interesting range of exotic species including *Picconia excelsa*, *Prumnopitys andina* and *Quercus incana*. Weedy trees such as *Maytenus boaria* and *Rhamnus alaternus* were also present. Although exotic trees can become a threat for indigenous plant ecosystems, arboreta like these have huge cultural and historical value and, being surrounded by intensive pastoral agriculture, are unlikely to cause harm. This was a different botanical field trip for all, particularly for those who like to sit in long grass and enjoy the changing of the seasons. The highlight of the trip was *Clematis paniculata* in full flower, a real feature of spring.

October 3rd Meeting

Mahu Whenua is the name for ~55,000 hectares between Queenstown and Wanaka purchased by song writer and producer "Mutt" Lange for conservation and strategic farming. His destocking of most of the land, investment in goat, deer and pine control, and formal legal protection through QEII Trust covenants has won over the critics of overseas ownership. Dr Janice Lord, Otago University Botany Department, has involved her students in long term tussock grassland monitoring and trials on revegetation of mountain beech with appropriate beech mycorrhizae. One of those summer students was Cara-Lisa. In 2017 she came upon the big, complex End Peak wetlands in a south-facing alpine cirque basin at 1800 metres, in the Harris Mountain range. Awed by the naturalness, the mountain setting, and beautiful patterns of wetland vegetation she was inspired to make this her MSc study site to record the plants and ecological processes, despite the difficult logistics of accessing a remote site. Hypothesizing that the plant species zonation would be related to water fluctuation she set up trail cameras to monitor water levels. The resulting 6500 photos were turned into plot points on a graph of water levels and snow – snow occurs for 7 months of the year. Cara-Lisa's photos were magnificent. We saw aerial views of the "paddy fields" of alternating stopbanks and open water, yellow-flowered *Ranunculus pachyrrhizus*, the tiny *Azorella exigua*, *Epilobium purpuratum*, the Data Deficient *Myosotis glabrescens*, the threatened *Plantago obconica* with its funnel-shaped flower, *Aciphylla* weevils, and repellent gordian worms. Cara-Lisa collected soil samples to grow on in a glass house to see how the emergent seedlings correlated to the current vegetation species and abundance. She found that there was a statistically significant difference between what grew in the wetland and the seedlings that emerged in the seed trial. The seedbank is the key to recovery after large-scale natural disturbance. Cara-Lisa highlighted the real possibility of more frequent droughts induced by climate disruption. Whatever the future, Cara-Lisa has benchmarked the vegetation structure, and fluctuation in the water levels in this type of rarely studied, naturally uncommon patterned wetland ecosystem. Thistle seedlings (*Cirsium arvense*) in the seedbank trial could well mean that the site is primed for change.

October 8th Field Trip

Keenly anticipated and (intended to be) well timed for *Clematis* spp. flowering season, a good turnout of over 15 keen folks assembled at the Peg for a trip to a kānuka forest remnant at Eyrewell. Upon arrival at the site, most spread out into small groups and disappeared into the undergrowth at the central and eastern end of the remnant before regrouping for lunch. Some departed at this point before Jason led a troop single file through to the western end to ooh-la-la at *Coprosma intertexta* for the latter part of the day.

Across the site, the kānuka (*Kunzea ericoides* or *K. serotina* – you decide) forest is open and relatively low-stature (4-6 m), reflecting the thin, stony, Lismore soils. In the most intact areas (usually away from edges) an understory of prickly mingimingi (*Leptecophylla juniperina*) was notable. Ground cover includes mosses, lichens, pātōtara (*Leucopogon fraseri* or *Styphelia nesophila* if you want to get with the times) and indigenous grasses and herbs including *Poa imbecila*, *Microlaena stipoides*, *Leptinella squalida* subsp. *mediana*, Mercury bay weed (*Dichondra repens*), and abundant fireweeds

The site is the largest kānuka remnant on the Plains and has been subject to a useful write-up (with species list) in an earlier Journal (Meurck et al. 1995. The last kānuka landscape on the Canterbury Plains? Botanical Society 29, p. 11-24.). It is listed as 'significant' in the Waimakariri District Plan but is immediately surrounded by irrigated paddocks or housing. Previously, the site to the north was in plantation forestry, and numerous pines spread into the remnant over prior decades. The larger trees have been poisoned in recent years and months, but occasional seedlings and small emergent trees will need ongoing control. Gorse, broom, fallen pines. Miles, Gillian and Jason were all quite familiar with the site and led useful discussions about its history and weed control work. For a site of immense importance, its future seems tenuous. The cross-boundary effects of adjacent land use are an evident and ongoing pressure. The understory rarities could easily and irreversibly be lost to cocksfoot. And the gorse and broom appear to persist just fine in the open, well-lit understory. It was noted that many indigenous species (nīnīao *Helichrysum intermedium*, native jasmine *Parsonsia* sp., and matagouri *Discaria toumatou*) were present in the remnant as merely 1-2 individuals and could conceivably be lost from the site altogether in time. *Coprosma* spp. were not recorded at all by Meurck et al. (1995), as the *C. intertexta* are rare and somewhat cryptic their omission is quite excusable, but the presence now of karamu (*C. robusta*), *C. propinqua* (and / or hybrids) suggests that the nearby well-meaning but perhaps poorly executed 'native' garden plantings are on the move. It seems that a generous setback from irrigation and fertiliser as well as a good weeding program would likely best secure the site. Happily, the landowner is to be commended for generous access permission, for maintaining a good fence, and for their support of the wilding control (with some govt. funding).

The Botanical Society booked a special showing of Rohe Kōreporepo, a humbling and inspiring film of people and their work to restore and repair wetlands and the broken connections. The film documented the ongoing work being done by local iwi and other interested groups restoring and protecting a number of wetlands from the northern Waikato to Canterbury. Highlighting the successes and challenges of each site. Followed by a panel discussion lead by Kathleen Gallagher, the film maker, and Jason Butt.

First up was a montane herb field high on the Rockwood range. At first glimpse to a non-botanist the area looked quite barren apart from low growing exotic grasses but a hands and knees inspection revealed a treasure trove of native species. Orchids were well represented with *Pterostylis tanypodia*, *Microtis unifolia* and *Thelymitra* frequently spotted. We were a little too early to see the many *Celmisia semichordata* and *Bulbinella angustifolia* flowering. However, *Viola lyallii* and *Helichrysum bellidioides* were blooming. Amongst the grasses *Colobanthus buchanaii*, *Helichrysum filicaule*, *Helichrysum intermedium*, *Scleranthus brockeri* and *Blechnum pennamarina* resided. Then it was off to a nearby *Chionochloa rubra* dominated wetland to look for plantain species.

December 5th Talk: Paul Maurice - In the Steps of the Great Plant Hunters of China.
December 10th Boundary Creek reserve, Motunau. Leader Alice Shanks

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■ Other Botanical Society Contacts

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Hawke's Bay Botanical Group

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Manawatu Botanical Society

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Whanganui Museum Botanical Group

Our meetings are held every two months on the second Tuesday, alternating with 'Nature Talks' (where the Whanganui Botanical Group has merged with Birding Whanganui and the Whanganui branch of Forest and Bird), which are held on the third Tuesday in even-numbered months. It is intended to continue with monthly botanical field trips to which members of the other two groups are invited.

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NOTES AND REPORTS

■ *Gastoniella chaerophylla*, a new member of Auckland's weedscape

Marley Ford (marsbars14@hotmail.co.nz) & Ben Goodwin

Here another exotic weed is recorded from Auckland, New Zealand, allegedly one of the weediest cities in the world. A gallivant down Oakley Creek by the lead author and Rhys Gardner between lockdowns turned up an interesting fern. The original focus of the excursion was bryophytes, but a fine fern diverted attentions briefly in the field. Initially, the lead author called this fern *Cystopteris fragilis*, brittle bladderfern (a localized exotic fern found along the volcanic streams which cut across the western side of the Auckland Isthmus). Photos of the specimen were uploaded to inaturalist.nz, where fern expert Barbara Parris pointed out that it was in fact *Gastoniella chaerophylla*, and that this was the first record of it naturalising in New Zealand (<https://inaturalist.nz/observations/98931054>) (Figure 1).



Gastoniella chaerophylla is a member of the Brake Family Pteridaceae, and formerly in the genus *Anogramma*, of which New Zealand has one indigenous species (*A. leptophylla*, also known as Jersey fern). *Gastoniella chaerophylla* originates from the wet tropics, ranging from Mexico to Tropical America. *Gastoniella chaerophylla* has no obvious common name but the species epithet is from the Greek *chairo* (to please) and *phyllon* (a leaf). Here we propose the common name 'fine fern'.

Figure 1. *Gastoniella chaerophylla* naturalizing along Oakley Creeks banks.

On 22 October 2021, one plant of *Gastoniella chaerophylla* was seen

growing as a rheophyte on the riverbank of the Oakley Creek, within Phyllis Reserve. A month later, further investigation of this site was undertaken by the second author, who has a good local knowledge of the area and its flora. From the first record 25+ plants were found growing in isolated pockets for a further c.50m downstream. These plants were observed on semi-shaded earth banks and mossy basalt rocks, from the edge of the creek's flood terrace to about 5cm above the water level. In the latter case, the plants had been inundated by water during heavy rainfall a week or so before and were covered in flood debris. Searches were later made along parts of Meola Creek and Motions Creek, but with no success. It seems that wild plants of this fern are currently isolated to a c.50m stretch of Oakley Creek.

Barbara Parris commented on the horticultural origin of *Gastoniella chaerophylla*. The species had been grown commercially by Sandra Vandermast, and Barbara hypothesised that it could be fairly widespread in cultivation. Sandra's source of our fine fern would be either the American Fern Society or British Pteridological Society spore exchanges. It never became a 'garden centre' fern. Barbara observed that in cultivation in Takapuna, the fern grew for several years in shade, on basalt-derived soil. In the Far North, however, it died when grown in shade in rhyolite-derived soil.

The Oakley Creek population of *Gastoniella chaerophylla* should be monitored. Further searches should be made elsewhere along the Oakley Creek and in similar habitats across Auckland. It seems likely that it will increase and spread in the future.

Acknowledgements

I would like to thank Rhys Gardner for the make of a good field companion, Leon Perrie for his nudge in writing this article and Barbara Parris for her initial identification and horticultural comments on the species.

■ Identification of small-leaved *Hydrocotyle* species in New Zealand

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This guide is designed to assist the identification of the small leaved species of *Hydrocotyle* which are often confused. It is a group which is in need of revision with a number of unnamed species and there

is also some hybridisation between at least two species, *H. dissecta* and *H. elongata*. The genus is now placed in the family Araliaceae and not in the closely related Apiaceae (carrot family). They are most likely to be confused with some members of the genus *Azorella*, in the family Apiaceae.

1. Species with deeply divided leaves i.e. 3-foliate:



***Hydrocotyle hydrophila*.** Grows on the margins of lakes, streams and swamps. Tiny plants with leaflets entire or sometimes obscurely lobed.



***Hydrocotyle sulcata*.** Very similar to *H. hydrophila* and grows in similar habitats. A larger plant with larger, more deeply lobed leaflets.



***Hydrocotyle tripartita*.** An introduced Australian species often found in lawns or disturbed habitats. Sharply lobed leaflets.

2. Species with more or less glabrous leaves:



***Hydrocotyle heteromeria*.** Leaves thin, yellow green. A common species, widespread in a range of habitats including lawns.



***Hydrocotyle pterocarpa*.** A wetland species, often growing with sphagnum. Leaves glabrous, glossy and with distinctly rounded lobes. Fruits distinctively broadly winged.



***Hydrocotyle novae-zeelandiae* var. *montana*.** Leaves glabrous or slightly hairy, thick and glossy green. A distinct species with a variety of forms, some of which may deserve recognition as separate species. Often found near lakes and streams and sometimes in coastal turfs but more common in montane areas.

3. Species with densely to finely hairy leaves:



***Hydrocotyle bowlesioides*.** A species introduced from Central America and now found in the northern parts of the North Island and recently found in the Marlborough Sounds. Always very hairy with whitish hairs. Some leaves angular in outline, others may be more rounded.



***Hydrocotyle dissecta*.** A forest species with leaves dull green to brown and deeply dissected.



***Hydrocotyle elongata*.** A shrubland and forest margin species. Leaves are dull green with irregularly serrated margins and usually divided about halfway. Easily distinguished when in flower or fruit by the long pedicels which are much longer than in other species.



Hydrocotyle microphylla. Occurs in a range of open habitats including lawns. Has dark, glossy green leaves, which may be sparsely hairy or glabrous. There are usually longer hairs at the top of the petiole and there may be obvious hairs on the upper leaf surface.



Hydrocotyle moschata* var. *moschata. A very common species. Leaves dull green, sharply serrated and very hairy, but variable in size and colour, sometimes with reddish margins.



Hydrocotyle moschata* var. *parvifolia. Leaves are generally smaller than *H. moschata* var. *moschata*. Possibly warrants species status.



***Hydrocotyle novae-zeelandiae* var. *novae-zeelandiae*.** A wetland species with leaves which are dull green, usually rounded in outline and finely hairy. Very different from *H. novae-zeelandiae* var. *montana*.



***Hydrocotyle robusta*.** Similar to *H. novae-zeelandiae* but the leaves are more lobed. There is some confusion over the identification of this species which is not helped by considerable variation. There are at least three tag-named forms which may be unnamed species.

There are a number of *Hydrocotyle* specimens which we cannot place under any of these species for example:



***Hydrocotyle* 1.** Has glossy green leaves with a very wide sinus.



Hydrocotyle 2. Has very small, thick, angular leaves.

(Note that photos are not all at the same scale)

Acknowledgements

Thanks to Shannel Courtney and Mark Smale for helpful comments and improvements to the text. The photo of *H. pterocarpa* was taken by Dave Holland and *H. hydrophila* by Pat Enright.

- ***Fuchsia fulgens*: a new naturalised plant for New Zealand, and a first record of naturalisation outside of its native Mexico.**

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Fuchsia fulgens Moc. & Sessé ex DC is endemic to Mexico, where it is epiphytic and lithophytic in cloud forests (Breedlove et al. 2004). It's a small to medium sized semi-woody shrub with long, hermaphroditic flowers in the family Onagraceae.

Before 1914, over 400 varieties of *Fuchsia* had already been introduced to New Zealand prior to when import restrictions were introduced in 1970 (Moir 2018). These were mostly via Europe, with many either going unrecorded or incorrectly labelled. *Fuchsia fulgens* was imported during this period. It is most similar to *F. dependens* and *F. boliviana*, which is naturalised. It can be readily distinguished by its presence of tubers, occasionally epiphytic habit, cordate leaves, and greenish tipped sepals and stigma (Breedlove et al. 2004).



Fuchsia fulgens is represented by one specimen in New Zealand: WELT SP114584, which I found on Kelburn Parade across from Victoria University in August 2021. The site was a greywacke road

cutting with shallow soil supporting *Tradescantia fluminensis*, *Dipogon lignosis*, and *Erharta erecta*. No potential parent plants were seen nearby. A prior record appeared on iNaturalist in 2010, from a patch of dumped garden waste in New Plymouth, but no specimen was lodged.

In Mexico, the sole pollinator is the magnificent hummingbird (*Eugenes fulgens*), a near-endemic to Mexico (González et al. 2016). This may explain an apparent lack of naturalisation despite long-term cultivation. Yet, while it is herkogamous, a small amount of seed is produced from selfing (González et al. 2016). This plant most likely resulted from either bird dispersal of a rare successful fruit, or from dumped garden waste. As per Heenan (2004), *F. fulgens* should be classified as a casual naturalised species.

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BIOGRAPHY / BIBLIOGRAPHY

- **Biographical Sketch – Murdoch Riley (1927–2022): music entrepreneur, writer on natural history and Māori lore**

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Murdoch Byron Riley was born in Nelson. He entered the New Zealand Broadcasting Service in the early 1950s and within a few years, as its purchasing officer, became largely responsible for the music (both classical and popular) played on the country's radio stations. In 1957, in partnership with two others, Riley set up the Wellington music studio Viking Records (the name a salute to his Norwegian wife). Here they recorded Māori and Pacific Island performers and other legendary indigenous talent, including The Chicks, Maria Dallas, Peter Posa and Dinah Lee. Riley was a successful businessman (his activities included the importing of Forum magazine - a hint of an interest in folklore here) and in later years he and his family could afford to travel widely. He died on the Kapiti Coast, aged 95 (Note 1).

The obituaries note that Riley wrote "a number" of books on natural history and Māori culture. The Auckland Libraries catalogue contains 24 such titles, the first appearing in 1983. They concern New Zealand's plants and animals, birds and shells, cooking, greenstone, and aspects of Te Reo. They are modest works, with two exceptions: first, the collection (Riley 2013) of a vast number of Māori sayings, proverbs, and notable pieces of oratory, and second, the collection (Riley 1994) of what must be nearly all that has been written on the botanical aspects of Māori medicine. Brian Enting provided this book's photographs and several well-known botanists, including Tony and Helen Druce, advised on plant identification. In its nearly 1000 citations, from manuscripts and historical works to modern anecdotal material in newspapers and magazines, it is a very useful reference indeed (Note 2). It won second prize in the 1995 Montana Book Awards and has been reprinted at least four times. A shortened version appeared in 2018.

The photograph on the dust jacket of his '94 opus gives the author the look of a wily tohunga but I

have no reason to think he had Māori ancestry (see last sentence of Note 1 below). We can conclude that he exemplifies all those intelligent, curious, and broadminded amateurs of New Zealand science who have experienced a happy sympathy with Polynesian culture.

Notes

Note 1 The information in the first paragraph above comes from the obituaries by Nicolas Boyack, one published in the Dominion Post on Sept 17 2022 page B6, and the other online in Stuff magazine <https://www.stuff.co.nz/entertainment/music/129799614/obituary-murdoch-riley-unlikely-hero-of-the-new-zealand-music-scene>. The latter contains a family photograph; it strongly suggests that if Riley possessed any Māori ancestry it was acquired more than one generation back.

Note 2 For example, a reference that Riley cites (1994: 346) to an 1806–8 manuscript in Sydney's Mitchell Library provides a first record for the presence of the peach (*Prunus persica*) in New Zealand. And of particular interest is the absence of any mention that some kinds of general debility, e.g., as caused by vitamin deficiency diseases, might be remedied by eating green vegetables (Gardner 2022).

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■ Biographical Sketch – John Renwick (1860 - 1936)

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In December 1914 New Zealand botanist Leonard Cockayne published the description of a previously unknown species of *Cotula* (now *Leptinella*) from the Chatham Islands. It was growing on the cliffs of small islets known as the Forty Fours, Motuhara, about 50 km east of the main island. When Māori fishermen in the vicinity managed to make a landing and were climbing the cliffs towards the flat, elongated summit area, plants were damaged. Pieces that fell into the sea were retrieved and taken to Owenga where John Renwick managed to grow a plant. From it, a specimen given to F.A.D. Cox, a local run holder and botanist of considerable repute, was forwarded to Cockayne, who described and named the new species after Renwick.



Summit area of Motuhara (the Forty Fours) dominated by *Leptinella featherstonii* (the form previously known as *Cotula renwickii* Cockayne).

John Renwick was born on 12 September 1860 in the parish of Kirkurd, west of Peebles in the Scottish Borders, to John Wilson Renwick, a blacksmith, and his wife Marion (née Inglis), the second

son and third child in their family of seven. Nothing is known of his early life, but like most Scots, he probably received the best education the family could afford. In the late 1800s Scottish newspapers advertised for shepherds to work in Argentina where Scottish settlement dates back to 1825, and it seems that Renwick may have gained his expertise in the handling of merino sheep there before his arrival in the Chatham Islands, New Zealand, to work for William Hunt on Pitt Island.

The Pitt Island sheep are descendants of Spanish or Saxony merinos bred and selected in Australia for both wool and meat by missionary Samuel Marsden and brought to New Zealand on his ship the *Active* between 1814 and 1837. He had a farm near Wellington, and Wellington-based trader Baron von Alsdorf put a flock of about 50 on South-East Island in the Chathams group. The breed can lamb three times every two years, often with twins, and a few years later about 300 were sold to the first European on Pitt Island, Frederick Hunt, who then sold meat and wool to visiting whalers. With the demise of whaling a few years later, the sheep became feral, increasing rapidly in number and eating out nikau and other forest seedlings, and their originally white fleeces darkening to brown.

In Waitangi on Chatham Island on 5 September 1891 John Renwick married Annie Murphy, the daughter of English-born Mary (*née* Boon), a hotel waitress, and Dennis Murphy from Ireland, who had arrived with a military pension and served as a guard at the Wharekauri penal settlement. Annie, the eldest of eleven surviving Murphy children, was born in Waitangi on 5 September 1873. John and Annie Renwick were to have seven children (four sons and three daughters), all born at Owenga.

When the Ritchie brothers, the first run holders on Chatham Island, went bankrupt in the 1890s rural depression the area known as Owenga was leased to Walter Hood, a trader who spent a lot of money on it but was ruined in the end. Robert Mathieson was installed as manager for the mortgagees but died in 1900, just two months after the birth of his second son. John Renwick managed and then leased Owenga Station, which he ran with a firm hand and a caring heart until 1929, wintering up to 8,000 Romney sheep until he and Annie retired to live their remaining years in Christchurch.

The land they had farmed included Taia, which was known to have been an early Moriori sanctuary. In 2002 the Crown purchased the 1190-hectare coastal area, to be managed as a historic reserve by the Hokotehi Moriori Trust in partnership with the Department of Conservation.

Leptinella featherstonii

Leptinella is a mainly New Zealand genus of creeping herbs with small button-like flower heads, and *Leptinella featherstonii*, including the form originally named *Cotula renwickii*, is one of the most distinctive plants on the Chathams archipelago. A robust erect woody shrub with firm, fleshy, glaucous to dark green leaves and small button-like yellow flowers in spring and summer, it is the only button daisy to have elevated woody stems. Seriously threatened on the main island, it is abundant on predator-free offshore islands on peaty coastal sites, dominated by nesting seabirds.

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PUBLICATIONS

■ Publications Received

Auckland Botanical Society Newssheet September 2022: Upcoming talks and trips, notable tree schedule, books for sale.

Auckland Botanical Society Newssheet October 2022: Upcoming talks and trips, including details of the summer camp, Auckland's Tūpuna Maunga Integrated Management Plan, a pioneer's pot scrubber – *Lycopodium deuterodensum*, books for sale.

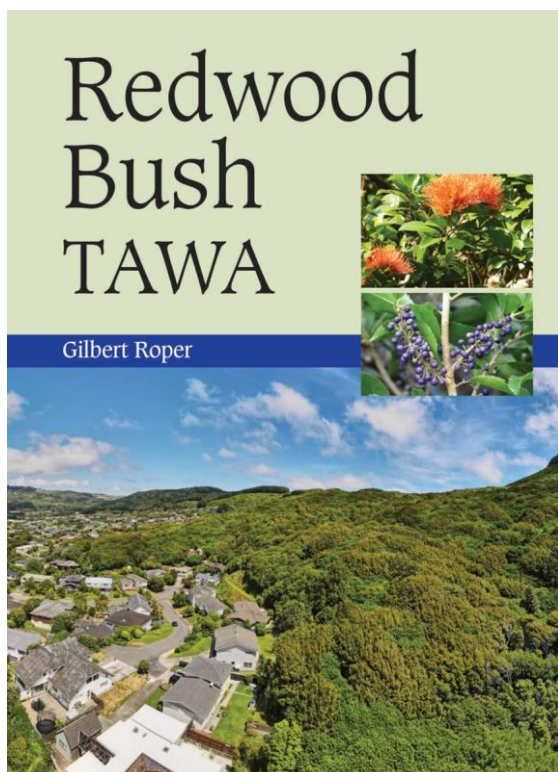
Auckland Botanical Society Newssheet November 2022: Upcoming talks and trips, Lucy Cranwell Travel Grant Applications, books for sale.

Canterbury Botanical Society Newsletter 11 November 2022: Upcoming trips and talks, meeting report for End Park wetlands, Mahu Whenua, trip report for a kānuka remnan at Eyrewell.

Botanical Society of Otago Newsletter 97, November 2022: Upcoming trips and talks, articles on syntropic agroforestry, regenerating Central Otago, *Bazzania tayloriana*, talk reports on whether leaf serration has a function, student vegetation surveys, future impacts of climate change on beech and their fungi, kānuka taxonomy, trip reports for Bull Creek, Mihiwaka, Rutherford Bush, Pipeline Track, and Mahaka Katia.

The New Zealand Native Orchid Journal 167, November 2022: New editor, farewell to Brian Molloy, *Microtis longifolia*, *Corybas cheesemani* colour forms, *Corybas* "pygmy", making sense of name changes, *Thelymitra alba*.

■ New books



The colour-illustrated, 160-page, A4 size book features:

- native bush in Tawa at the time of pioneer settlement
- some history of the Redwood subdivision
- residents of Tawa protest and action is taken
- recollections by residents of changes in Redwood Bush over time
- walking Redwood Bush in the present day
- visual details of the native flora and birds in Redwood Bush and how these have changed
- lizard studies, lichens and fungi recorded in Redwood Bush
- pest control and the resurgence of the flora and fauna
- information on a new signed botanical walk in Redwood Bush.

This book can be purchased from the Tawa Library, Corner Main Road and Cambridge Street, Tawa for \$35. There is also a limited print-run, and orders can be placed by email with Ken Woodgate, Secretary, Tawa Historical Society: ken.woodgate@xtra.co.nz.

Please note:

This book is published by Friends of Tawa Bush Reserves (FOTBR) which is a non-profit organisation and seeks to defray the cost of printing through the sales of the book.