



BOTANICAL SOCIETY
OF OTAGO



Gymnopilus junonius
Auckland, March 4, 2022.

Newsletter Number 103

November 2024

BSO MEETINGS AND FIELD TRIPS JULY — NOVEMBER 2024

Location: Talks are now held in the Benham Seminar Room 215 in the Zoology Benham Building, 346 Great King Street. This is where we used to meet pre-covid.

13th November, 5:20pm: The Sequoioideae: What can extant lineages tell us about evolution?

Speaker: Jess Paull. In ages bygone, gymnosperms were at the height of their diversity. In the modern age, many face extinction due to the looming threat of climate change. What can this group (and others) tell us about our past and our future?

23rd November, 9:00am-3:30pm: Quarantine Island exploration and picnic lunch. Join us for a day exploring Quarantine Island Kamau Taurua, a public Recreation Reserve and an Historic Area in Dunedin Harbour. Wander the trails to check out the regenerating forest and the interesting human history. Bring a pair of work gloves if you feel like doing some volunteer weeding. To book a place contact Gretchen by Wednesday 20th November as we need to book the boat in advance (boat cost will be covered by the BSO). Bring appropriate clothing, water and lunch.

6th-8th December: Catlins Weekend. This is an adventurous weekend trip up the Tautuku River in the Catlins. We will follow local experts along trapline routes through mixed old growth and regenerating podocarp forest to investigate some interesting nooks. There is potential for exciting plant sightings. This trip requires a high level of fitness; we will be covering up to 10km of very rough routes through dense forest. Bring tramping boots, wet weather gear, food, water, and first aid kit. Contact Gretchen Brownstein (brownsteing@landcareresearch.co.nz) to book a spot (drive time: 2hrs one way, ~300kms return trip). Leaving Friday evening, returning Sunday.

12th February, 5:20pm: The Hikaroroa Mt Watkin Conservation Group. Speaker: Jamie Hickling. The Hikaroroa/ Mt Watkin Scenic Reserve is a 660ha DCC reserve containing one of the best examples of remnant lowland podocarp and kowhai dominant forest in the region. Hikaroroa is also culturally significant as being the mauka tipuna for Kati Huirapa Ki Puketeraki. The Hikaroroa Mt Watkin Conservation Group is a community conservation group established in 2023 whose primary object is to protect the ecological values of the area. This talk will detail the conservation work the group has been doing and their plans moving into the future.

22nd February, 8:30am: Maukaatua track. The walk starts from Woodside Glen, crosses Lee Creek, and heads up through mixed podocarp and beech forest. The low-alpine and rocky summit provides a great lunch spot, lots of lichen and bryophytes to observe, with stunning views. The 2.7 km return walk reaches around 895m and is a steep climb in places. Bring tramping shoes, lunch/snacks and lots of water. You may get wet feet crossing the creek. If the creek is too high to cross due to heavy rain, we can enjoy a shorter walk through Woodside Glen's lush undergrowth. Meet at the Botany Department at 8:30am, or Woodside Glen at 9:10 am. Returning to Dunedin late afternoon. Contact Jo, 021 026 13580

12th March, 5:20pm: Re-evaluating some common and rare *Cortinarius* species. Speaker: Andy Nilsen. Details tba.

15th March, 9:00am - 3:00pm: Truby King Reserve, Seacliff. A day trip to explore the diverse botanical features of the Truby King Reserve (TBK). The TBK once formed part of the grounds of the Seacliff Hospital. It is now administered by the Dunedin City Council. There are survivals of the original - mostly introduced - tree plantings (which are currently being mapped). There are many more trees that have spread from the original plantings, many - native and introduced tree and shrub species - that have arrived spontaneously, and there are also ongoing informal plantings of - mostly - native trees. Some of the species present, such as sycamore, require ongoing control. The TBK has a good network of tracks, and it is a good place to visit if you like tall trees. We will investigate the different stands of

TKR to see what mosses, liverworts, fungi and lichens are present, and what is happening to the woody debris that has been left in situ following cutting and pruning. Bring good walking shoes, something to eat and drink, and clothing for the weather on the day. Meet at the Botany Department car park at 9 am and return time 3 p.m. Contact Alex, 0210510014.

Saturday 12 April – Field trip to Bungtown Conservation Area and Lake Mahinerangi. The Bungtown Conservation Area is a small (c. 3.5 ha) reserve in the headwaters of the Waitahuna River. It's a great example of an upland copper tussock bog with stands of bog pine (*Halocarpus bidwillii*). There's also a population of the declining *Carex tenuiculmis* sedge. After exploring this area we'll visit the nearby shore of Lake Mahinerangi where some lake shore turfs have tiny herbs such as the nationally vulnerable *Gratiola concinna*, mudwort (*Limosella australis*) and declining Maniototo button daisy (*Leptinella maniototo*). Meet at the Botany department car park at 9 am. Return by 4 pm. Leader John Barkla 027 326 7917.

Note: Please review the trip guidelines for participants, drivers and leaders on our website. bso.org.nz/trip-guidelines

Meeting details: Talks are usually on Wednesday evening starting at 5.30 pm unless otherwise advertised. Venue is the **Zoology Benham Building**, 346 Great King Street, behind the Zoology car park by the old Captain Cook Hotel. Please use the main entrance of the Benham Building to enter and go to the **Benham Seminar Room, Room 215**, located on the second floor.

Items of botanical interest for our buy, sell and share table are always appreciated. The talks usually finish around 6.30 pm. Keen discussion might continue till 7 pm.

Field trip details: Field trips leave from Botany car park 464 Great King Street unless otherwise advertised. Meet there to car pool. Please contact the trip leader before Friday for trips with special transport and by Wednesday for full weekend trips. A hand lens and field guides always add to the interest. It is the responsibility of each person to stay in contact with the group and to bring sufficient food, drink and outdoor gear to cope with changeable weather conditions. Bring appropriate personal medication, including anti-histamine for allergies. Note trip guidelines on the BSO web site: www.bso.org.nz



Flax flower (Photo: Lydia Turley)

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2025 calendar available now

Cover illustration by Tate Agnew: “Gymnopilus junonius”. Winner of the 2024 Audrey Eagle botanical illustration competition.

FROM THE COMMITTEE

Chair's notes

Gretchen Brownstein

I'm writing this during one of the worst rain events in Dunedin's recent history. Watching the water streaming down through the paddocks and seeing the slips developing is yet another reminder of how important our native trees and shrubs are for stabilising hillsides. I was recently working on a project in Tairāwhiti assessing the impacts of Cyclone Gabriel on lowland native bush fragments. The sheer scale of the impacts were amazing, and sadly, will be long lasting.

In other news, I would like to draw your attention to a couple recent plant publications. On the 1st of October Department of Conservation released the 'Conservation status of vascular plants in Aotearoa New Zealand 2023'. This publication reassesses the conservation status of 2844 taxa of indigenous vascular plants in AoNZ using the New Zealand Threat Classification System. And the news is mixed; of the 336 taxa with a change in conservation status from the 2017 assessment, 110 have improved, 161 have worsened status, while the remaining 62 had neutral changes. You can download a copy here <https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs43entire.pdf>

The other publication is a threat classification for vascular plants in Otago. It's very exciting as this is the first regional vascular plant threat classification to be completed for Otago! The threat status of all 1242 known indigenous vascular plant taxa were assessed; of those, 18% are Regionally Threatened (227 taxa), 22% are Regionally At Risk (275 taxa), and 9.5% are Regionally Data Deficient (115 taxa). And there are 36 taxa which are currently only found in Otago. You can download the full report here: [https://www.orc.govt.nz/environment/biodiversity/otago-regional-threat-assessments/#:~:text=Otago%20was%20identified%20with%2036,Threatened%20or%20At%20Risk%20categories\).](https://www.orc.govt.nz/environment/biodiversity/otago-regional-threat-assessments/#:~:text=Otago%20was%20identified%20with%2036,Threatened%20or%20At%20Risk%20categories).)

The last announcement is that applications are now open for the Jennifer & Peter Bannister Student Grant for Botanical Research. These grants (worth up to \$2000) can be used to assist a student study-

ing for the degree of PhD, MSc, BSc (Hons) or B. Appl. Sci. in any tertiary institution in New Zealand, whose thesis project deals with some aspect of New Zealand's flora and vegetation. Priority will be given to projects relevant to the Otago and Southland regions. See the BSO webpage for details and application forms.

Wishing everyone a happy summer of botanising and remember BSO calendars make great gifts!

Secretary's notes

Angela Brandt

Welcome to our new members, Kim Patterson, Sarah Reuben-Hallock, Joshua Harrison, and Tate Agnew! And welcome back to returning members, Aimee Pritchard and Mike Small! Finally, congratulations to the prize winners in this year's Audrey Eagle Botanical Drawing Competition!

As you get out and about this summer, you might think about capturing photos of any unusual weeds you see around the motu, to post to iNaturalist in addition to any interesting native species observations. Kate McAlpine and Clayson Howell from the Department of Conservation (DOC) have just published an updated List of environmental weeds in New Zealand 2024 (<https://www.doc.govt.nz/globalassets/documents/science-and-technical/sfc340.pdf>), which includes 386 plant species legally categorised as pests or managed by DOC that are known to be fully naturalised and have impacts in natural ecosystems. Interestingly, though, nine species in this list have no iNaturalist records in Aotearoa (see list below), though several of them are included in Regional Pest Management Plans of one or more regions (mostly in the North Island). Another useful list of weedy species to keep an eye out for are the few dozen species included in the 'Emergent Weeds NZ' iNaturalist project (<https://inaturalist.nz/projects/emergent-weeds-nz>). Getting some observations into iNaturalist is a great first step in better understanding the risks of invasion by these species across the motu, and thus being able to potentially manage them. Just like a new-to-region observation of a native plant, more records of these species will be incredibly valuable to our bo-

tanical, ecological, and conservation communities!

Nine environmental weeds not yet recorded on iNaturalist NZ

- *Baccharis halimifolia* (baccharis)
- *Biancaea decapetala* (Mysore thorn)
- *Bryonia cretica* (white bryony) - a National Interest Pest Response (NIPR) species*
- *Buddleja madagascariensis* (orange Madagascar buddleia)
- *Imperata cylindrica* (blood grass)
- *Moraea flaccida* (Cape tulip) - a NIPR species*
- *Passiflora mixta* (banana passionfruit) - one of three species sharing this common name
- *Pinus monticola*
- *Reynoutria × bohemica* (bohemian knotweed; syn *Fallopia japonica × sachalinensis*)

*NIPR is an eradication programme run by the Ministry for Primary Industries (MPI): <https://www.mpi.govt.nz/biosecurity/exotic-pests-and-diseases-in-new-zealand/long-term-biosecurity-management-programmes/national-interest-pest-responses-programme/>

Editor's notes

Lydia Turley

Thanks yet again to all our fantastic contributors. We have had a busy few months, and the reports section is full. A special thanks to Alyth Grant for proof-reading.

I was pleased to spot a poem about botanising on a big billboard while wandering around town recently. I've included a photograph (right).

Keep an eye out for botanical stories over the summer. We would love to hear about your adventures—notes are always welcome in the newsletter. Make sure to get some snaps for the photo competition, and it's always a good time to try some botanical art.

The cover illustration was the first place winner in the Audrey Eagle Botanical Illustration competition. It is a lovely piece of work. Now is a good time to be inspired to take your pencils out and practice before the next

competition. It would be great to have some more entries next time!

Editors guidelines: Suggestions and material for the newsletter are always welcome. We welcome stories, drawings, reviews, opinions, articles, photos, letters – or anything else you think might be of botanical interest. Remember to include photo captions and credits. Please keep formatting to a minimum. Send your feedback, comments or contributions to lydiamturley@gmail.com. Copy for the next newsletter is due on 10 February 2025. Earlier submissions are most welcome.

Disclaimer: The views published in this newsletter reflect the views of the individual authors and are not necessarily the views of the Botanical Society of Otago.

Bereavement

Jean Bretherton died on October 15, 2024. Jean did sterling service as Treasurer and was a long-standing active and supportive member.

Botanising

I'm sitting on the gravel where the cars pull in
outside the paddock gate. It's too early for devices
so as my pony grazes I dawdle my hand among the weeds.

Knowing the pleat of a plantain leaf, I tug and knot
the hairy stem around itself to spring the feathered nub.
It jumps a distance and I look after, idly.

There I discover a thing: that this verge of afternoon dilates
the closer down I get. The grain and scatter makes me small
of quiet. There's a drift here I can follow.

Into the corolla of a flower. Say, a buttercup:
its name is to lightly hold, to settle on this yellow brim
that cradles me as I sit there still.

I still remember sitting by the road's edge
in the petals when a ute's tyres crunched and a man
leaned out to ask me what I was doing.

With no thought I said, I'm waiting to be picked up.
If you stay there you will be, he told me. But I am distinct
from that flower and from him, as I had noticed.

From Megan Kitching *At the Point of Seeing* (Otago University Press, 2023)



Megan Kitching is an Ōtepoti Dunedin poet. Her debut collection *At the Point of Seeing* (Otago University Press, 2023) won the 2024 Mātātahi Foundation Jessie Mackay Prize for a best first book of poetry at the Ockham New Zealand Book Awards. In 2021, she was the inaugural Caselberg Trust Elizabeth Brooke-Carr Emerging Writer Resident.



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More about the Phantom Poetry on Posters Program at www.0600phantom.co.nz/blog/poetry or Friend Phantom Billstickers on Facebook for updates.

Botanical poetry seen in Dunedin. From the publishers: '*Botanising*' is from Dunedin poet Megan Kitching's debut collection *At the Point of Seeing* (Otago University Press, 2023), available from oup.nz/point-of-seeing. *At the Point of Seeing* won the Jessie Mackay Prize for best first book of poetry in the 2024 Ockham New Zealand Book Awards, and was awarded the Best First Book (International) prize in the 2024 Laurel Prize (UK).

ARTICLES

Charbroiled

James Crofts-Bennett

Some of you may be familiar with the fire that overtook the earthquakes reserve up near Oamaru earlier this year. As fellow botanists, I suspect you have similar concerns, that gnawing concern for a habitat ravaged. Don't worry, we went out, real boots on the ground botany, and I have the answers you're looking for. I'll answer the most pressing question immediately, spider eggs, when charbroiled in a wildfire, go hardboiled just like chicken eggs. Okay, it was a field study, well survey, I mean I found a single ova sac... probably premature to assume the chemical processes are even remotely similar. The reality is, the ova sac, despite lack of immediate burn damage (it was protected from direct burning, concealed in a lidded tunnel), was filled with little vulcanized rubber eggs.

Okay, that's the key point out of the way, the rest of this is just boring field notes, feel free to skip ahead.

So myself, Janice and some dude named Casey made our second visit to the post-fire earthquakes reserve (sadly, no signs of the earthquakes, I fear the fire has driven them locally extinct). We had previously visited with the kind folks at DOC from the local office, discussing future efforts to survey and record the impacts of the fire. The fire had consumed large amounts of the long grass but largely missed the deeper ravines (an artificial bank created to shelter some plantings also preserved said plantings, some of you may have been curious).



The ashen fields (Photo: James Crofts-Bennett)



A lidded *Cantuaria* tunnel (Photo: James Crofts-Bennett)

The burn off inadvertently revealed a surprising diversity of invertebrates previously obscured in the long grass. The obvious primary find was the frankly shocking density of *Cantuaria* trapdoor spiders that had been hiding in plain sight. The sooty hillside was pocked with the large, characteristic tunnels, some still with hinged lids. Unfortunately, we haven't had the chance to identify which specific species was on site. The spiders were able to avoid immediate incineration due to the subterranean nature of their abodes, but for unknown reasons suffered fatalities regardless. Some of this can be attributed to heat death, not all the tunnels were particularly deep (some as short as 20cm) and shallower tunnels likely failed to provide a safe distance from the radiating heat of the flames. Likewise, exposure of the tunnels may have increased predation of spiders by birds, skinks and mice. It was noted that delirious spiders were observed wandering the ashen fields immediately following the inferno, during the daylight hours (which is essentially suicide by bird for a large-bodied spider like *Cantuaria*).

Cantuaria are difficult (or rather, completely impossible) to identify without genitalia, which means you need an adult spider. We did find juveniles hiding under limestone boulders (merciful Tāne and Tūparimauka be thanked). Identification difficulties are compounded by the surprising diversity of *Cantuaria* found in the Oamaru area, with five described species (*Cantuaria napua*, *C. vellosa*, *C. grandis*, *C. gilliesi* and *C. marplesi*) and at least two undescribed species as noted by Forster in *Spiders of*

New Zealand (1968). While *Cantuaria* species populations are often geographically isolated relative to other spiders, they can still be sympatric and Oamaru is notorious for this (without any spiders to actually nail down an identification, we could have been looking at all seven species for all we know). As it turned out, Oamaru was essentially the cradle of New Zealand trapdoor spider taxonomy (true, *Migas* was earlier but that's a migid, which doesn't count); the very first species being described here (*Cantuaria gilliesi*, 1877, then *Nemesia gilliesii*, discovered by a local farmer (Gillies) and sent to Pickard-Cambridge). This is just a bunch of words to tell you I need actual spiders before I can tell you they're even spiders. DOC has been mercifully receptive and most helpful in offering access so I can collect samples (cheers!).



Cantuaria marplei (left) and her lady parts (right) (Photos: James Crofts-Bennett)

Of course, it's not all JUST trapdoor spiders, we are botanists after all! So now allow me to describe the OTHER spiders we saw. Juvenile *Uliodon* and adult *Anoteropsis* were present and running business as usual (I'm not sure if the wolf spiders even noticed the fire, they were making tracks through the ash like Dunmeri pilgrims, unbothered by the blighted land). The silvery vagabond (*Anzacia gemmea*) was common under the limestone boulders, but they're common throughout Otago under stones, so that's probably not very surprising (they had viable ova sacs, suggesting the boulders offered protection from the fire).

Going off topic a little here, there were some other surprising signs of previous life in the ashen ruins. The ground was littered with carbonized shells of Charopid snails, thousands of little ashy white coffins dotting the blackened hill like some beautiful dark body covered in twinkling white spots (if you

can think of an appropriate analogy, let me know. I'm a spider nerd; they should have sent a poet). Returning to the limestone boulders mentioned earlier, we also observed *Megadromus* (carabid beetles, flightless), *Forficula* (not really surprising, where don't you find earwigs?), *Notoniscus* (a native isopod, usually associated with forests which makes them the most surprising find of the trip) and *Porcellio scaber* (which is not surprising, but always pleasant, who doesn't love slaters?). We also observed earthworms and slaters in excavated *Cantuaria* tunnels, at least partially contributing to the large number of tunnels that had experienced some degree of cave in (which is great evidence that the tunnels are abandoned).

I will say, looking down into the valley of the earthquakes reserve was a little unnerving, the place had been utterly carpeted in flora during my pre-cataclysm trip and I had no idea just how many ravines intersected the walking track. I was a little sad to see it all barren and blackened but the entrance where all the matagouri had been was relatively unscathed (we found the native New Zealand mantis in those shrubs back then). No signs of the wilding honeybee on the cliff faces this time (the smoke would have probably choked them out anyways, a concern as without honeybees, we would lose the primary host for *Varroa*, which would be a real tragedy).

Janice mentioned multiple times about a specific plant of some sort that was known from the reserve. Unfortunately, that was like, three, four months ago? Even if I had been paying attention, that's a really long time to remember the name of a plant you half heard while looking for spiders in the ash. She seemed excited about it, I think they found several spared or at least not totally destroyed by the fire. We're going back (DOC gave me permission



A skink found roaming the ash (Photo: James Crofts-Bennett)

and I have a permit), I even got some funding from the entomological society to try and describe the undescribed *Cantuaria* species if we can find them.

Ash gets everywhere, my boots still leave my hands blackened when I put them on.

Editor's note: I contacted Janice about these vague references to plants. Her reply is below. Casey Cuthbertson will be following the recovery of the vegetation as part of his PhD.

Botanical notes

Janice Lord

The two Nationally Critical species in the reserve are *Gentianella calcis* and *Lepidium sisymbrioides*. The known plants of *G. calcis* all survived, with the main cliff edge population surviving thanks to being surrounded by a scraped bund where various native woody species had been planted with wool weed matting. The fire diverted around the bund and did not burn that area at all. One large *G. calcis* along the northern ridge had burnt but was resprouting (Figure 1).



Figure 1: Waipata gentian 3 months post fire (Photo: Janice Lord)

We were hoping to find *Lepidium sisymbrioides* (Brassicaceae) resprouting in the burnt area and I got very excited when we found several rosette herbs with fine pinnately divided leaves, but they turned out to be *Chaerophyllum novae-zelandiae* (Apiaceae; syn. *Oreomyrrhis rigida*) which was still a nice find but not as exciting as I first thought! Those would be the plants James refers to. They had clearly been surviving under the dense

Fescue mat and were recovering quickly following its removal (Figure 2).



Figure 2: *Chaerophyllum novae-zelandiae* in Waipata north gully 3 months post fire (Photo: Casey Cuthbertson)

As for other plants- no native shrub species in the main part of the fire were resprouting at the time we inspected them.

Species that appeared completely dead were *Discaria toumatou*, *Carmichaelia petriei*, *Coprosma* sp. (probably *propinqua*) and *Melicytus alpinus*. The lone large kōwhai also showed no signs of resprouting. Seeds I extracted from charred pods collected 3 weeks after the fire (Figure 3) failed to germinate with or without nicking,



Figure 3: Waipata reserve 3 weeks post fire (Photo: Janice Lord)

REPORTS

Plant diversity under native and exotic forests, a talk by Aimee Pritchard, 12th June

Jo Sinclair

Aimee Pritchard took us on a deep dive about her MSc findings on plant diversity that occurs in native and exotic forests around Otago. Seven sites were surveyed, measuring the undergrowth of both vascular and non-vascular plants within 18 plots. Aimee explained that seed source availability was an important control for the study so exotic plots were located within 300m of the native plots. As an example of canopy cover, the Rankleburn site included *Fuscospora fusca* within native plots and *Pseudotsuga menziesii* in the exotic sites.



After high winds (Photo: Aimee Pritchard)

Field work was not without challenges, with high winds being the most difficult one to navigate. The unsettling creaking of mature trees sent the crew home early one day. When returning to the site, it was clear that Aimee had made the right call as a 100-year-old tree had fallen, blocking their path. Fantastic management skills I say! Although, if you do go out in the field with Aimee, it sounds like you might want to prepare yourself for wasp stings, as members of the team had a rough time with these. But, we can't blame her for that one.

Despite these challenges, Aimee identified a whopping 2308 plants, that included 132 vascular species (45 exotic and 87 native) and 120 non-vascular (50 liverworts and 72 mosses). It was hypothesised that there would be an increase in understorey plant diversity within native forests compared to exotic. Surprisingly, the findings were a little more complex. Comparing na-

tive to exotic canopy types, there was no difference in total species richness, although native diversity was consistently higher across both native and exotic canopies. In comparison, exotic understorey species showed no difference between the two canopy types - however native plant diversity was highest under native canopies compared to the measured exotic plots. Exotic canopies may provide a suitable habitat for native establishment when there is a local seed source. This does not trump native forests though, as the native understorey did consist of higher native diversity compared to the exotic plots.

What I really found inspiring about this project was



(Photo: Aimee Pritchard)

that even with restricted time, Aimee identified all the bryophytes that were found in her plots. This must have been a time consuming task but provides New Zealand with valuable data that could have easily been ignored. This inclusion is particularly interesting as Aimee mentioned that bryophytes can act as seed beds for plant establishment and their findings showed a positive correlation between vascular and non-vascular species.

Aimee summarised her talk with an additional question, why wouldn't you want to do this work? She got to explore sites like the Blue Mountains that otherwise wouldn't be accessible. And like most research, what she found sparked further possibilities to explore, such as taking this further and looking at native seed dispersal throughout the forests, to gauge how the centre looks. She also touched on a few bonus findings that are yet to be published, so keep an eye out for her research. I think there is plenty more to come! Great stuff Aimee! Thanks for an awesome talk.

Field trip to Frasers gully, 15th June

Alex Wearing

Damp conditions did not dampen the enthusiasm of the keen group of botanists who walked up Frasers Gully on the well-formed track that passes through the mostly bush-clad north side of the Kaikorai Stream to Dalziel Road. The group returned by a track on the south side of the Kaikorai Stream that initially runs along the boundary between bush and houses, before entering a small patch of remnant podocarp-broadleaved forest, then emerging into former pasture, and descending a slope to the Kaikorai Stream, where a bridge connects to the track on the north side of the river.

The Kaikorai Stream is fast-flowing and walking up Frasers Gully involves crossing the base of some steep slopes. The Kaikorai is a rapid-response catchment. Water levels can rise very rapidly during rain events to impressive volumes of water. In Frasers Gully there is frequent evidence of eroding stream banks and slips on slopes.

The first section of the track is bounded by sloping grassy lawns. These are poorly drained and are sodden after rain.

Before the main forested stands are reached there is an area of planted native trees. Species present include: kahikatea (*Dacrycarpus dacrydioides*), rimu (*Dacrydium cupressinum*), miro (*Pectinopitys ferruginea*), matai (*Prumnopitys taxifolia*), Hall's totora (*Podocarpus laetus*), and fierce lancewood (*Pseudopanax ferox*). These trees were planted about 15 years ago and they all seemed to be flourishing.

Upon reaching the bush proper we walked through mahoe-broadleaved forest^{1,2}. Much of the valley bottom is lined by wineberry/makomako (*Aristotelia serrata*) and tree fuchsia (*Fuchsia excorticata*). Both species are also widespread on footslopes and sideslopes that have been cleared in the past or have experienced slips. Some wineberry leaves were very long, A leaf length of 18.5cm was measured for a wineberry growing at a shady site. In *Trees and Shrubs of New Zealand* (1980)³, the maximum length of wineberry leaves is noted as 12cm. Many of the tree fuchsia were of impressive size. Mahoe (*Melicytus ramiflorus*) is also common. Other species present include pate (*Schefflera digitata*), tarata/lemonwood (*Pittosporum eugenoides*), broad-leaf (*Griselinia littoralis*), kanuka (*Kunzea robusta*), matipo (*Myrsine australis*), *Coprosma rotundifolia*, *C. dumosa*, *C. linarifolia*, *C. robusta*, a large-leaved *Coprosma* 'hybrid', *Pennatia corymbosa*, marbleleaf/putaputaweta (*Carpodetus serratus*), *Pseudopanax colensoi*, pepperwood (*Pseudowintera colorata*), and astelia (*Astelia fragrans*). The mistletoe (*Tupeia antarctica*) was observed growing on a marbleleaf.

A mature rimu could be seen from the track. The core of the pre-European forest remnant in Frasers Gully occurs on the true right bank, where there are "several rimu, and a few matai, miro, kahikatea and totara, emergent from a 5-8 m tall canopy of fuchsia, mahoe, lemonwood and other broadleaved trees" (p.3¹).

The track passes a small clump of multi-leadered totara, some of which were growing at the top edge of a high bank. The totara may have been saplings that were left when the area was cleared in the late 19th century. Their form suggests they have spent much of their lives in more open situations than occurs now. Younger totara trees were noted further up Frasers Gully, near Dalziel Road.

In parts of the forested area there are scattered exotic trees that reflect former site clearance, a period of use by people, and then reestablishment of native woody vegetation. Some edge habitats featured some impressive expanses of *Muehlenbeckia australis*.

There were numerous examples of coprosmas fruiting extensively on one aspect/side of the plant, with fruit being absent on other aspects/sides. This pattern probably reflects plant orientation and its position and proximity with respect other to plants.

In many places there is a ubiquity/plethora of fern, including several species of *Asplenium*, as well as species of *Austroblechnum*, *Parablechnum*, and *Cranfillia*. Wheki/tree fern (*Dicksonia fibrosa*) was also present.

The moss *Cyathophorum bulbosum* was found growing on rocks by the track that had been placed there by people. It was good to see a native moss benefiting from human action. A former power pole standing in the bush was observed to have a dense cover of lichens.

At a stream confluence John Barkla revealed the presence of a small spatially restricted population of the introduced *Claytonia sibirica*, a small flowering plant - with numerous common names – native to the Aleutian Islands and western North America. It grows close to a bank of the minor stream tributary and can probably tolerate occasional immersion. *Claytonia sibirica* seems to be an example of an introduced species that has naturalized or gone wild, but only in a few places⁴.

An unwanted introduced plant noted in Frasers Gully is Darwin's barberry (*Berberis darwinii*). It is to be hoped that it is prevented from spreading.

There seem to have been numerous plantings along the upper section of the track on the south side of the Kaikorai Stream. Plantings include koromiko/hebe (*Veronica salicifolia*) and manuka (*Leptospermum scoparium*).

On the south side track, two large totara and one large matai were seen. These trees are probably hundreds of years old. Close to the matai were a few matai seedlings growing at a precarious site adjacent to the track. There is some totara regeneration occurring at Frasers Gully, but plantings of

seedlings from local seed will be needed to increase numbers of rimu, matai, miro and kahikatea.

The lower section of the south side track descends a grassy slope that has recently been extensively planted with species such as kanuka, manuka and lemonwood. There are also two old apple trees that are hosting the mistletoe species *T. antarctica* and *Ileostylus micranthus*.

Frasers Gully is a great area to learn native plants. Some of the species present in Frasers Gully have very patchy or scattered distributions. Coming up with convincing explanations for the patterns present is a good challenge for people who like spatial ecological puzzles.

The field trip was ably led by Angela Brandt. I would like to acknowledge the impressive species checklist compiled by John Steel.

Notes

1. Allen R.B. 1987. *Frasers Gully Proposed Reserve: Reserve Survey*. Botany Division DSIR Report. Report (New Zealand Botany Division); 618.
2. In the wider catchment Allen (1987) also describes kowhai (*Sophora microphylla*)-mahoe forest, kanuka forest, podocarp-broadleaved forest, rough grass/weeds/exotic scrub, and exotic trees habitats.
3. Poole, A. I. and Adams, N. M. 1980. *Trees and Shrubs of New Zealand*. Government Printer, Wellington.
4. John Barkla pers. comm.

Members Night, 10th July 2024

Angela Brandt

We gathered for a delightful hour of sharing some drinks and nibbles (thanks to Gretchen for preparing these), perusing books that Jo Sinclair and David Lyttle had brought to donate to good homes (including some from Audrey Eagle's collection), and hearing some interesting stories.

David shared photos from his experiments trying out a new camera lens. It was fascinating to see how the depth of focus could shift under different settings, especially with the very small plants as subjects.

Allison Knight shared the story of her work with Jen-

nifer Bannister and Dan Blanchon to reinstate the taxonomic identity of *Usnea capillacea* Motyka, confirming that it is not a synonym of *U. articulata*. She included a brief mention of this work when she gave the Geoff Baylis Lecture in September as well. The NZPCN online flora record for *U. capillacea* includes the reference for this reinstatement of the name: <https://www.nzpcn.org.nz/flora/species/usnea-capillacea/>.

Finally, John Barkla presented us all with a mystery! He passed around a specimen he had come across at the Kaikorai Lagoon (Fig. 1), asking everyone if they had a guess of what it was. This sparked a good bit of discussion and laughter as we all posed questions about where it was found, held and shook it, knocked on it, and so on. John admitted that he hadn't been fully confident of his own ID, but that Lloyd Esler confirmed it on the observation he posted to iNaturalist (<https://inaturalist.nz/observations/219263202>). We did get to the correct answer in the end - can you figure it out?



Figure 1: A mystery specimen John Barkla came across at the Kaikorai Lagoon and posted to iNaturalist. (Photo: John Barkla)

Field trip to Ben Rudd's Hut, 13th July

Gretchen Brownstein

On a very chilly windy winter day a group of intrepid botanists walked a loop from the Bull Ring along the fire track, down to Ben Rudd's Hut and back along an unnamed path, with short side trip out to Big Rock. Due to the chilly temperature the pace along the fire track was very fast (by botanist's standards) and frozen things were a theme for the walk. The ice encasing the leaves and stems of everything made even the gorse (*Ulex europaeus*) look a bit glamorous.



Weird toothy white fungus - Genus *Pseudohydnum* (Photo: Skyler Morison)

Once the group reached the track that leads down to the hut through regenerating bush, the pace slowed while we admired tiny frozen fungi, the lovely architecture of the coprosmas, and the vast number of fruits still present on the kāpuka (*Griselinia littoralis*). Deeper into the bush the track past a couple depositing pine logs covered in seedlings of kāpuka, makomako (*Aristotelia serrata*) and ferns. It was really heartening to see palatable species on the ground, though later we did see a fair amount of pig sign.

After a morning tea break at the hut site, some checked out lichens on the kōtukutuku (*Fuchsia excorticata*), while others investigated the biggish mountain beech trees (most likely planted). We then decided to carry on along an unnamed track that, while well-established, wasn't on any of our maps. It appeared to be heading in the direction we wanted to go, so we thought it was time for the adventure portion of the trip. This chance decision resulted in seeing one of the botanical highlights of the trip: *Melicytus* aff. *flexuosus*. This species is reported

from a couple other locations around Flagstaff and Swampy area. Those in the know say it is likely to be a stable hybrid of this species.

Once the *Melicytus* was well documented, we continued climbing up the track which eventually popped out of the bush at a big rock with a great view over the Silver Peaks and out to the Rock and Pillars. This kicked off a discussion about finding the actual Big Rock, so we set off on a wee side trip to see the real deal. This track had a few more weeds, including wilding pines, but also some interesting fungi in base of fans of the harakeke (*Phormium tenax*). After lunch at the actual big rock, we headed back to the Bull Ring and the cars and home to warm up.



Gilled white fungus on harakeke - *Gliocephala phormiorum*
(Photo: Skyler Morison)

While it was a chilly morning adventure, the company and the conversations were great.



Orange discs - Genus *Orbilina* (Photo: Skyler Morison)

Field trip to Aramoana Ecological Area, Otago Harbour, 3rd August

Alex Wearing

A keen group of botanists gathered at Aramoana Domain to explore the Aramoana Ecological Area (AEA). The Aramoana saltmarsh is dominated by saltmarsh and New Zealand flax (*Phormium tenax*) dominated swamp areas. It is 74.5ha in area. It is the most extensive and least modified saltmarsh in Otago. There is a high degree of naturalness and a complete sequence of tidal to dryland habitats. The Aramoana saltmarsh has a zonation from outer salt marshes to inner salt marshes and then to dunes/dune slacks. The marsh zones are largely intact, but the dunes/dune slacks, whilst containing many native species, also have many introduced species. The adjoining landward coastal forest is 'missing' from the sequence. The Aramoana saltmarsh is also important habitat for wading birds, insects, and the denizens of mudflats.

The field trip started in the Aramoana Domain followed by a walk on the boardwalk to look at the dunes, dune slacks and salt marshes.

The saltmarsh had extensive areas of glasswort (*Sarcocornia quinqueflora*) and eelgrass (*Zostera muelleri*). At the saltmarsh fringes knobby clubrush (*Ficinia nodosa*), oioi/jointed rush (*Apodasmia similis*) and saltmarsh ribbonwood (*Plagianthus divaricatus*) were present. Wet dune hollows or slacks contain swamp vegetation dominated by areas of New Zealand flax, and by native rush and sedge communities.

On the dunes, species present included saltmarsh ribbonwood, several species of *Coprosma*, koromiko/hebe (*Veronica elliptica*), broadleaf (*Griselinia littoralis*), kohuhu (*Pittosporum tenuifolium*), *Helichrysum filicaule*, ngaio (*Myoporum laetum*), manuka (*Leptospermum scoparium*), and kanuka (*Kunzea robusta*). Some species present such as taupata (*Coprosma repens*) are not naturally found in Otago. Two ferns were seen: *Parablechnum procerum* and *Austroblechnum penna-marina*. Introduced species noted included tree lupin (*Lupinus arboreus*), gorse (*Ulex europaeus*), broom (*Cytisus scoparius*), and Spanish heath (*Erica lusitanica*).

An area of sump vegetation with a moss dominated

ground cover adjacent to a stand of radiata pine (*Pinus radiata*) pines in Aramoana Domain had numerous pine seedlings. Also present were seedlings of manuka, broadleaf, kohuhu, and *Coprosma* spp.

A walk was made through an area of planted native trees behind the Community Hall. This arboretum is a New Zealand tree garden of sorts with winding paths. Some of the native species present, such as kawaka (*Libocedrus plumosa*) and kauri (*Agathis australis*) are far beyond their natural range, whereas others such as red beech (*Fuscospra fusca*) do not naturally occur in coastal Otago. Also present are huge swathes of blackberry (*Rubus* sp.) broom, gorse, and radiata pine. Past control has left plenty of plants alive to reinvade.

More walking led to Aramoana's Spit Beach. In the marram grass (*Ammophila arenaria*) dominated dunes we looked at a stand of pines (*Pinus radiata*) and tree lupin that is frequented by female New Zealand sea lions (*Phocarctos hookeri*) and their pups (It is akin to a creche.). This area has been enhanced - for sea lions - by the planting of several hundred ngaio. The aim is to facilitate a long-term conversion to coastal ngaio forest.

A return to the Aramoana settlement was made via a track (informally called the 'Middle Track') that extends across an extensive dune system to Mokia Street. This track was lined by many woody and non-woody species such as ngaio, *Coprosma propinqua*, a *Coprosma propinqua* x *robusta* hybrid, kohuhu, broadleaf, cabbage tree (*Cordyline australis*), hound's tongue fern (*Zealandia pustulata* subsp. *pustulata*), as well as *Olearia avicenniifolia* and a variegated New Zealand flax (The last two plants are probably garden escapes.). It would be interesting to know whether the presence of the track was responsible for some of the plant diversity observed, but running a transect parallel to the track would be a slow and very difficult exercise. As the track approaches the settlement there was a pronounced increase in the extent of bracken (*Pteridium esculentum*) and the space occupied by other invasive spreading and climbing problem plants.

The variety of habitats and the number of species in the AEA is remarkable, as is the spectrum from intact to extremely disturbed vegetation. It is to be hoped that it is possible to continue to protect intact vegetation to remove - or least largely control - the

most serious plant invaders, and to create areas of ngaio forest that offer safe places for sea lions and hoiho/yellow-eyed penguins (*Megadyptes antipodes*).

The field trip was ably led by Bradley Curnow, who has devoted a lot of time and energy to conserving and enhancing the indigenous plant, animal and ecological values of the AEA.

Drawing afternoon at the Otago Museum, 10th August

Lydia Turley

Unfortunately, exactly one person turned up for this event: me. Regardless, I had a lovely time. The museum atrium was a relaxing place to sit and draw. One of the museum staff came to chat – he had grown up being encouraged to practice impressionist style live sketching.

I had a large collection of books with botanical illustrations in tow and flicked through a few but they did look quite intimidating. I ended up warming up drawing a hibiscus flower from a photo reference. I should have brought some fresh native greenery.

Overall, I had no idea what I was doing, but it was an enjoyable way to spend a few hours on a winter afternoon. I would do it again—preferably with company.



Drawing attempt number one

Passcode: ml6?H1A?

Field trip to Okia reserve, 14th September

Bradley Curnow

A bunch of keen botanists assembled in the Okia reserve car park on a cold and cloudy day. The reserve is jointly owned by the Yellow-eyed Penguin Trust and the DCC. Located near the end of the Otago peninsula the reserve is bordered by Victory beach and its NZ Sea Lion population.

First up, a look at the plants at the reserve's entrance which contains many plantings undertaken over the years by the Yellow-eyed penguin Trust. Two notable plants assumed to be local *Melicytus alpinus* and *Myoporum laetum* were observed in addition to the plantings. Two other local plants were *Urtica ferox* and *Solanum aviculare*.

Then we walked up the little pyramid through an interesting assortment of largely woody shrubs of coprosma or weatherbeaten trees of which *Corokia cotoneaster* with its tiny yellow flowers impressed. *Griselinia littoralis* and *Pittosporum tenuifolium* in flower were also observed as was a mistletoe *Korthalsella lindsayi*.



Female Clematis paniculata (Photo: Bradley Curnow)

After we had admired the view we headed down to the undulating flats to explore the dunes and the depressions between the dunes which contain a variety of turf, bogs and ponds. We observed some lovely *Clematis paniculata* in flower and also *Olearia*

avicennifolia. Large clumps of *Muehlenbeckia australis* were observed but the rare moth which only feeds on that plant *Pyrgotis eudorana* was not. *Phormium tenax*, *Poa cita* and *Apodasmia similis* were also seen on these flats.

Really sad to see the loss of the reserve's indigenous herbaceous plants which appear to have been smothered by introduced grasses now that animal grazing has been stopped. *Gaultheria macrostigma*, *Lycopodium volubile* and *Astrolycopodium fastigiatum* were seen however.

A great day out. Thanks to David Lyttle for leading.



An adventurous botanist (Photo: Bradley Curnow)

Drawing competition

This year we had four excellent entries from two artists. Belinda Smith Lyttle and Marcia Dale were capable judges. Drawings were displayed and results announced at the October meeting.

Winner: *Gymnopilus junonius* by Tate Agnew (cover illustration)

Second place: *Pentachondria pumila* by Kelly Phillips

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Right: Fuchsia excorticata (Artist: Kelly Phillips)



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