



BOTANICAL SOCIETY

OF OTAGO



Newsletter Number 82

October 2017

BSO Meetings and Field Trips

Saturday 7th October 8.00 am Field Trip to Flat Top Hill, Central Otago. Flat Top Hill is just that – a flat top hill, about 11 km long, parallel to State Highway 8 on one side and Lake Roxburgh on the other and located just south of Alexandra. It rises gently to a flat crest dotted with schist tors and comprises a broad range of dry vegetation types which host a number of unusual species, including several small summer annuals. We will be concentrating on the drier, northern end which includes Butchers Dam with its own suite of aquatic plants, and palaeosols with some seldom seen saline loving species. Involves a two and a half hour drive from Dunedin so meet at Botany Department car park 8.00 am returning 6.00 pm. Contact John Steel, 021 2133 170 or email john.steel@otago.ac.nz

Wednesday 11th October 5.20 pm Botanical Show and Tell. This is a chance for BSO members to bring some item of botanical interest to the meeting and talk about it. You are welcome to bring plants, botanical art, books or photographs for display and/or sale. You may wish to present a brief PowerPoint presentation, printed material, or anything else with a botanical theme. Just turn up with your treasures, trophies, experiences and questions and share them with fellow BSO members for an entertaining and lively evening. (Please note this members' night replaces Dr. Hamish Campbell's talk originally scheduled for the October slot, which has been postponed until next year).

Wednesday 8th November 5.20 pm Of Cabbage Trees and Things. Speaker: Dr. Warwick Harris, Landcare Research. With abstruse reference to the inferences of conservation concerns expressed in Lewis Carroll's poem "The Walrus and the Carpenter", results of a latitudinal study of variation of cabbage trees will be presented. The study began in 1994 and continues with observations on plantations of trees at Auckland, Lincoln and Invermay raised from seed collected from widely separated wild populations of cabbage trees in New Zealand. The adaptive relevance of the morphological and physiological characters recorded, as well as cultural values of cabbage trees, will be considered.

Saturday 25th November 8.30 am Field trip to Purehurehu Point. On this trip we will visit a recently convened remnant of coastal Otago vegetation located on a private farm. Known to the locals as Windy Point it is more correctly Purehurehu Point (Māori for moth), and dissects the northern coastal beaches of Whareakeake and Kaikai. Like nearby Heyward Point it is an area that is both botanically and scenically valuable. As well as botanising, some may like to walk down to the beach at Kaikai, visiting the historic caves that have been associated with early whalers, and in more recent times, as a favourite holiday destination for some locals. Rain date Sunday 26 November. Meet at Botany Department car park 8.30 am, returning at 4 pm. Contact Robyn Bridges, 021 235 8997 robyn.j.bridges@gmail.com

Saturday 2nd December 4.00 pm Pot-luck dinner at Woodhaugh Gardens. Bring a plate and enjoy good company, good food and the flora of the town belt. We will start with some backyard botanising before dinner. All are welcome.

Friday 8th December - Sunday 10th December Field trip to Waikaia Valley and Piano Flat. The Waikaia Valley lies between the Umbrella Mountains to the east and the Garvie Mountains to the west. The Waikaia River joins the Maitai River just north of Riversdale. The Waikaia forest is a mixture of red, mountain and silver beech and is the best remaining example of the beech forests that covered much of the area. There is a number of walking tracks through the beech forest and a track above the bush line to Titan Rocks. We will travel to the DOC campsite at Piano Flat on Friday afternoon and spend Saturday in the field with another

opportunity to botanise on Sunday morning. Bring your own tent, sleeping bag, cooking gear, food, sandfly repellent etc. and something to share for a pot-luck dinner on Saturday evening. Be prepared for adverse weather at both the camp site and in the field. Facilities are basic but include toilets, barbecues and picnic tables. Fees are \$5.00 per person per night. Contact David Lyttle, (03) 454 5470, email djlyttle@ihug.co.nz

Wednesday 28th February 5.20 pm. Spring Flowers of El Camino. Speaker Kath Graham. Walking the 1000 year old pilgrimage - Camino Frances in Spain - was an important exercise in building perspective in relation to the NZ experience. For a Kiwi it was New World meets Old World. For an antipodean botanist it was leaving a significantly intact natural heritage to visit one with thousands of years of human impacts. The spring flowers were beautiful and delightful, often familiar but sometimes new. At times the plants showed differences to our common weeds although obviously the same species. The trees were magnificent parts of the environment, and an important part of the human story of the region. I didn't know the origin of many of the plants I was seeing so I couldn't identify which were weeds or which might be problem invaders, until in Galicia I saw the first giant eucalypt tree guarding the ruins of an ancient castle keep. Shortly after that I spotted the first cabbage tree followed by increasing numbers of cabbage trees in people's gardens (Hey!) and eventually during the last few days, I was walking through vast forests of eucalypt trees. The destination was Santiago de Compostella, and the Cathedral which holds the relics of Santiago, (St James). Even as I walked the last few kilometres along the pavements of the city I was still discovering new species of flowers I hadn't seen previously along the 800km trail.

Saturday 24th February – Sunday 25th February 2018 Weekend field trip to Northern Southland. This trip will be a rare opportunity to botanise a large new covenant on the foothills of the Takitimu Mountains, with shrublands, wetlands and grasslands. On the Sunday we'll visit the White Hill wind farm, another interesting tussock-shrubland site. And if we run out of things to do there are other fascinating wetlands and a limestone site close by too. Local QEII representative Jesse Bythell will be our guide for the weekend. At this stage we plan to travel to Mossburn on Friday evening and find accommodation somewhere in the Lumsden-Mossburn area so we can be on-site early on Saturday. People have the option of travelling back to Dunedin on Saturday evening or staying on to visit the wind farm on Sunday. More information available closer to the time. Contact John Barkla, phone: (03) 476 3686.

Meeting details: Talks are usually on Wednesday evening starting at 5.20 pm with drinks and nibbles (gold coin donation), 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. Please be prompt as we have to hold the door open. Items of botanical interest for our buy, sell and share table are always appreciated. When enough people are feeling sociable we go to dinner afterwards: everyone is welcome to join in. 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 (10c/km/passenger to be paid to the driver, please). 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: <http://www.otago.ac.nz/botany/bso>

Contents

BSO Meetings and Field Trips.....	2
Chairman’s Notes.....	5
Secretary’s Notes.....	5
Editor’s Notes	6
Correspondence and News	7
Joint NZ Plant Conservation Network Conference/John Child Workshop	
Hokitika, 14 - 21 November.	7
University of Canterbury summer course: Practical Field Botany	8
Friends of the Dunedin Botanic Garden Rhododendron Day.....	8
Botanical Society of Otago Special Projects.....	9
Botanical Society of Otago 2018 calendar	10
Peter Bannister Student Field Grants	11
Articles	12
Farewell to the “fairy barf” lichen and other changes to the New Zealand lichen checklist	12
Crevice Gardens for the Cultivation of New Zealand Alpine Plants.....	15
Fungal Feast or Mycological Mayhem: unexpected treats from the Taieri Gorge trip.....	18
Meeting and trip reports	20
Field Trip to Lower Taieri Gorge, 10th June 2017	20
Lichens and luscious berries of Sweden, Finland and Lapland, a talk by Alison Knight.....	21
Summer in a Costa Rican Cloud Forest, a talk by Duncan Nicol, 12th July 2017	25
Catch and Release: catching Otago’s insects and spiders without pins and needles, a talk by Steve Kerr, 23rd August 2017.....	26
Visit to John and Moira Parker’s Property at Little Hoopers Inlet and Varleys Hill,	26
BSO Membership Form 2017	31

Chairman's Notes

David Lyttle

On looking back at our programme now we are coming into to spring it is ironic that the two field trips for June (Lower Taieri Gorge) and August (Parker property, Hoopers Inlet) were completed successfully but due to an adverse weather event, the indoor Herbarium Workshop at the Botany Department scheduled for July was cancelled. However no such problems beset our monthly meetings. In June Allison Knight talked about the lichen flora of Scandinavia which she had been able to see on her summer travels there when attending the IAL8 International Lichen Symposium in Helsinki. In July, continuing on the travel theme, Duncan Nichol talked about the time he spent in Costa Rica and the research project he participated in while there. In August Steve Kerr in a departure from our usual botanical themes gave an illustrated talk on local invertebrates. Steve's photos were quite stunning and as a macro photographer myself, I was able to appreciate the skill and patience that is needed to get such great images.

The 16th annual Geoff Baylis Lecture was held on the 20th of September. This year's lecturer was Dr Susan Walker, an ecologist with Manaaki Whenua—Landcare Research in Dunedin. Susan is an acknowledged expert on South Island dryland ecosystems and delivered an excellent lecture on the ecology of the Mackenzie Basin. Susan has the gift of presenting complex scientific data in a clear and intelligible manner. This lecture was very timely considering the present dire state of this rapidly disappearing biome. The committee puts a lot of thought into choosing speakers and topics for the Geoff Baylis Lecture as it is an open event where advances in both botanical science and the scientific underpinning of environmental issues can be presented to the public.

Due to circumstances beyond our control there have been changes to our programme for the remainder of the year. The visit to Hereweka Gardens originally set down for the 30th September took place on Saturday 23rd September, a week earlier than originally planned. We were treated to a magnificent display of magnolias in bloom. The talk scheduled for October the 11th "Geological constraints on Zealandian biogeography" has been replaced by a Members' Night as our speaker Dr Hamish Campbell has a commitment to be in the Chatham Islands for the filming of series 3 of the popular BBC television programme "Coast New Zealand" with Neil Oliver which clashes with the date of the meeting.

On the weekend of 8th-10th December we plan to hold a field camp at Piano Flat following the format from last year's very successful camp at Mavora Lakes which generated a lot of interest from BSO members. This will enable us to explore another botanically diverse and fascinating area. The trip will be open to members and non-members alike. These field camps provide students and other people interested in botany with an introduction to the plants (and lichens) of the region and expert tuition in species identification. Details of this and the remaining events for the year are in this newsletter and on the BSO website.

Secretary's Notes

Allison Knight

So many items flit in and out of the BSO mail box that it's hard to be concise. Always of interest are the newsletters, journals and bulletins from other like-minded groups. The Coastal Otago events coordinator (DoC) has sent notice of Conservation Week, which runs from 14 – 22 October — events well worth checking out. There are botanical societies or groups in

Auckland, Waikato, Taranaki, Rotorua, Manawatu, Wellington, Nelson, Canterbury and Wakatipu. Some of them have their own website but their incoming news is still much appreciated. The Wellington Botanical Society runs a brilliant summer camp and welcomes BSO members. You can keep up with current Bot. Soc. programmes around the country through the NZ Botanical Society newsletter, or online through Trilepidia, the NZ Plant Conservation Network newsletter. We've received notice of a joint NZPCN Conference/John Child Bryophyte Workshop to be held in Hokitika, 14 – 21 November. This is sure to have something of interest for everyone of botanical bent and you can register for either or both events.

News from allied groups often includes reports of interesting activities that we can incorporate in our programme, for example: a Members Night "Show and Tell" – next one coming up on 11 October; an end of year pot-luck BBQ – coming up in December and a Herbarium Workshop. Thirty registrations came in for our workshop in July. Sadly it had to be postponed because of the floods. Let's hope for better weather when we re-schedule it next year.

Other items that have popped up in the mail box include a cheque for a copy of the Lichen Guide. This is a timely reminder that we should reprint this popular guide. Now that the New Zealand Lichen Checklist has been updated we can include a list of all the names from the book that have been changed.

In June we sent around a request from Jane Shennan for more information on the history of the garden Threave, the home of her ancestors. She was pleased with the response and has offered an article on this historic Dunedin home and garden. BSO visited the garden when Prof Geoff Baylis was in residence. It contained an amazing diversity of plants that were a great

resource for Botany Department teaching and research.

John Dowe wrote to ask for information on the botanical artist Marianne North's excursion to southern New Zealand. Several of our members responded and Neill Simpson, of the Wakatipu Botanical Group was particularly helpful in identifying plants and scenes she painted in his area.

More recently we have had correspondence with AAPES (Aquatic, Animals, Plants, Ecological Society). This is a group of enthusiastic university students involved and interested in a wide range of environmental issues and activities. They are keen to tap our botanical expertise and we would like to share their enthusiasm and support them with some joint field trips and other botanical input.

Editor's Notes

Kate Caldwell

Well done and thank you to all the BSO members and enthusiasts who have collaborated to bring another great newsletter together.

Do you want to get involved? We welcome your ideas, suggestions and contributions, large or small. Copy for the next newsletter is due on 10th January 2018, but early submissions are most welcome.

Editor's guidelines: Try to aim for a 0.5–1 page of 14 pt. Times for news, trip/meeting reports and book reviews and 1–5 pages, including illustrations, for other articles. Electronic submission by email to kate.caldwell@dcc.govt.nz is preferred. Send photos as separate files and remember to include photo captions and credits.

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.

New Members

A warm welcome is extended to the following new members:

Susan Millar, Rachel Smith, Taylor Davies-Colley, Geoff Cutfield, Rosemary Leader, Ivan Lin, Susan Millar, and Trent Hicks.

Thank you to all our current members for your continuing support, and thank you also to Susan Millar and Mike Barra for their kind donations.

Correspondence and News

Final reminder for the joint NZ Plant Conservation Network Conference / John Child Bryophyte and Lichen Workshop

Hokitika, 14 - 21 November.

These overlapping events cater for a wide range of botanical interests. Registration is essential. You can attend either or both. Even if you can't be there in person you could send your botanical artwork or photos up for the botanical art display or charity auction.

NZ Plant Conservation Network conference in Hokitika, 14 - 17 November.

Register online at:

http://www.nzpcn.org.nz/page.aspx?nzpcn_events_conference_2017

Early-bird registration closes on 5th October 5th 2017.

Please facilitate the existence of the conference through your wider networks, but please also consider potential conference presentations.

A reminder, sessions are as follows:

Taxonomic updates

Distribution and population updates

Bryophytes and lichens

Plant ecology

Community and iwi engagement and successes

Conservation tools and successes

Weed research

Student colloquium

The John Child Bryophyte and Lichen Workshop is for anyone interested in mosses, liverworts and lichens, from beginners to experts. This year there will be extra introductory talks and beginners workshops in conjunction with the NZ Plant Conservation Network Conference.

Dates:

Thursday 16 November - Bryophyte and Lichen session as part of NZPCN

Friday 17 November - Introduction to bryophytes and lichens workshop (part of NZPCN)

Saturday 18 November - NZPCN field trips - with scope for bryophytes and lichens.

Sunday 19, Monday - John Child Workshop field trips. Evening: microscope work

Monday 20 November - John Child Workshop field trips. Evening: microscope work

Registration is essential for catering purposes.

If interested in attending, please email Jon Terry on jon@jonterryecology.com

A chance to display/sell your art or photographs

(Email Alli Knight: alli.knight.nz@gmail.com if you'd like your work transported to Hokitika for

the botanical art display and or charity auction).....

Dear artists and botanical photographers,

As part of the NZPCN biennial conference (Nov 14-18 2017 - Hokitika) we will be running our usual charity auction.

If you have any works that you are willing to donate, please get in touch. Do not feel obliged, this is just a quiet request to see what's out there, I don't want to be doing anyone out of income.

Our intention this year would also be to initially include the works for the auction in the Botanical Art Exhibition which we will be running up to and during the conference.

Contact: Alex Fergus afergus@doc.govt.nz

University of Canterbury summer course: Practical Field Botany

Practical Field Botany (BIOL305) is an intensive, short summer course designed to meet the need for training in the collection, preparation, and identification of botanical specimens.

Venue: University of Canterbury - Cass Mountain Research Area, Canterbury

Dates: 18 – 26 January 2018

This course will be of interest to amateur botanists, members of the workforce (e.g. Crown Research Institutes, Department of Conservation, Local and Regional Councils, Botanic Gardens, horticulturists and teachers) and biology students who need to acquire or upgrade taxonomic skills and are interested in field ecology, conservation, biodiversity and biosystematics. The course is targeted at participants with various entry levels: from students with limited plant knowledge to experienced career professionals.

Goals of the course

To enable participants to

- become familiar with the plants of the central Canterbury mountains,
- identify and name plants correctly and accurately using online and hard-copy identification keys,
- take and edit scientific-quality plant photos,
- maximise usefulness and minimise environmental impact when collecting specimens,
- prepare high quality voucher specimens of plants,
- use scientific names to access detailed information about New Zealand plants,
- understand the patterns of variation within populations,
- appreciate unique and unusual aspects of the New Zealand flora.

Enrolment starts 4 October 2017.

For more information contact Matt Walters (matt.walters@canterbury.ac.nz; 03 369 5211) or Pieter Pelser (pieter.pelser@canterbury.ac.nz; 03 369 5228).

Friends of the Dunedin Botanic Garden Rhododendron Day, Sunday 15th October

Coffee, food, entertainment, raffles and plants

The annual plant sale will be held in the Rhododendron Dell car park, off Lovelock Avenue, 9am -12pm, rain or shine.

Propagation Facility public open day and indoor plant sale, 10 am – 1pm.

BSO Special Projects

David Lyttle

The BSO Committee has decided to institute a series of special projects to promote the objects of the Society and make it more relevant to students attending the University of Otago. We also aim to recruit new members and present botanical science to the wider public through a range of new activities and publications. Three project areas have been identified:

1. Encouraging involvement of new members and students.
2. Producing popular illustrated guides to botany of Dunedin areas that people commonly visit.
3. Instituting ongoing projects in conjunction with the Department of Botany.

A subcommittee has been set up to manage all aspects of recruiting new members, particularly students, and publicising the activities of the Society. We plan to coordinate some of our activities with those of with OU AAPES (Animals, Aquatic, Plants, Ecological Society). Other initiatives are maintaining the BSO Facebook page, producing BSO buttons and setting up a stall at Student orientation day (Wed. 22 Feb). Other activities discussed were running trips and workshops aimed at catering for beginners who wish to learn more about botanical topics.

The BSO has accumulated a significant amount of money in the Audrey Eagle Publishing Fund. This has been augmented by the proceeds from the sales of Allison Knight's guide to the Lichens of New Zealand which she has generously donated to the fund. We are planning to produce a series of guidebooks on the flora of the Otago region and eventually roll them into a more comprehensive treatment. Initial proposals are to cover in order of priority: (1) Lowland forest – Town Belt, Woodhaugh Gardens, Ross Creek; (2) Above the tree line – Flagstaff,

Swampy Summit, Mt Cargill, Silver Peaks; (3) Coastal ecosystems – dune and saltmarsh vegetation; (4) Alpine – Maungatua, Rock and Pillar, Te Papanui and (5) Drylands – Sutton Salt Lake, Fiddlers Flat. We would need to link each guide book to locations where the vegetation type covered is present. Ideally these would be areas served by walking tracks that are accessible to the public. There is little point in covering areas that are not accessible to the public in a guide book. We are in the process of determining the scope of each guide and deciding which areas to include in it. We intend to run BSO field trips to the sites targeted for coverage for additional data collection and verification.

We are looking to set up a collaborative scientific project that will involve BSO, Botany Department and a community or environmental organisation. The aim of this is twofold. The results of any study would benefit the partnering organisation directly and would also allow the links between BSO and the Botany Department to be used by students to provide opportunities to participate in field work that is not covered by the formal academic degree programmes. One suggestion put forward was to set up a project monitoring fungi at Orokonui Ecosanctuary with the information gained being used to produce a guide to the fungi there. There is the possibility of doing other projects in collaboration with other organisations.

We would welcome suggestions on any aspects of these proposals from BSO members. The Committee is keen for as many BSO members as possible to participate in these projects particularly in any collaborative long term scientific study that is set up in response to these proposals.



**The Botanical Society of Otago's 2018 calendar is on sale now
\$20 ea. (or multiple copies for \$18 ea.)**

Available 1 – 3 pm from the Botany Department Reception, University of Otago (**cheque or correct amount of cash only**), on-line purchase at <https://ahi-pepe-mothnet.myshopify.com/products/botanical-society-of-otago-calendar-2018-single> & at Society meetings.

For electronic payment email the Botanical Society of Otago (bsso@otago.ac.nz) with your name, address, and whether you want to collect the calendar from Botany Department reception or have it posted (add \$2.50 for mailing), and payment details will be sent.

All proceeds to the Botanical Society of Otago <http://www.otago.ac.nz/botany/bsso/>.

Peter Bannister Student Field Grants

Mary Anne Miller

PBSFG Administrator

The Peter Bannister Student Field Grant Fund was established in 2014 by Jennifer Bannister in memory of Peter Bannister, Professor of Botany, University of Otago 1979-2005. The fund is administered through the Botanical Society of Otago. Grants are awarded to students enrolled for postgraduate degrees at the University of Otago to assist with field work related expenses. Research projects are chosen on the basis of appropriateness to the aims of the Society, primarily to encourage the study and knowledge of botany.

The 2017 Grant has been awarded to Patricio Saldivia, a PhD student in the Department of Botany. His project will look at the molecular systematics of the *Celmisia* group with emphasis in the Subgenus *Lignosae*.

Congratulations Patricio. We look forward to reading the result of your trip to the Allan Herbarium, Landcare Research in Lincoln and a fieldtrip to collect samples for DNA analysis.

There were two recipients of the 2016 Peter Bannister Student Field Grant and one of the reports is now presented. The second recipient has been granted an extension to complete fieldwork early this coming summer. PhD student Andy Nilsen undertook his fieldwork in May, when he used his grant to travel to Nelson, and here are the results of that very successful trip.

Peter Bannister Student Field Grant Report: Comparative genomics of sequestrate fungi and their agaricoid relatives

Andy Nilsen

PhD candidate, Department of Botany, University of Otago

Truffle-like fungi are a large group of polyphyletic fungi that are unable to forcibly discharge their spores. The emergence of truffle-like fungi has been attributed to past climatic events and herbivory by mycophagous animals. While some environmental drivers correlate to the emergence of truffle-like fungi, very little is known about the underlying molecular mechanisms that led to the morphology. To better understand these underlying molecular mechanisms the genomes and transcriptomes of species pairs, each containing a truffle-like fungus and its closely related mushroom-like fungus will be sequenced.

I was fortunate to receive the Peter Bannister Field Grant to help fund a fungal collecting trip. In particular, to collect and culture the truffle-like fungi *Clavogaster virescens* and an unnamed fungus from Harwoods Hole in Nelson. To achieve this, we embarked on a week-long field trip in May, travelling from Nelson to Dunedin by car and collecting at various points on the way. David Orlovich and myself, accompanied by David Lyttle, arrived in Nelson and spent the first day collecting at Harwoods Hole. Almost unbelievably, the unnamed fungus was found within the first few minutes and was followed by a further five collections during that day. Of the collections made, two were successfully cultured.

We also spent one day collecting in Nelson Lakes National Park and two days in Victoria Forest Park where we found interesting fungi-like *Cortinarius aerugineoconicus* and *Cortinarius cretax*. *Clavogaster virescens* was not found on this collecting trip, however, cultures have been since been acquired from Landcare Research. Over the course of the South Island field trip we collected a wide array of fungi and added 55 collections to the University of Otago Herbarium.

I thank the Peter Bannister Student Field Grant Fund which enabled the collection of the unnamed fungus, and David Lyttle for his botanical expertise and company.



David Lyttle and Andy Nilsen on the fungi collecting trip
(Photo: David Orlovich)

Farewell to the “fairy barf” lichen and other changes to the New Zealand lichen checklist

Allison Knight

The lichen branch of the NZ Threat Classification System met in July this year and updated the NZ Lichen checklist along with the Threat Classifications of NZ lichens. We recognised over 2000 taxa, well up from the 1706 recorded in the 2007 Flora of New Zealand Lichens. These numbers include non-lichenised lichenicolous fungi (fungi living on lichens), which are now in the process of being shifted to the fungal checklist, so the final lichen count will go down somewhat – in 2007 there were 44 genera containing lichenicolous fungi, most with just a few species.

There are several changes in the family *Icmadophilaceae* of local and national interest. One of the most satisfying outcomes of the meeting was the elevation of *Dibaeis absoluta* to Not Threatened from a conservation status of Data Deficient. This highlights the power of citizen science in increasing our understanding of New Zealand’s biodiversity. After Jon Terry initiated a Data Deficient Lichens team at the 2015 John Child Bryophyte and Lichen Workshop in Waimate the call for help went out to Botanical Society members and NatureWatch users. Observations, specimens and photos came in from all over the country, confirming and extending historic herbarium records. The overwhelming evidence was that this species is widespread, common and not declining. *Dibaeis absoluta* is a lichen that actually benefits from human modifications and its distinctive green thalli dotted with pink apothecia are often found on the banks of forest tracks. Charles Knight sent the type specimen from New Zealand to Nylander in 1883 (see note in BSO Newsletter 80). When I examined it in Helsinki Herbarium

during the International Association of Lichenologists meeting last year I could see that in its dried state it could easily be mistaken for *Icmadophila ericitorum* - which brings us to the “fairy barf” lichen.

Rigorous deposition of herbarium specimens and rigorous research also contribute greatly to increased understanding of distribution and taxonomic relationships. Lars Ludwig’s research on the *Icmadophilaceae* for his PhD thesis has underpinned several interesting changes in the Lichen Checklist. During his meticulous search for a specimen of *Icmadophila ericitorum* to include in a phylogenetic tree, Lars discovered that all the collections identified as this lichen in New Zealand herbaria were actually mis-identifications of *Dibaeis absoluta*. The only correctly identified collection Lars could locate was one said to be from Mt Pirongia, Waikato, deposited by John Bartlett in the British Museum. This is the only known sample from the Southern Hemisphere - and John was known to sometimes mix up his collections. Lars and I have separately searched Mt Pirongia, and found only multiple thalli of *D. absoluta*, growing on both rock and soil. Given the weight of the evidence, *Icmadophila ericitorum* has been excluded from the New Zealand lichen flora. This is a great relief. On the field trip to Lapland some lichenologists were calling it the “fairy barf” (or “fairy puke”) lichen, so I’m pleased it’s relegated to the Northern Hemisphere. Ernie Brodo is kinder and calls it the candy lichen in *Lichens of North America*. This aptly refers to the distinctive candy pink apothecia so characteristic of the *Icmadophilaceae*.

Lars’ phylogenetic research also showed that the beautiful *Icmadophila splachnirima*, with a stronghold in Otago and Southland, should more correctly be returned to its previous name of *Knightiella splachnirima*, and this has been done. His field work uncovered thriving populations on the top of the Blue Mountains, a small collection beside a tarn on Swampy Spur

and some beside the Silver Peaks track. Most interestingly, he discovered that this lichen can reproduce asexually as well as sexually, and changes from one state to the other depending on the moisture content of the soil.



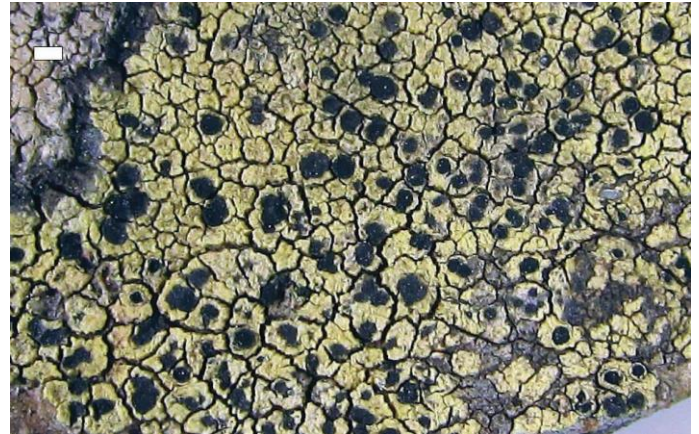
Icmadophila ericitorum, the “fairy barf” lichen, on decaying wood in conifer forest, Lapland Photo Allison Knight

On another tack, some of you may have wondered why I spend so much time collecting little black dots on rocks, bark, wood and soil on Botanical Society and other trips. John Knight, Robyn Bridges, Alf Webb and others have given much appreciated support. There are big changes afoot in *Amandinea* and *Buellia*. These genera are part of an ongoing revision of Buellioid lichens by the world expert, emeritus Professor Jack Elix in Canberra. Jack collaborates with other New Zealand lichenologists including Bill Malcolm, Dan Blanchon, Peter de Lange, and David Glenny. He also draws on collections and herbarium specimens from around the world. Examining the type specimen, on which the original description of a species is based, is critical to determining whether any other collection is synonymous or whether it is different enough to be called a new species. It was a great tragedy when Australian biosecurity destroyed the type specimen of *Buellia maculata* sent from New Zealand.

The 2007 NZ Lichen Flora describes 7 taxa of *Amandinea*; this number has expanded to at least 25 species in the 2017 checklist, including some species shifted in from *Buellia*, as well as several new species. Some of particular interest to Otago include *A. australasica*, which has been found at Black Head, Brighton and the Nuggets as well as in Nelson and Canterbury. *A. brunneola* has also been reported from Black Head, as well as from several sites in Australia.

Buellia has had an even more dramatic increase of taxa, from 16 reported in 2007 to over 40 recorded in 2017, with more changes to come. Three of the most recently published species found in Otago are *Buellia tuapekensis*, *B. patearoana* and *B. suttonensis* (1). The type specimen of *Buellia tuapekensis* was found on a rock in a paddock adjacent to Knights Bush, Tuapeka West. Patearoa has its origins in the Ngāti Momoe name for the Rock and Pillar Range and the type specimen of *B. patearoana* came from a schist tor below the summit ridge, with another collection near Leaning Lodge hut. The type of *B. suttonensis* was part of a biological crust consolidating the salt pan at Sutton Salt Lake. The last two of these new species were collected on Bot. Soc. trips, with invaluable advice from Janet Ledingham and sterling assistance from Alf Webb. Other new species of *Buellia* occurring in Otago include *B. maungatuensis*; *B. akatorensis*, found at Black Head and the mouth of Akatore Creek, and *B. hypopurpurea*, collected at Akatore and on a BSO trip to Tavora Reserve.

Tetramelas is another genus in the Buellioid group occurring in Otago. *Buellia dunedina* has been moved to *Tetramelas concinnus* and the type specimen is from the Horse Range just north of Palmerston. A new species, *Tetramelas allisoniae*, has been added, with the type coming from a BSO trip to Split Rock, near Seacliff.



Tetramelas allisoniae (holotype), top of Split Rock, near Seacliff. Scale bar 1 mm. Photo Telopea² 20, 2017

Botanical Societies and members have a pivotal role to play in the advancement of knowledge by putting photos on NatureWatch, making permanent and accessible records of distributions, responsibly depositing specimens of interest in national herbaria and keeping an informed eye out for new species. Your contributions really do make a difference. Many thanks to all those who have helped make the changes noted here.

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Crevice Gardens for the Cultivation of New Zealand Alpine Plants

David Lyttle

Rock gardens have long been popular for the cultivation and display of alpine and other small plants. The general principles are fairly simple. Rocks are placed in an aesthetically pleasing arrangement, ideally mimicking a natural rock outcrop or mountainside. Plants are placed in the pockets of soil between the rocks where they grow and flower to delight the viewer. Dunedin Botanic Gardens has a fine rock garden stocked with plants from all corners of the globe constructed along traditional principles; it has rocks and paths and little steps going up and down as well as cascades, all situated on a sunny north slope above Lindsays Creek.

However things are not so simple. Many high alpine plants that are sought after by gardeners and collectors with passions beyond obsession do not like rock gardens. They may linger and eventually die but they do not grow. It is not surprising then that the rock gardening community has been preoccupied with potting mixes and cultural techniques as long as it has existed. There have been some notable successes that are proudly displayed on the show bench and some heroic failures. A pot of *Haastia pulvinarius* that was awarded best in show at a prestigious UK Alpine Garden show was found on close examination to be dead. This tale may be apocryphal as I cannot authenticate it but I believe it to be true.

Crevice gardening originated in Czechoslovakia and was rapidly taken up by the British when they realised the Czechs were more accomplished growers than they were. In this method of rock garden construction slabs of stone are placed vertically and the interstices between them are filled with the growing medium. This is typically sand or some similar medium that is freely draining but it is generally

not garden soil or artificial potting mixes. This type of construction creates deep crevices that allow the roots of the plants to penetrate into cooler substrate where moisture is retained. High soil temperatures that damage the roots can often occur during the summer (even a Dunedin summer) and are rapidly fatal to most alpine plants. A crevice garden can be constructed on a flat, level site and by controlling the amount of sun by careful placement of rocks different microenvironments suitable for different plants may be created. Crevice gardens are designed to be functional rather than to create an aesthetic illusion of a natural mountainside.

In June 2011 I was ready to construct my crevice garden. I ordered a truck load of brown metal from the local quarry. This is basically crushed, weathered basalt that is a mixture of different size rock fragments and has a high content of clay. It is used for the construction of road bases and driveways. I was taking a calculated gamble with this choice of medium but I knew it grew weeds really well and that alpine plants were not particularly fastidious about the substrate in which they grow, scree plants being an example. I persuaded my friends from the Otago Alpine Garden Group to come and assist me under the pretence of conducting a workshop. Photos show the crevice garden in the process of construction and the finished garden with the first plants in it.



Construction of the crevice garden, June 2011. The late Bill Wilson is leaning on a spade watching Dave Toole placing stones in the brown metal growing medium. (Photo: David Lyttle)



The finished garden with the first plants in place, June 2011. (Photo: David Lyttle)



Celmisia brevifolia in flower, October 2013 (Photo: David Lyttle)



A view of the garden in September 2017. *Astelia nivicola* occupies the foreground and *Celmisia brevifolia* is partially visible at the top of the frame. (Photo: David Lyttle)

Further New Zealand alpine plants have added to the garden over several years and the collection now includes *Celmisia mackaui*, *Celmisia brevifolia*, *Celmisia viscosa*, *Celmisia semicordata* hybrids, *Celmisia walkeri*, *Hebe*

buchananii, *Hebe pimelioides* subsp. *faucicola*, *Hebe pimelioides* subsp. *pimelioides*, *Hebe epacridea*, *Anisotome haastii*, *Anaphalioides bellidioides*, *Coprosma petriei*, *Acaena buchananii* 'Picta', *Helichrysum intermedium* var *tumidum*, *Astelia nivicola*, *Geum cockaynei*, *Parahebe lyallii*, *Ranunculus insignis*, *Myosotis saxosa*, *Aciphylla kirkii*, *Aciphylla similis*, *Acrothamnus colensoi*, *Carmichaelia nana*, *Gaultheria crassa*, *Geranium brevicaule*, *Ranunculus gracilipes*, *Scleranthus brockiei*. Results have been mixed. Conditions in this garden are similar to those found on stony riverbeds and not unsurprisingly plants at home in such conditions do well. All the hebes I planted apart from *Hebe epacridea* have thrived as has *Acaena buchananii*, *Coprosma petriei*, *Parahebe lyallii*, *Geranium brevicaule* and *Scleranthus brockiei*. The latter three species have seeded and spread through the garden. *Helichrysum intermedium* var *tumidum* from the Otago Peninsula coastal cliffs has also thrived as befits a local endemic species. Two other species that have performed well are the forget-me-not, *Myosotis saxosa*, and *Celmisia brevifolia*, a shrubby alpine species.

It became clear that I would not be able to grow many of the more sensitive alpine plants, particularly those that were less tolerant of drying, in this crevice garden so I looked round for a more suitable site. The place I choose to



Myosotis saxosa in flower, November 2015 (Photo: David Lyttle)



Celmisia bellidioides growing in the second crevice garden with *Celmisia allanii*, September 2017. The side of the concrete water tank can be seen on the left side of the photo. Note the placement of the stones against the side of the tank forming a narrow crevice. (Photo: David Lyttle)

build the second crevice garden faces east and gets only morning sun. It lies against the base of a large concrete water tank. Water running off the top of the tank flows down the side into the substrate which is a mixture of soil and brown metal keeping the ground moist but the slope enables any excess water to drain away. I planted *Bulbinella rossii*, *Ranunculus lyallii*, *Ranunculus monroi*, *Celmisia bellidioides*, *Celmisia prorepens*, *Celmisia allanii*, *Anisotome*

pilifera, *Aciphylla kirkii*, *Viola cunninghamii*, *Carex berggrenii*, *Gaultheria macrostigma*, *Hebejeebie trifida*, *Geum cockaynei* and *Myosotis capitata*.

The new garden exceeded my expectations. *Celmisia bellidioides* died back to a single rosette but then miraculously revived and grew into a healthy cushion and has never looked back. *Myosotis capitata* which comes from the New Zealand Subantarctic Islands has formed a patch half a metre across and rewarded me with a crop of brilliant blue blooms.

Celmisia prorepens and *Celmisia allanii* contrary to expectations have both survived and flowered. *Celmisias* are difficult to grow in lowland gardens as they are prone to collapsing and dying without warning if stressed.

It is possible to grow a selection of alpine plants in a Dunedin garden. It is essential to choose a site that stays cool in summer and does not dry out. Good drainage is essential but the type of soil or substrate used is not so critical as long as it drains well and the roots of the plants growing in it do not become waterlogged.



Myosotis capitata growing in the second crevice garden with *Aciphylla Kirkii* and *Ranunculus monroi*, September 2017 (Photo: David Lyttle)

Fungal Feast or Mycological Mayhem: unexpected treats from the Taieri Gorge trip.

Sharon Jones* and John Steel.

Early June so it shouldn't have been too much of a surprise to find fungi out in force, but at a guess they weren't foremost in our expectations. However, the appearance of a rather sad specimen of the bolete, *Suillus luteus*, at the base of a pine stump, at the start of the track could have been an indication of what was to come. It wasn't long before our progress was slowed almost to a crawl with the appearance of small club and coral fungi – tiny fingers of whites, yellows and pinks – demanding our attention. Amongst the larger delights were regular groups of the

delicately-coloured *Cortinarius rotundisporus*, captured in Sharon's drawing on the front cover; a small group of the almost dazzlingly-white *Humidicutis mavis* in several stages of development; a substantial, fallen log almost covered by the aptly named, turkey tail, *Trametes versicolor*; and the common, white-stemmed and red-headed *Leratiomyces erythrocephalus*. Another flash of red caught our eye, this time a small *Hygrocybe*, and Sharon's drawing amply highlights its delicate structure.

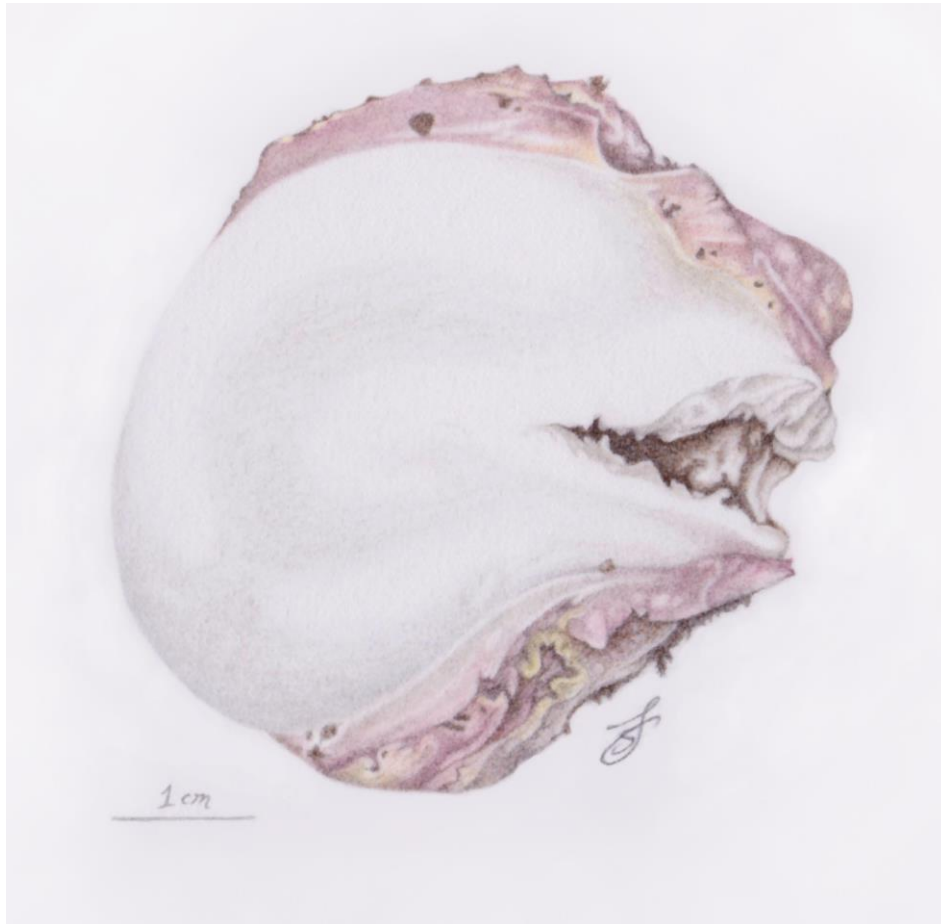


The real find of the day came when Sharon spotted what at first sight looked almost like a burst, table-tennis ball lying loose beside the track. While some of us puzzled over this, Sharon found a couple

more, but these were still surrounded by their volvae and sunken into the litter. We were pretty sure it was some form of stinkhorn fungus, but it wasn't until much later that some serious hunting turned up

Fischer's egg, *Claustula fischeri*, as the likely candidate. However, the only records to be found of this were of a couple of specimens from the Nelson area – and it was on the International Conservation of Nature Red List – so it couldn't be that: or could it?! Our excitement was quashed a little when Jerry Cooper from Landcare Research in

Christchurch confirmed our identification, but in the same breath told us that Pru and Peter Johnson had found it five years earlier in the same area. It is apparently saprophytic and not mycorrhizal which went some way to explaining its presence in broadleaved forest. At least we know it's still there. Sharon's fine drawing more than does it justice!



Running out of time we had to step up the pace a little so no doubt we missed a few more excitants on the way. Sharon did manage to spot another Fischer's egg further along the track and Rowan delayed us even longer with a solitary *Aseroë rubra*, always a show-stopper, by the side of the track. On the climb across the top, the track left the forest through regenerating kanuka, *Kunzea robusta*,

where a substantial colony of the mycorrhizal *Cortinarius* insisted on being photographed. On the final leg down to Crab Flat, passing the remnants of some cleared gorse, Sharon spotted in the decaying debris some basket fungi, *Ileodictyon cibarium*, a couple of which appeared to have suffered from some passing soccer enthusiasts. If I remember correctly, amongst the fungi we also noted some vascular plants!

* Sharon is a botanical artist and former winner of the Botanical Society of Otago's botanical drawing competitions in 2012 and 2014.

Meeting and Trip Reports

Field Trip to Lower Taieri Gorge, 10th June 2017

John Steel

The Millennium Track follows the true right of the Taieri River through its steep-sided gorge to the sea. It is hard to picture today that the Taieri Plain was an impassable swamp and travellers had to come from Dunedin by boat alighting at our starting point before continuing on foot or by coach. An old, rusting crane and what remains of a jetty are all that is left to remind us of what a short, but busy period this was. With the clearing of the swampland, road access developed, but the river still had to be crossed so the Taieri Ferry was established only to disappear when the first bridge was built leaving only the name behind. The area became increasingly populated and a remnant of its popularity; the old Wardell family home of a notable Dunedin family is all that remains as a passing reminder of those times. Māori still maintained a significant presence in the area before losing their lands to European settlement and the many landscape features with Māori names reminded us of this.

The track along the river was mainly through exotic grasses with an occasional *Plagianthus divaricatus* (shrubby ribbonwood), but quickly gave way to native, regenerating bush as we entered the gorge and began to climb. As usual the group soon split into faster and slower parties and as usual I was in the latter. The forest is possibly a much abused remnant of that typical of the Otago coast prior to the arrival of human, first Maori and then European, settlement. Fire and logging would have played major roles in land clearance and the gorge's rugged nature and steep sides possibly discouraged the annihilation of what remained.

This has allowed the podocarps, *Dacrycarpus dacrydioides* (white pine), *Dacrydium cupressinum* (red pine), *Podocarpus laetus* (thin-bark totara), *P. totara* (plum pine), *Prumnopitys ferruginea* (brown pine) and *P. taxifolia* (black pine) to regenerate through the broadleaved shrubs.

The gorge on the south side traverses a series of ridges separated by five steep sided gullies each of which is rich in ferns and bryophytes, but gave way often to stands of *Kunzea robusta* (rawirinui) and broadleaved shrubs, likely indicators of previous fire and at each such area the mycorrhizal-fungus, *Cortinarius rotundisporus*, featured on the front cover, occurred. The richest of these gullies, John Bull's Gully, with *Hydrocotyle elongata*, marked the halfway point only for us to find the rest of the group well and truly over their lunch break. This was where the ships from Dunedin disembarked their loads and passengers for smaller vessels heading through the gorge. John Bull established a garden here, but, being winter, there wasn't any sign of the potatoes found on earlier trips.



Hydrocotyle elongata (Photo: John Steel)

The gorge is also home to some special species, such as *Olearia fragrantissima* (fragrant tree daisy) and *Scandia geniculata* (climbing anise), but I failed again to find *Coprosma virescens*. John Barkla found *Coprosma obconica* although our party failed to match it try as we might to

make it fit several other coprosmas. The rediscovery of the IUCN Red Listed *Claustula fischeri* (Fischer's egg) was to be our highlight. At the summit, a considerably- placed seat gave great views, through some *Pseudopanax ferox* (fierce lancewoods), up and down the gorge. The track over the top passes through some thick kanuka mixed in with European gorse with smatterings of *Erica lusitanica* (Portuguese heath) popping up alongside the track; it will be interesting to watch the changes as the natives re-establish themselves. By now we were hurrying to catch the rest of the group and reluctantly could spend but a brief moment in the coastal carr at Paruparu-Awa, scene of many a first year field trip from the days when there were such things.

Sure enough and well overdue, the rest of the group patiently awaited us for the return to the vehicles. Thanks to John Barkla for organising a great day out.

Trip members were Dandy Prinsloo, David Lyttle, John Barkla, John Steel, Lydia Turley, Marilyn Barkla, Nicola Pyper, Robyn Bridges, Rowan Hindmarsh-Walls, Sharon Jones and Tom Stevenson.



Pseudopanax ferox above Taieri Gorge (Photo: John Steel)

Lichens and luscious berries of Sweden, Finland and Lapland, a talk by Alison Knight, 14th June 2017

Kate Caldwell

A healthy turnout came to listen to our favourite lichenologist, Allison Knight, tell us about her Scandinavian summer adventures.

Allison's trip began with a week of adventure kayaking around some of the thousands of islands in St Ana archipelago, in southern Sweden. 'Everyman's law' in Sweden means that anybody can camp wherever they like, as long as they don't leave a trace. Allison and her husband John explored these picturesque islands in sturdy kayaks, watching fabulous sunsets from a different spot each night. A cornucopia of lichens clothed the glacier-formed rocks.

After this idyllic-looking week of paddling and reading in hammocks John was off home, but Allison's lichening was just beginning. On she travelled to Helsinki to attend the International Association for Lichenologists Symposium. The theme of the conference was 'Lichens in Deep Time' (it was about 600 million years ago when the first lichen "crawled out of the primordial broth", long before the plants). Allison's name was on three posters at the conference with some other familiar names representing the Otago botanical community.

We were shown photographs from some of the conference field trips. There was a visit to the Helsinki Herbarium, housed in the former Royal Palace. Allison was fascinated to see the type specimens of various lichens, bringing it back home to us with a shot of *Dibaeis absoluta*, the lichen that thanks to observations and collections on BSO trips might now be out of the 'data-deficient' threat category, and no longer categorised as threatened.

Another field trip was to the Helsinki Botanic Gardens where, wonderfully, whole areas for the cultivation of lichens and bryophytes are being created. Allison showed us pictures of all the different kinds of lichens growing on rocks in the lichen garden. With a strong focus on education, the Helsinki Botanic Garden also has a Phylogenetic Garden showing the evolution of plants, and a sensory garden where city children can see edible plants growing and take off their shoes to feel nature under their feet.

On one field trip there were “not many interesting lichens, but lots of interesting lichenologists”. She introduced us to some of these characters. There was Leo Sancho, who successfully put lichens in outer space. Another hero was Ernie Brodo, who has written a 4kg book on lichens of North America, filled with stunning photographs – one of the inspirations for Allison’s own photographic lichen guide. Spending time with a whole bus load of world lichen experts from different backgrounds and generations was a rare and exciting opportunity.

Allison took a side trip to visit some Finnish friends. They went blueberry harvesting using a tool that was like a modified bear’s claw to gather buckets of blueberries, which would be frozen to provide a source of Vitamin C over the winter. There were lingonberries, and cloudberries, and black trumpet mushrooms. The Finns like to collect all sorts of mushrooms, putting them together in a kind of fungal fruit salad.

The bus load of lichenologists travelled next into Lapland, the largest and most northern region of Finland. The further North they travelled, the skinnier and droopier the trees were, adapted for snow to slide off them. Hotels served less vegetables and more meat. We saw a picture of a dish at a ‘midwinter feast’: reindeer meat, accompanied by fried and baked, crispy reindeer

lichen (*Cladonia*) – turns out these lichens are edible and have long been eaten by the indigenous people of the region.

In Pallas National Park, reindeer wandered through a forest groundcover of low, shrubby blueberries, other vascular plants such as Angelica, and a carpet of mosses. We enjoyed beautiful photographs of various lichen species: some bipolar species that also grow in New Zealand, some closely related to New Zealand species, and some completely different. Allison had envisioned reindeer lichens would be everywhere in this region, but as she explained, this was sadly not the case: Natural migration has largely been hindered by national barriers, among other things. Indigenous people now tend to keep the animals with them, rather than migrating north in the summer as they used to. Naturally, this has led to certain areas getting eaten out of their winter supply of *Cladonia*, with many reindeer now having to feed on hay to supplement their diets.

The furthest north that the group travelled was to Palkaskero, at 68° North. The mountains in this region, ground down by glaciers, are relatively flat and shallow. They climbed to the Palkaskero summit at 705m a.s.l. Lichen heaven up there, but very cold so not so heavenly for humans. They were pleased to get back down.

Many thanks to Allison for whisking us away to a magical northern land with this lively presentation. Allison has the most fascinating way of portraying lichens – their amazing structures, struggles and associations. Her remarkable knack for helping people to see the world through a licheny lens takes some of the daunting aspects out of learning about these tiny, complex life forms, connecting us to them in relatable ways. Her enthusiasm is highly contagious!

Summer in a Costa Rican Cloud Forest: researching at Cloudbridge Nature Reserve a talk by Duncan Nicol, 12th July 2017

Matthew Larcombe

I've only been to a few Botanical Society talks, but I think it is probably safe to say that few start as this one did. Duncan began his talk by recounting an entertaining cultural legend, explaining how soils and all their variation are the result of an untrustworthy coyote roaming the land with a leaky sphincter... Duncan gleaned this gem from local elders on his recent trip to Costa Rica. He and his close mate Oli (also a student at Otago), had decided that rather than spend the long summer break working in McDonalds, they would embark on a self-funded educational adventure in the Costa Rican cloud forest. Envious? Yes, I was too, even more so by the end of the talk.

They began with a jaunt around the tourist traps, including some of the popular surf camps along the Atlantic coast. However, the real target was Cloudbridge Nature Reserve. Cloudbridge is a private reserve in the Talamanca Mountains. The reserve is essentially a restoration experiment that was established in 2002 on 255 hectares of cattle pasture. Thanks to the astonishing growth rates in the tropics, in just 15 years the area now looks like a patch of primary forest. However as Duncan described, this transformation has not been a simple case of remove the cows and watch the jungle swallow the paddocks. The owners of Cloudbridge received some salient advice from tropical ecologists early on in the restoration project, pointing out that restoration in tropical systems can stall at low diversity levels without supplementary planting. Their response was to instigate a program of tree planting using pioneer and climax species to promote a more rapid transition to ecologically sustainable restoration. This approach was successful, with established tree diversity being up to five times higher than nearby areas with no planting, and natural recruitment occurring from

climax taxa such as oaks. Overall biodiversity is also mind-bogglingly high, with, for example, over 300 species of bird recorded in the reserve, along with jaguars, tapirs and other endangered mammals.

But, Duncan and Oli were not just there to tick rare tropical birds off their twitcher lists. They were to undertake a research project investigating the influence of coarse woody debris (large fallen logs) on invertebrate diversity in the cloud forest. As if this wasn't enough, they designed the experiment so that it could be replicated in the Catlins as part of their third year ecology research project, upon their return to New Zealand. The experiment involved collecting three types of samples (from the log, adjacent to the log, and far from the log) from multiple sites in the forest and counting and identifying the invertebrates to Operational Taxonomic Units (OTU's, i.e. groups such as spiders, larvae, and amphipods). Duncan presented the results of both studies, which show surprisingly similar patterns, with the log having the highest diversity and density in both Costa Rica and the Catlins. The main difference between the sites was that in the Catlins there was also higher diversity in adjacent than far samples, while these were equal in Costa Rica. The patterns of diversity among groups were also similar although some of the major OUT's differed between Costa Rica and the Catlins. Duncan argues that the similarity of the results indicates the general importance of coarse woody debris for maintaining invertebrate diversity in forests – not an insignificant finding.

With the research component of the adventure behind them, Duncan and Oli had several weeks to explore Cloudbridge and the surrounding area. As a keen botanist, Duncan spent much of

this time exploring the forest and developing a plant species list. With just a single reference book, *A Field Guide to Plants of Costa Rica*, by Gargiullo, Magnuson and Kimball, he was able to identify 64 species (to at least genus) including 16 new species for the reserve. Highlights included Melastomataceae, with their distinctive venation; Orchidaceae (of course!); Piperaceae, Gesneriaceae; Asteraceae; and the giant *Heliconia*; as well as ferns and mosses... The photos Duncan showed demonstrated the amazing floral diversity and highlighted how different the cloud forest is to the New Zealand flora.

Their final adventure was to summit Costa Rica's highest mountain, Cerro Chirripo

(3800m), which was conveniently located adjacent to the reserve. The trek involved a 40km round trip, which they began at 10pm so that they could be on the summit for sunrise. In contrast to the cloud forest, the alpine flora and scenery in Duncan's slides was much more familiar, short spiky vegetation with a predominance of pubescent appendages, grey-green leaves and generally subdued colours, very beautiful.

In summary, as someone working in science, I think it is reassuring and inspiring to see people like Duncan showing such enthusiasm about research, and using their initiative to advance their education. Perhaps I'll rethink my next holiday.



Razisea spicata (Photo: Duncan Nicol)

Purukaunui Inlet Field Trip with AAPES, 20th August 2017

Ian Geary

The chilly, persistently drizzly Dunedin morning of August 20th did little to dampen the spirits of this AAPES (Animals, Aquatics, Plants, Ecology society) organised field trip. The plan was to collect preliminary data, such as plant and bird presence, before undertaking restorative efforts on subsequent trips.

The drizzle quickly lifted as we descended to the inlet. The site is located between the Purukaunui inlet and a dune-based pine plantation and the project is a collaboration between AAPES, DOC and landowners. Two areas have been set aside here for restoration: an area of low-lying, marshy ground between an established pine forest and the tidal sandy-mud flats; and the adjacent, exotic-dominated roadside scrub.

The first goal was undertaking 5-minute bird counts. Our average skill levels were low initially, although with BSO member Valerie Fay's help, we soon became competent as a group at bird ID by sight and call. New bird species or new calls were introduced to some of the party. Several counts were conducted throughout the marsh. We chose a drier underfoot route for our return to the vehicles for lunch; some late arriving members made a direct beeline for us, confirming our suspicions that the area they chose to cross was at least as bad as it looked with knee-deep mud being found in places.

Splitting into two teams after lunch, most of us set to work on vegetation plots while some established photo points to document ecosystem change. We fought boggy ground, blackberry, and large grasses to record plants in 10 x 10 m plots. As with the birds, our

average plant ID levels were low, however with improvement we attained confident identifications of some groups to species or genus. Native species included: *Coprosma propinqua*, *Phormium tenax*, *Cordyline australis*, *Griselinea littoralis*, *Plagianthus divaricatus* (just one specimen), *Dacrycarpus dacrydioides* (planted), bracken, two *Blechnum* species, grasses and rushes. Exotic woody weeds are common in the area, although luckily they are uncommon in the marsh, where blackberry and several pines were observed. Observed exotic herbs included: *Ranunculus* spp., *Erythranthe guttata* (previously *Mimulus guttatus*), *Rumex obtusifolius*, *Epilobium* sp. and various grasses.

AAPES are a diverse bunch of enthusiastic students interested in, or studying many aspects of ecology and biology. Their members learned a great deal about native and exotic plants and birds. They organised an enjoyable trip out to Purukaunui Inlet and despite working in some boggy ground, most of us were able to keep dry feet.



Conducting a 5-minute bird count amidst the marsh. (Photo: Janelle Koch)

Catch and Release: catching Otago's insects and spiders without pins and needles, a talk by Steve Kerr, 23rd August 2017

John Barkla

Prolific NatureWatch contributor and Associate Professor Steve Kerr's interest in collecting from nature started as a child. His early collection of 600 insects was donated to his local museum. Fast forward to 1990 when Steve arrived from America to work at Otago University. After purchasing a pocket digital camera to take on fly fishing expeditions, he found his old love of insects come flooding back.

Steve's small photographic rig comprises a Panasonic FZ100 with a Raynox DCR-250 macro adaptor. No lugging heavy cameras for him! It might be simple gear but coupled with Steve's considerable skills, we discovered the results are exceptional.

Starting with his own backyard in Kew, where Steve has recorded 135 species of spiders and insects, we were treated to exquisite close-ups of an array of invertebrates including green longlegged flies (*Parentia* sp.), golden hunting wasp (*Sphictostethus* sp.), European tube wasp (*Ancistrocerus gazella*) and *Cambridgea* spiders. Just in case we needed frightening, images of the "massive population" of the so-called 'Andy Bay spider', a fearsome black tunnel-web spider called *Porrhothele antipodiana*, came next. Images of Ichneumon wasps, a large family of slender-waisted parasitoids, featured strongly too. Steve's favourite collecting haunts further afield include Woodhaugh Garden, Trotters Gorge, Outram Glen, Frasers Gully, Tomahawk Lagoon and Sutton Salt Lake.

Many of Steve's photos were taken in controlled conditions at home and he explained how a modified plastic punchbowl is an indispensable background. Some insects are even raised in the

home and he showed great images of mosquito larvae, nurtured in the kitchen!

We were then treated to pictures of several rare and novel critters. These included the Piano Flat spider (*Pianoa isolata*), a scarlet red flatworm, and a pretty 3mm long blue and yellow springtail.

Steve finished with some amazing images of invertebrates showing interesting behaviours like great giant scale insects mating, flies pretending to be wasps, and spiders pretending to be their background.

If you missed Steve's presentation all is not lost. The images he showed and many more can be found on NatureWatch

http://naturewatch.org.nz/observations/steve_kerr.

Take a look – you'll be surprised!

Visit to John and Moira Parker's Property at Little Hoopers Inlet and Varleys Hill, 26th August 2017

David Lyttle

Participants: David Lyttle, John Barkla, Marilyn Barkla, Mary Anne Miller, Lala Frazer, Alf Webb, Lydia Turley, Ivan Lin, John Knight, Allison Knight, Sharon Jones, Rosemary Leader, John Steel, Penelope Gillette, Robyn Bridges, Moira Parker

The property is located on the narrow neck of land separating the head of Hoopers Inlet from the head of Papanui Inlet and borders Little Hoopers Inlet Wildlife Management Reserve, a small lagoon impounded by the Allans Beach Road formation at the head of Hoopers Inlet proper. The highest point on the property is Varleys Hill at 134 m. Following the purchase of the property by the Parkers, stock were removed in 1993. The whole property (32.8 ha)

was placed under a QEII covenant in 1998. A second block of 3.5ha adjacent to Little Hoopers Inlet was purchased and subsequently covenanted in 2011. The forest is predominantly kanuka (*Kunzea robusta*) mixed with broad-leaved native trees (*Griselinia littoralis*, *Pittosporum tenuifolium*, *Pittosporum eugenoides*, *Melicytus ramiflorus*, *Fuchsia excorticata*, *Myoporum laetum*, *Myrsine australis*, *Sophora microphylla*). There are a few large relict podocarps, totara (*Podocarpus totara* var. *totara*), matai (*Prumnopitys taxifolia*) and one pokaka (*Elaeocarpus hookerianus*). There are areas of salt marsh both on the Hoopers Inlet side and on the Papanui Inlet side (which was not visited on this occasion). On the more open ground on the upper slopes of Varleys Hill divaricating shrubs predominate. *Coprosma crassifolia* is perhaps the most conspicuous species.

After meeting up at the Hoopers Inlet hall, the party moved round to the bush edge on the margin of Little Hoopers Inlet accompanied by the honks of a group of paradise shelducks that kept well out of way in the middle of the lagoon. There was not much in the saltmarsh to look at as the new season's growth on the turf plants had not yet appeared. Jointed rush (*Apodasmia similis*) and salt marsh ribbonwood (*Plagianthus divaricatus*) were abundant round the margin of the inlet.

Further inland where the forested ground rises steeply we observed an early-flowering kowhai (*Sophora microphylla*) and the lianes *Clematis foetida* and *Scandia geniculata*. The latter plant is never very common and is typically found on open, dry, sunny sites. Understory plants observed included *Carex forsteri*, a sedge that is happy growing under the forest canopy in dry shade, and *Acaena juvenca*, which is a plant of forest margins and can also tolerate light shade. Moira had found one plant of *Olearia lineata* that was not in a very happy state when she and John had originally purchased the block.

Cuttings were taken and propagated and planted back on the site to ensure the future of this species in the covenant. *Arthropodium candidum* also exists as a single individual/colony at that site and was observed growing on a limestone outcrop. There is very little limestone locally as the bulk of the Otago Peninsula is made up of volcanic formations erupted from the now extinct Dunedin volcano last active 10 million years ago. Ferns were abundant particularly those species tolerant of dry sites. Among the ferns recorded were *Asplenium appendiculatum* subsp. *appendiculatum*, *Asplenium hookerianum*, *Asplenium flabellifolium*, *Asplenium lyallii*, *Asplenium gracillimum*, *Polystichum neozelandicum* subsp. *xerophyllum*, *Blechnum vulcanicum* and perhaps surprisingly, *Notogrammitis heterophylla* growing on a clay bank.

We moved on up the hill through stands of dense kanuka (*Kunzea robusta*). The forest floor was dry and open with some good colonies of *Asplenium hookerianum* and also numerous individuals of the tree fern *Cyathea dealbata*. On the track margins the two native groundsels *Senecio biserratus* and *Senecio minimus* were abundant perhaps reflecting their unpalatability to the rabbits which judging by the sign present were also abundant. The exotic weed *Nemesia floribunda* was abundant throughout the Covenant. It is a common weed round Dunedin and has become rampant in the understory of these dry, coastal forests.



native groundsel, *Senecio biserratus* (Photo: David Lyttle)



Open shrubland on Varleys Hill with young totara and *Coprosma crassifolia* (Photo: David Lyttle)

On the open ground towards the top of Varleys Hill *Coprosma crassifolia* was prominent and heavily parasitised by the green mistletoe *Ileostylus micranthus*. John Barkla was in his element photographing this and the dwarf mistletoe *Korthalsella lindsayi* on a variety of hosts. *Metrosideros diffusa* was common growing through the low scrub and boulders at the top of the hill as was *Muehlenbeckia australis* which is often ignored when we are compiling plant lists. There were a number of young totara present indicating that this podocarp is successfully regenerating. Ground cover included *Acaena novae-zelandiae* and the ferns *Polystichum vestitum* and *Microsorium pustulatum subsp. pustulatum*.

The top of Varleys Hill is enclosed by a circular stone wall built out of some massive stones some of which would weigh upwards of a tonne. We stopped for lunch, admired the view and speculated on the purpose of the enclosure. On the way home we added *Coprosma virescens* and *Rubus squarrosus* to the plant list. John Steel has compiled a plant list for the day which has added to the existing list for the Covenant. The number of lichen records has increased from 0 to 33 thanks mainly to the efforts of Allison Knight. Eighty-eight observations of plants, lichens and fungi covering 66 species were added to NatureWatch from the day's activities. Our thanks to everyone who participated in the field trip and to our hosts Moira and John Parker for allowing us to visit their special property.



View of Hoopers Inlet and Sandymount from Varleys Hill (Photo: David Lyttle)

Lichen notes, visit to Parker's Covenant, Saturday 28th August.

Allison Knight and Penelope Gillette

Thanks to Penelope's sharp eyes and lichen expertise the lichen list for Varleys Hill has gone from zero to over 50, and still counting. We recorded one dot lichen (*Micarea cf magellanica*) and three pelt lichens (*Peltigera* species) on soil. The latter had very distinctive veins and rhizines on their lower surface. Lichens were plentiful on twigs, bark, and wood, including old totara fence posts and macrocarpa stumps around Little Hoopers Inlet. *Usnea cornuta*, *Hypogymnia billardierei* and red-fruited *Cladonia macilenta* enhanced the fence posts while *Teloschistes chrysophthalmus*, the golden-eye lichen, decorated the salt-marsh ribbonwood, *Plagianthus divaricatus*. Hidden amongst it was a tiny golden foliose lichen, *Xanthomendoza novozelandica*. The strap lichens *Ramalina celastri*, *R. ovalis* (newly elevated from subspecies) and *R. inflexa* are all quite common, and again we found the lichenicolous fungus, *Tremella ramalinae* turning the apothecia of *R. inflexa* pale orange. There was an abundance of Graphidaceae (script lichens) on twigs and bark (see photo). This is a challenging group for identification, including some very cryptic species. Our observations suggest that there may be a number of different species to be added to the site's list from this

family. Perhaps the most striking among the many crustose twig lichens was the crimson dot lichen, *Ramboldia laeta* (previously called more descriptively *Pyrrospora laeta*), with its bright red fruit.



The crimson dot lichen, *Ramboldia laeta*, on a dead twig by the track round the salt marsh (Photo Allison Knight)

We made four different collections of Buellioid lichens for a revision of the genera of these tiny black button lichens with the Australian lichenologist Jack Elix. These might add to the growing number of New Zealand species once Jack has examined them (see article on changes to the NZ lichen checklist.).

The lichen lovers had only scratched the surface of the lichens around the inlet before we had to hurry on up Varleys Hill. There *Trapelia placodioides* was found on the rocks in the regenerating forest, while the exposed rocks near the summit were covered in many more lichens than we had time to sample. Small patches of the subalpine yellow map lichen, *Rhizocarpon geographicum*, glowed in reflected UV light and were perhaps an indication of the cold winds that blow up from the Antarctic, while scraps of orange *Dufourea* (formerly *Xanthoria*) *ligulata* and large white patches of *Varicellaria* (formerly *Pertusaria*) *velata* indicated an oceanic influence.

All in all a very fascinating and worthwhile day. Many thanks to John Steel for providing a checklist, John Knight for helping with the collecting, to David for organising the trip and to Moira for showing us round her special patch. An updated lichen list (still a work in progress) can be obtained from allison.knight.nz@gmail.com.



Script lichens on the trunk of *Coprosma rigida*, by Little Hoopers Inlet salt marsh. (Photo Penelope Gillette)

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