



BOTANICAL SOCIETY

OF OTAGO

Newsletter Number 75 May 2015

BSO Meetings and Field Trips

Wednesday 3rd June 5.20 pm An introduction to NatureWatch NZ. Jon Sullivan, Lincoln University. NatureWatch NZ <http://naturewatch.org.nz/> is a place where you can share what you see in nature, meet other nature watchers and learn about New Zealand animals, plants and fungi. It aims to build a living record of life in New Zealand that scientists and environmental managers can use to monitor changes in biodiversity and that *anyone* can use to learn more about New Zealand's amazing natural history. **NatureWatch NZ** is run by the New Zealand Bio-Recording Network Trust, a charitable trust dedicated to bio-recording. [Jon Sullivan](#) from [Lincoln University](#) along with [Colin Meurk and Jerry Cooper](#) from [Landcare Research](#) got things underway in 2005. Starting off as NZBRN it later adopted the international iNaturalist platform and a New Zealand optimised blend of iNaturalist was launched in August 2012 as **NatureWatch NZ**.

Saturday 6th June, 9.30 am Lichen, Moss and Liverwort Field trip up Leith Saddle Track. The ancient and regenerating forest above the top of the Northern Motorway harbours a variety of mist forest lichens, intermingled with mosses and bryophytes. The lichen section will concentrate on the large 'leafy' foliose lichens that are so characteristic of New Zealand's rainforest. John Steel and Maia Mistral will introduce the intricacies of some of the local liverworts and mosses. Together these non-vascular plants contribute more species to the New Zealand flora than all the vascular plants yet are often overlooked. For those who are interested, the Botany Department has kindly allowed us to bring specimens back to the lab to examine identifying features more closely. Bring hand lens and wet weather gear including waterproof footwear. Some sections of the track could be muddy. Meet at the Dept of Botany car park 464 Great King St at 9.30 am. Finish time 4.30 pm – or whenever you want to leave. Bad weather date Sunday. Contact Allison Knight 487 8265, email alli_knight@hotmail.com

Wednesday 1st July 5.20 pm Natural History of the North Andean High Mountains: the Most Diverse Alpine Ecosystems on Earth Robert Hofstede - visitor to Botany Department and Consultant to International Organisations in Tropical Nature Conservation and Environmental Policy. The Northern portion of the Andes is characterised by a tropical cool and perhumid climate, a relatively recent geological history and a geographical position at the Northern border of a continent. In this area the páramo biome is found: the natural tussock grass and herb-dominated ecosystem above the natural tree line in Venezuela, Colombia, Ecuador and northern Peru. It is considered the most species rich alpine vegetation in the world, with a spectacular vegetative structure and an impressive level of endemism for a continental ecosystem (up to 60%). Because of

the extreme climatic conditions ("winter every night, summer every day"), many species have developed an impressive set of adaptations converting them into the top-mountaineers of the global flora. These adaptations have resulted in conspicuous growth forms, some of which are shared with the New Zealand flora. Páramo's position in the tropics and connected through mountain chains with temperate areas ensure an interesting phytogeographical diversity: the flora has many elements of both tropical and temperate (holarctic and austral-antarctic) origins. Páramo is connected to the high mountain (cloud) forest through a broad ecotone; both are of key importance for the ecology and society of the Andean countries because they form the sources of, and therefore regulate, all major hydrological systems including part of the Amazon watershed. Their conservation is a major concern because of the pressure that originates from agricultural encroachment and large scale economic development.

Saturday 4th July 9.00 am Field trip to Bethunes Gully and Mt Cargill. Mount Cargill is a 676-metre-high volcanic hill dominating North Dunedin. The upper slopes are clothed in regenerating cloud forest and shrubland with their associated communities of bryophytes and lichens. We will start from Bethunes Gully at the end of Normanby Street. There is a good walking track that initially passes through exotic forest which then gives way to mixed podocarp/broadleaf forest on the mid slopes. This in turn is replaced by low forest containing a variety of species including *Griselinia littoralis*, *Dracophyllum longifolium*, *Olearia ilicifolia* and *Coprosma foetidissima* on the upper slopes. On the northern side of the ridge is a patch of mature forest with emergent *Libocedrus bidwillii*. Depending on the weather, as the ridge crest is rather exposed, we will explore these different communities. Another feature of interest is the hexagonal basaltic columns that outcrop below the summit. Meet at the Botany carpark at 9.00 am. Bring lunch, warm clothing, good footwear and parkas. Finish time about 3.00 pm. Contact David Lyttle, 454 5470 email djlyttle@ihug.co.nz

Saturday 1st August 9.00 am Field trip to Harbour Cone The Harbour Cone block is a 328 ha block of pastoral land on the Otago Peninsula, purchased in 2008 by the Dunedin City Council to protect landscape, ecological, cultural, historic and recreational values. The area is managed as a farm but contains significant areas of remnant native vegetation with high biodiversity values. Some areas have been retired from grazing and an extensive planting programme has been undertaken to re-establish native forest on erosion prone slopes. Our guide for the day will be Moira Parker who has been involved with the project since its inception. Meet at the Botany carpark at 9.00 am or at Pukehiki Church at 9.30 am. Bring lunch, warm clothing, good footwear and parkas. Finish time about 3.00 pm. Rain day Sunday 2nd August. Contact David Lyttle, 454 5470 email djlyttle@ihug.co.nz or Moira Parker 478 0214, mobile 027 328 4443.

Wednesday 19th August 5.20 pm Botanical "Show and Tell" Evening Members are invited to bring items of botanical interest to the monthly meeting and talk about them. Items may be short slide shows, books, photographs, plants or any plant related object that has a story attached.

Saturday 1st September, 9.30 am Stevensons Bush Scenic Reserve – Probably one of Dunedin's least known and least visited public reserves. This substantial remnant of dry, coastal, native bush with some mature podocarps surrounded by regenerating trees and shrubs forms a large V-shaped gully from McGregors Hill down to St Leonards and is a remnant of the extensive forest that once covered the north harbour hills. Leave the Department of Botany car park at 9.30 a.m. returning early afternoon. Contact John Steel 021 2133 170, email john.steel@otago.ac.nz

Wednesday 9th September 6.00 pm 13th Annual Geoff Baylis Lecture Speaker Professor Steven Higgins, Castle 1, University of Otago (drinks and nibbles starting from 5.15 pm in the concourse) Department of Botany, University of Otago. Title to be announced. The Geoff Baylis Lecture is held annually by the Botanical Society of Otago, in conjunction with the Botany Department. It is named in honour of Dr Geoff Baylis, the first Professor of Botany at the University of Otago.

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/>.

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Chairman's Notes

David Lyttle

One of the great advantages of belonging to the Botanical Society of Otago is that members are able to go on field trips to some amazing places. The Otago region is one of the principal centres of botanical biodiversity in New Zealand with a rich and varied flora that reflects the diverse landforms and geology of the region, different ecosystems being found within relatively small areas. We also have amongst our members some of the best field botanists in the country who are willing to lead field trips and share their knowledge with botanical novices.

For the first three field trips of the year we took advantage of the summer and long daylight hours to travel to more distant localities. In February we went to West Dome in Northern Southland. This trip proved popular with members who do not reside in Dunedin (in fact out of the 20 or so participants, only two were from Dunedin). As many BSO members are not able to attend our meetings and local field trips the suggestion was made, and will certainly be taken up, that we add a regular annual trip to Southland to our programme. These trips can turn into fairly major undertakings; in this case I also visited Mt Prospect on the eastern side of the Te Anau Basin and returned to Dunedin via Garston, the Nokomai Saddle and the Nevis Valley where further botanising and photography was undertaken. On our second trip in March to Bungtown Conservation Area and Lake Mahinerangi, John Barkla showed us the lakeside turfs at Lake Mahinerangi. Seeing this suite of tiny, ephemeral plants was a revelation. These plants are easy to overlook as they are very small and difficult to identify as the diagnostic characters can only be seen clearly with a hand lens. Earlier in December John Conran, who was visiting from Adelaide, and I had searched unsuccessfully for one particular plant, *Elatine gratioloides*, as he wished to obtain photographs of it to illustrate a publication. It was a case of the blind leading the blind as neither of us had seen

Elatine in the field. We found and photographed a number of tiny turf plants but the most plausible candidate turned out to be *Glossostigma elatinoides*. I was very gratified to be shown the genuine *Elatine* at Lake Mahinerangi so in the end the search was successfully concluded and John got his photos via the internet. It pays to go on these excursions with someone who knows what they are doing. On our third trip of the year to Tahakopa Bay in April there was something for everyone; fungi for the mycologists, lichens for the lichenologists, mosses and liverworts for the bryologists and a variety of vascular plants ranging from tiny ferns (*Ophioglossum coriaceum*) to huge rimu trees. Various members of the party had a great deal of fun sorting out the three species of tree fern growing there (*Cyathea smithii*, *Dicksonia squarrosa* and most notably *Dicksonia fibrosa*). Photographs from all these field trips have been posted on the BSO Facebook page thanks to Kate Caldwell who has taken on the responsibility of managing it. In discussions with the staff of Botany it was pointed out to us that due to constraints imposed by course scheduling and economic considerations the amount of field experience undergraduate students were exposed to was very much less than it had been in the past so over the winter months we plan to visit several locations scattered round the city. Each field trip will offer something different in terms of botanical diversity and landscape and we hope that students and newcomers to Dunedin will join the BSO and use these trips as an opportunity to familiarise themselves with the botany and natural history that is found round the city. On our March trip to Lake Mahinerangi one of our student members found a lichenicolous fungus (a fungus that grows on lichens) that was subsequently identified as *Illosporopsis christiansenii* and is a new record for New Zealand. Every outing is an adventure as we never know what we might find.

Following the AGM I would like to welcome Gregory Nelson and Esther Dale who were elected to the Committee. Both are PhD students in Botany and are working at Landcare Research. Greg and Esther have

agreed to serve as student representatives on the Committee and to encourage students to participate in the activities of the BSO.

It is with regret and sorrow I record the death of Bastow Wilson (April 9th 2015), a founding member of the BSO. Bastow served on the BSO Committee for many years making numerous contributions to the work of the Society. He will be deeply missed and our sympathy and hearts go out to Raewyn, Creda, Padarn, Conner and the rest of the family.

Secretary's Notes

Allison Knight

Summer has merged into autumn and it is with great sadness we report the passing of Bastow Wilson. Bastow was a founding member and a driving force in the Botanical Society of Otago from the beginning. He was Chairman when I first joined the committee, and served on it until he was feeling too poorly to attend meetings. We shall miss his perceptive and sometimes idiosyncratic contributions.

Looking forward, the good news is that four keen young botanists have recently joined the committee. Kate Caldwell, Native Section, Dunedin Botanic Garden, and Gretchen Brownstein, Landcare, came on board at the beginning of the year, and PhD students Greg Norman and Esther Dale were elected at the AGM.

2015 is shaping up to be a year of celebrating botanical excellence. Neill Simpson, who most recently shared his extensive botanical knowledge with us on the West Dome trip, was awarded the QSM in the New Year's Honours. BSO has been asked to support another Botanical Society's nomination for the Loder Cup; in turn we are nominating a prominent Otago botanist for the Allan Mere Award and hoping for support from other Botanical Societies. Watch this space for further developments!

Audrey Eagle, another prestigious BSO member, has recently completed a second Supplement to her magnificent book, *Eagle's Complete Trees and Shrubs of New Zealand*.

These "Historical Notes" are available on the BSO website; for those who prefer the printed word, a reference copy is deposited in the Otago Herbarium in the Department of Botany.

Last weekend I discovered that urban beekeeping is not just happening in Los Angeles (see Newsletter 74), but is alive and well in Dunedin too. Neighbours just up our street have rented a hive which produces kilos of the most delicious honey. Now I know why everything in our garden is so well pollinated!

Message from the Treasurer

Mary Anne Miller

Once again our Annual Financial Report shows we are in a favourable position and as in the previous financial year this is due to a profit resulting from the publication of Allison Knight's *Lichens of New Zealand: An Introductory Illustrated Guide*. However, because of a decrease in membership numbers our subscription income is reduced (in 2015 we have 73 paying members compared to 98 the previous year and 104 prior to that), which has the Committee working hard on plans to increase our profile, especially with tertiary students.

Due to changes in policies at the Westpac Bank we have restructured our accounts: the Audrey Eagle Publishing Fund is now in a Bonus Saver account with a good interest rate and we can access it whenever we publish again without penalty; funds for special events that are accessed more frequently are now in a Business Online Saver account so they can be transferred to the everyday working account when necessary; the everyday working account remains the same.

If you require a copy of the detailed Statements of Financial Performance and Position or would like to check if your subscription is due, please contact me at maryanne.miller53@gmail.com

Editor's Notes

Marcia Dale

Please submit copy for next newsletter by 1st September 2015

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 the editor: imaginarycrayfish@gmail.com 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: Alison Thornton, Sharon Bayne, Esther Dale and Gretchen Brownstein.

Correspondence and News

Bastow: an Appreciation. John Bastow Wilson (10 October 1944 – 9 April 2015).

Peter Johnson

I shall not attempt any overview of the life of Bastow. Comprehensive obituaries will appear elsewhere and as noted by Bill Lee in his eulogy following Bastow's funeral at All Saints' Church, Bastow was a private person who did not talk much about himself. So my observations stem from knowing him for several decades in the Botany Department, the Botanical Society of Otago, and from sharing an office with him up until his final illness.

John Wilson, as he was then known, arrived at OU Botany Department from the UK in

1971. A tall, slim Englishman, his interest in botany lay especially with understanding plant communities and whatever 'rules' might be concluded about how plant species were assembled to types of vegetation. He sought data derived from careful design of experiments and field sampling, data that was then amenable to rigorous statistical analysis. He designed statistical packages that have become widely used internationally. One he named 'Teddy Bear'. (Bastow was always fond of bears; on his office desk, sat a little woollen coloured bear, a companion which went home for them to be together during his last weeks.) The other statistical package was 'Golliwog': there was nothing PC about Bastow.

JBW was of great help to me with experimental design and data analysis when I was doing PhD studies on mycorrhizas. He helped all my fellows too; in those days when data was entered onto punch cards which were taken on foot to the (one-and-only) university computer where, after a day or two, it generated long rolls of wide paper with the results. Over the years I am aware that Bastow has helped numerous other students in the same way, sitting patiently through kindly but critical discussions, helping to write manuscripts.

A botanist and scientist of distinction, and author of numerous publications, JBW adopted a distinctiveness of his own when he chose to become known as Bastow which was his mother's surname. (She had died when he was seven; he was cared for thereafter by his father and three loving aunts). No longer did anyone think of him as John, nor at any time have I heard him referred to as 'Wilson' or 'Dr Wilson', just the one word: Bastow.

During his 'retirement' he became part of the Landcare Research office in Dunedin, playing a notable role of contributing philosophical questions and challenges to lunch- and tea-time discussions such that the question has now arisen as to who might now take over that role. For several years Bastow and I have been fellow Research Associates sharing one

or another small office so that setting gives me the most fresh, and still fresh, impressions of him and of how his half of the office was a partial reflection of how Bastow might have seen himself.

Office decorations: a poster of Rupert Bear, whose 70th anniversary (1990) became, ironically, matched by Bastow's 70 years. A large paper sheet with the coloured crayon message 'Get Well Soon Bastow' which related to his memory-loss illness a few years earlier and from which he made a marvellous recovery. A pinned-up tea-towel, "God Save the Queen" with the Royal Coat of Arms, in keeping with these words which were included on his funeral service card: "Bastow was very proud of being British, and despite living in New Zealand for 44 years, never considered becoming a NZ citizen."

On top of the bookcase, a bowl of artificial fruits and a vase of oriental poppies (also artificial, although Bastow would probably want me to be precise by noting *Papaver orientale*). On his desktop: no pen or paper, but computer gear of course; nothing too unusual in that fact, except that there were two screens, both large, side-by side, and whether Bastow was in the office or not, a slight bump of them while you were using the phone was enough to initiate both screens into a half-hour screen-saver slide show of the actress who had played the part of Hermione in the Harry Potter films.

Who knows how Bastow ever coped before desktop computers. In effect he had not two but three computers; his own mind was one of them. Seeing him walking along the street, slightly stooped forward, as if from the weight of his cranium, you might have thought he was lost in his own thoughts, until, when he saw you coming, he would actually take notice and look forward with narrow quizzical eyes and give you a tooth-gap smile and a quiet greeting.

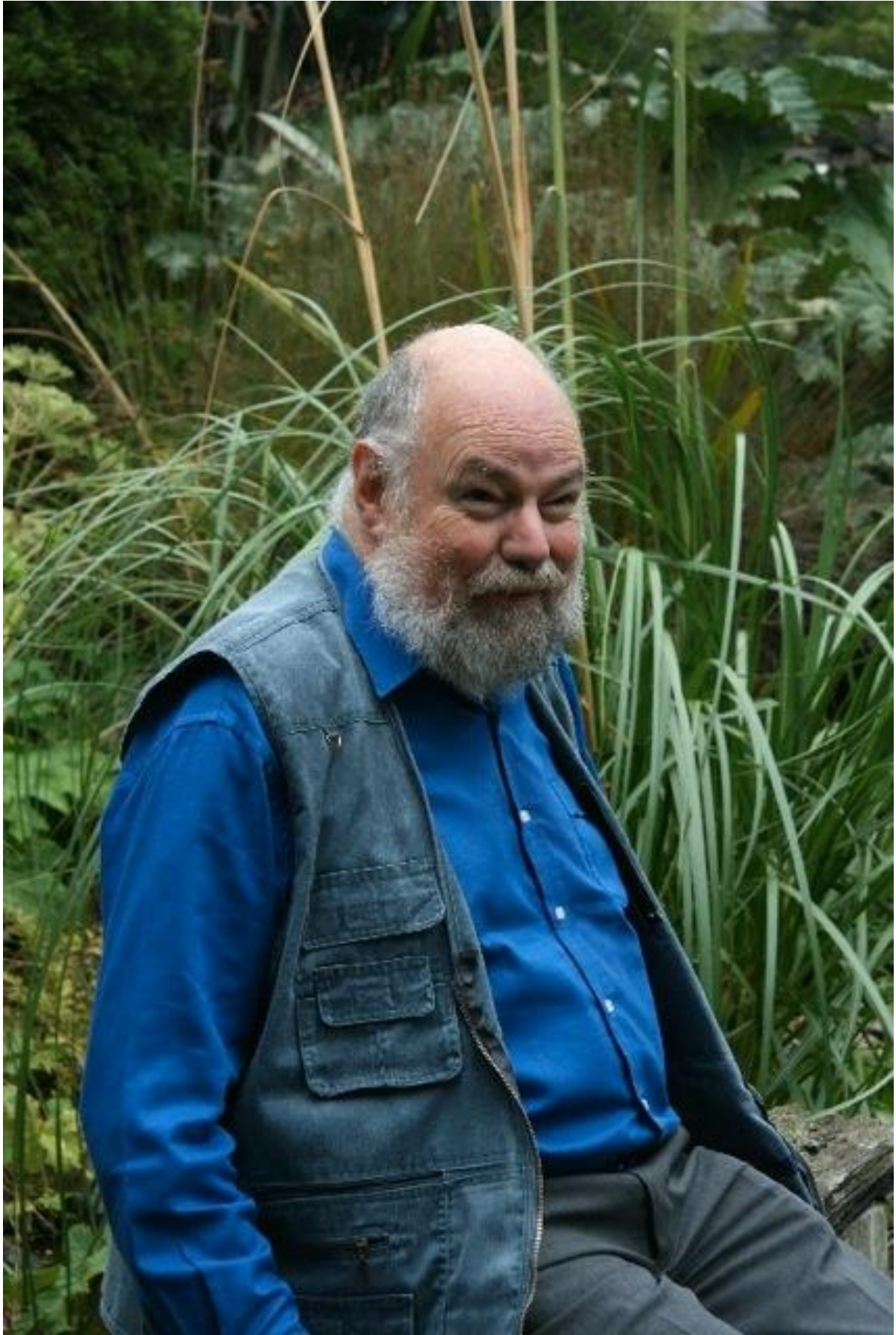
Bastow didn't spend much time on social niceties like hello, goodbye, or have a nice weekend. Over the phone he would not

necessarily introduce himself; just launch into the topic. An email message would often be as brief as "are any epiphytes specific to their host? B." Some email exchanges became like a tennis game, each of you hitting the ball quickly, hoping to score the point. It was often best to let a game stop after a few matches. When Bastow tried to get me to declare where I stood on climate change, I chose to lob the ball weakly over the net with the comment that I was skeptical of the skeptics.

Among his personality traits he was, or happily tried to be, argumentative, competitive, conservative, presumptive, provocative. "Surely" he would chip in during a lecture or discussion, "that cannot be the case", which opened the door to proving otherwise.

Bastow the botanist: aside from the artificial flowers and fruit in the office, I'm not sure that Bastow ever collected any plants, say for pressing, or for growing. Yet he often surprised me with his memory and knowledge of where some plant could be found in a garden or how it grew in the wild. Any plant mentioned in the office would usually have him looking it up straight away for more information from a website. Bastow was one of the founder members of The Botanical Society of Otago; after the Bot Soc had a quiet period, he was a prime instigator in its rejuvenation, and a long-term contributor to its activities.

Bastow was born at 'The Shrubbery', Basingstoke, U.K.: no suggestion of 'in the shrubbery', but either way what a good start for a plant ecologist. On the door of our Landcare Research office he had stuck a photo of a wooden sign pointing to 'Bastow Wood', wherever that might be. He will know and no doubt he is somewhere, safely, in the woods again now. Bastow was a High-Church man. He was a bell-ringer too. Now the bell has tolled for him. His Requiem Mass included the prayer, "May light perpetual shine upon him". Like his plants, he has earned and greatly deserves that.



John Bastow Wilson, 1944 – 2015

Audrey Eagle's Historical Notes and Plant Collection: BSO and OTA connections

Allison Knight

Audrey Eagle, author of the award-winning two volume *Eagle's Complete Trees and Shrubs of New Zealand*, has been meticulously compiling a Second Supplement to this magnificent book. This sets out the details of the collectors and collecting sites for the specimens that she painted for her book. A short run of these "Historical Notes" was published recently with the able assistance of her daughter Alison. They are now available on the BSO website:

<http://www.otago.ac.nz/botany/bso/supplement2.php>

For those who prefer the printed word, a reference copy is deposited in the Otago Herbarium (OTA) in the Department of Botany.

The first Supplement to Audrey's book containing extra information about distributions and other informative details that the publisher omitted, was published by the Botanical Society of Otago, but is now out of print. Sadly, the herbarium copy of this has gone missing. If anyone knows where it is, or has a spare copy they can donate, the herbarium would be most grateful to have this reference book back on the shelf as a useful companion to the main book.

Audrey generously donated the proceeds from the sale of the first Supplement to BSO enabling us to set up the Botanical Society of Otago Audrey Eagle Botanical Publishing Fund. The fund was subsequently used to publish *New Zealand Lichens: an Introductory Illustrated Guide*. Sales from this guide have replenished the fund so it is now available again to help with producing further botanical publications. Hopefully sales from future publications will in turn replenish the fund, so that we have a perpetual publishing fund thanks to Audrey. Audrey has

contributed much more than her name as Patron of our society; for many years she has also judged the biennial BSO Audrey Eagle Botanical Drawing competition which was set up in her honour. She is our first Honorary Member.

Audrey has also donated the voucher specimens that informed her botanical drawings to the Otago Herbarium (OTA). The herbarium was able to employ a summer student to document and mount these specimens thanks to a grant from the University of Otago Alumni Society. The specimens will be retained as a separate collection within the herbarium. Thus this valuable historic collection will be preserved for posterity. Audrey has lodged her original paintings in the Alexander Turnbull Library in Wellington for safekeeping.

The voucher specimens that informed the photographs in the New Zealand lichen guide are also deposited in OTA thanks to a grant from BSO enabling Lars Ludwig to data-base and file them. Other important reference specimens are also deposited in OTA. These are sometimes found on Bot Soc trips, such as the lichenicolous fungus, *Illosporiosis christiansenii*, that a student member, Duncan Nicol, found growing on *Peltigera didactyla* at Mahinerangi. John Steel sent it to Jerry Cooper to check and he identified it as a new record, and a new genus, for New Zealand. New lichen records were also found on the Rock and Pillar trip and the Wellington Botanical Society summer trip.

Call for volunteers

Data-basing, mounting and filing these diverse specimens deposited in the Otago Herbarium takes more time than the busy Botany Department can afford and the herbarium always welcomes volunteers willing to assist. Contact the curator, Janice Lord - janice.lord@otago.ac.nz if you are interested in helping. It's an interesting and rewarding way of extending your botanical knowledge while making a useful contribution for posterity.

Congratulations to Neill Simpson, QSM

Allison Knight

Neill Simpson, founder of the Wakatipu Botanical Group, was awarded the Queen's Service Medal in the 2015 New Year's Honours, for service to conservation. Over the past 60 years Neill and his energetic wife Barbara, have planted tens of thousands of native trees and plants, many of them in public spaces wherever they have lived – Tongariro National Park, Springs Junction and, since 1981, Queenstown. Neill and Barbara have beautified roadsides and initiated and led numerous public and private revegetation projects, from Pigeon Island in Lake Wakatipu to wetlands at the Branches Station way up the Shotover River. They have mobilised volunteers to pull out tens of thousands of trees and are leading the charge to eradicate wilding conifers in the Wakatipu Basin. This has raised awareness of the damaging effect the invasive spread of these exotic trees has on the native vegetation.

Neill and Barb's latest project is the formation of the Wakatipu Reforestation Trust and the setting up and operation of the Jean Malpas Community Nursery. Neill is chairman of the Trust and Barbara organises the volunteer groups potting up in a specially built potting shed, growing on in shade houses and planting on public land along the Kelvin Peninsula and other local places. Barb has also organised school groups to plant in their schools and kindergartens with teachers in support.

Congratulations to Neill on being awarded the well-deserved QSM, and to Barbara for all the support she has given him towards this and to the other awards he – or perhaps it should be they – have been given along the way: the 2014 Inland Otago Conservation Award, the Queenstown Lakes Civic Award; the Allan Mere Award (nominated by BSO); and a nomination for the New Zealander of the year.



Neill and Barbara Simpson on the Wellington Botanical Society trip to Arthurs Pass. (Photo: David Lyttle)

John Child Bryophyte and Lichen Workshop

The 30th. John Child Bryophyte and Lichen Workshop will be held at Gunns Bush camp at Waimate, South Canterbury from 5.00 p.m. Thursday, 8th. – 10.00 a.m. Monday 12th. October. The workshop is open to anyone and everyone with an interest in mosses, liverworts, hornworts and lichens. To register your interest contact Betina Fleming by email fleming.betina@gmail.com

QEII National Trust Brian Molloy Doctoral Research Scholarship

Members, especially postgraduate students, might be interested to know that a QEII National Trust Brian Molloy Doctoral Research Scholarship has recently been set up to promote and advance ecological science and conservation in New Zealand. More details can be found on the Trust's website: <http://www.openspace.org.nz/>

'Botany: Our Heritage, Our Future' exhibition now online

Donald Kerr

Special Collections is pleased to announce that our past exhibition **Botany: Our Heritage, Our Future. A Celebration of Teaching and Research at the University of Otago, Dunedin, New Zealand** is now online. This exhibition ran between 11th September to 5th December 2014 at the de Beer Gallery, University of Otago Library. The link is:

<http://www.otago.ac.nz/library/exhibitions/botany/>

Many thanks to Merrin Brewster (Library Web Developer) for her efforts in pushing this through and to John Hughes (Reprographics, Library) for the image-taking.

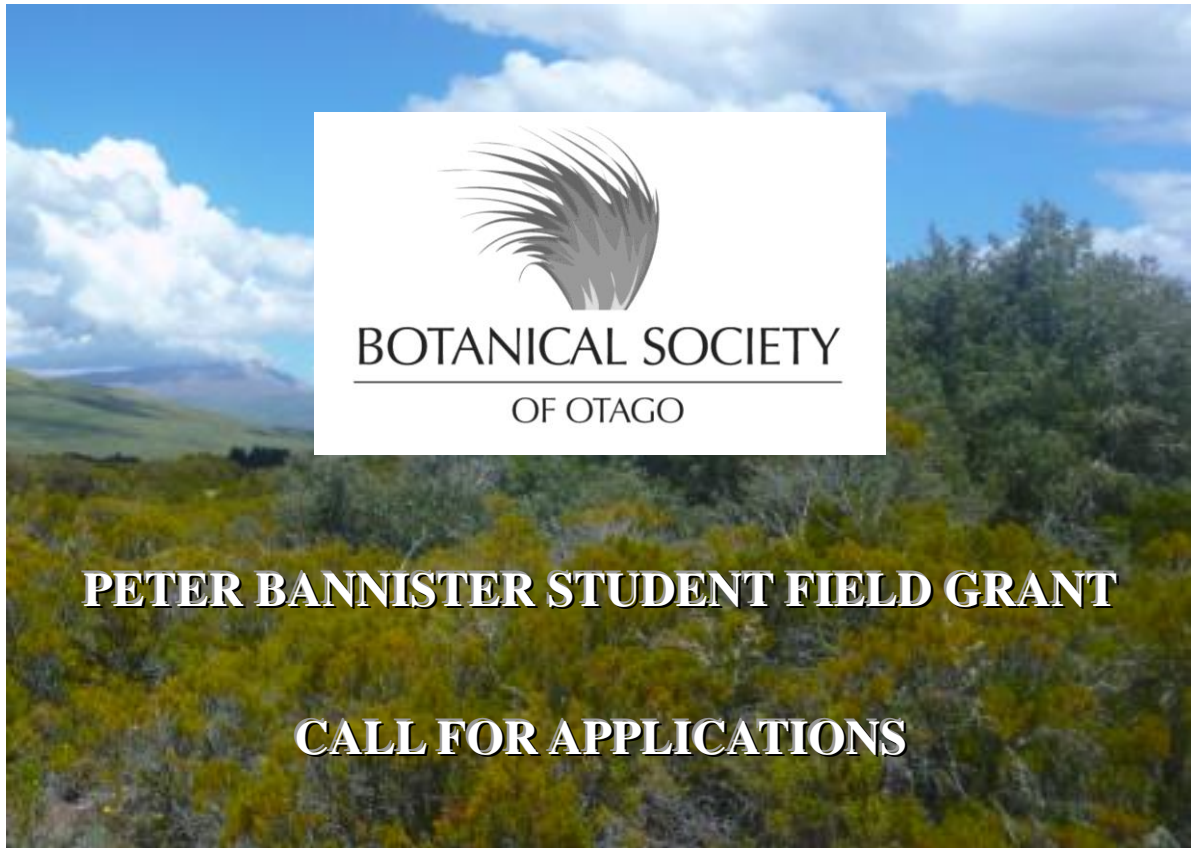
New New Zealand lichenicolous fungus record

A new lichenicolous fungus record for New Zealand was discovered on the Lake Mahinerangi field trip by Duncan Nicol. Not only was this a new species for New Zealand, but also a new genus. It was sent to Jerry Cooper for identification and he had the following to say about it:

“This is quite clearly *Illosporiopsis christiansenii* and a new record for New Zealand. Quite different to *Illosporium carneum* microscopically as its conidia form a round hyphal ball about 15-20um in diameter. *Illosporium* forms clusters of individual conidia in loose balls 50-100um in diameter. Chalk and cheese. So it looks like Galloway's '*Illosporium sensu lato*' is definitely sensu very *lato*. I could only find two collections of *I. carneum* in the herb here. One was correctly identified and the other was this”.



Illosporiopsis christiansenii (Photo: Allison Knight)



Applications are invited for a grant from the Peter Bannister Student Field Grant Fund to assist a student enrolled for the degree of PhD, MSc, BSc (Hons) or PGDip at the University of Otago, New Zealand, whose thesis deals with some aspect of botany.

The research project to be supported will be chosen on the basis of appropriateness to the objects of the Society, namely to encourage the study and knowledge of botany. The grant will be administered through a supervisor's University of Otago account.

The grant is for fieldwork related expenses only. It will **not** support equipment purchases or attending conferences.

Closing date for applications: **21st August 2015**

A copy of the application form and rules may be downloaded from the Botanical Society of Otago website:

<http://www.botany.otago.ac.nz/bs/>

Contact for enquiries:

The PBSFG Administrator
Botanical Society of Otago

P O Box 6214

North Dunedin, 9059

New Zealand

or email: bsotago@botany.otago.ac.nz

Articles

Exciting discoveries on the Rock and Pillar Range and beyond

Allison Knight

Some of you may wonder why I proceed so slowly on Bot Soc trips spending ages peering through a hand lens at twigs and bark, crawling on hands and knees to closely examine the ground, or endlessly banging away at rocks with a hammer and chisel. Recently, among other things, I have been searching diligently for *Buellia* and *Buellia*-like lichens. These form tightly attached crusts and their fruiting bodies look like tiny black dots. Jack Elix, one of the foremost lichenologists in Australasia, has asked me to help him revise the buellioid lichens found in New Zealand.

Following the BSO field trip to the Rock and Pillar Range last December, I sent several interesting looking specimens to Jack in Canberra and followed them up with some collections from the Wellington Bot. Soc. summer trip based at St Arnaud in early January. Now Jack has just sent a preliminary analysis of his identifications, and his results so far are very exciting. He has determined that one of the species that I found on the bank of the Boyle River (while Robyn and Alyth waited patiently on the way to the summer trip) is new to New Zealand; and one that grew on the pebbles just outside the door of the lodge where we stayed at St Arnaud is possibly new to the world!

Closer to home, in fact in my own back yard, as well as on *Plagianthus divaricatus* (salt marsh ribbonwood) visited on a BSO trip to Tavora, is a species that Jack has determined should actually be moved out of *Buellia*, and into *Amandinea*, a closely related genus.

Our Rock and Pillar trip has yielded the most exciting results. Jack says that from there I've found another species that is new to New Zealand, two that are not yet described, but also occur in Australia, and one that is possibly another new species! Jack has only

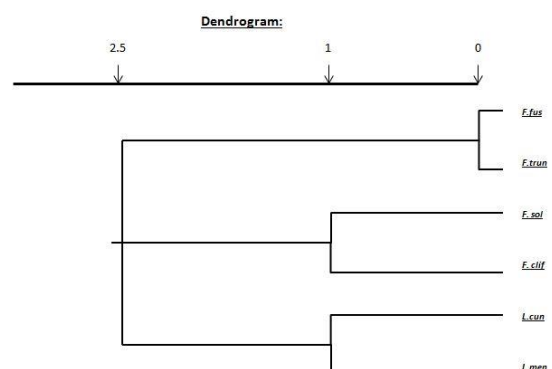
been sent duplicate samples of voucher specimens, and the main vouchers will be lodged in the Otago Herbarium (OTA) once everything has been thoroughly identified and all the new names published. There they will be preserved for posterity, and available for anyone who wants to study them.

So if any of you happen to come across any crustose lichens with tiny black unrimmed apothecia, I'd be very pleased to see them. There are some images of *Buellia* in my introductory lichen guide to help you (though some of the names might change later). You too could be helping to continue the groundbreaking work of David Galloway!

Cluster Analyses May Provide Insights into Evolutionary History of Plants: Nothofagaceae Leaf Morphology Example

Luke Easton

Whilst many of us do not like statistics, cluster analyses may provide insights into the phylogeny of plant species. After looking through some research papers focusing on the phylogeny of the *Nothofagaceae* in Australia and New Zealand, it became evident that this dendrogram is a useful representative of the evolutionary relationships between the species as it is similar to the actual *Nothofagaceae* phylogenetic tree. Although only synapomorphic characters (shared derived traits) can be used, this method allows simple presence and absence data to be reflected as distance values so defining the similarities between species. Of course, this



method should be used with caution: as the number of taxa used in an analysis increases, so does the number of resulting phylogenetic trees which can lead to an exhausting search through the many trees to find the most parsimonious (fewest characters/simple) one. Furthermore, considering traits need to be shared derived, a large set of data is required. However, important relationships can be identified. In this case, the relationship between *Lophozonia cunninghamii* (Australian species) and *L. menziesii* (silver beech), highlights NZ's long term connection

with Australia as part of Gondwana before NZ's separation 80 million years ago. Considering the close relationships between *Fuscospora fusca*, *F. truncata*, *F. solandri* and *F. cliffortioides*, all NZ species, it can be hypothesised that *in situ* events such as climatic shift also promoted divergence in the *Nothofagaceae* instead of just continental drift as in the previous cluster. Overall, cluster analyses are useful and are certainly helpful in piecing together the complex relationships of our native and endemic flora. So maybe statistics isn't bad after all.

Presence and absence data:

	Leaf size	Leaf edge	Bi-serrated	Pointed tip
<i>F. fusca</i>	1	1	0	0
<i>F. truncata</i>	1	1	0	0
<i>F. solandri</i>	0	0	0	1
<i>L. cunninghamii</i>	0	1	1	1
<i>F. cliffortioides</i>	0	0	0	0
<i>L. menziesii</i>	0	1	1	0
RULE	<17mm=0, >17mm=1	Absent=0 Present=1	Absent=0 Present=1	Rounded=0 Pointed=1

Distance measures:

	<i>F. fusca</i>	<i>F. truncata</i>	<i>F. solandri</i>	<i>L. cunninghamii</i>	<i>F. cliffortioides</i>	<i>L. menziesii</i>
<i>F. fusca</i>	-	-	-	-	-	-
<i>F. truncata</i>	0	-	-	-	-	-
<i>F. solandri</i>	3	3	-	-	-	-
<i>L. cunninghamii</i>	3	3	2	-	-	-
<i>F. cliffortioides</i>	2	2	1	3	-	-
<i>L. menziesii</i>	2	2	3	1	2	-

	<i>F. fusca</i> / <i>F. truncata</i>	<i>F. solandri</i>	<i>L. cunninghamii</i>	<i>F. cliffortioides</i>	<i>L. menziesii</i>
<i>F. fusca</i> / <i>F. truncata</i>	-	-	-	-	-
<i>F. solandri</i>	$3+3/2=3$	-	-	-	-
<i>L. cunninghamii</i>	$3+3/2=3$	2	-	-	-
<i>F. cliffortioides</i>	$2+2/2=2$	1	3	-	-
<i>L. menziesii</i>	$2+2/2=2$	3	1	2	-

	<i>F. fusca</i> / <i>F. truncata</i>	<i>F. solandri</i> / <i>F. cliffortioides</i>	<i>L. cunninghamii</i> / <i>L. menziesii</i>
<i>F. fusca</i> / <i>F. truncata</i>	-	-	-
<i>F. solandri</i> / <i>F. cliffortioides</i>	$2+2+3+3/4=2.5$	-	-
<i>L. cunninghamii</i> / <i>L. menziesii</i>	$2+2+3+3/4=2.5$	$2+2+3+3/4=2.5$	-

Meeting and trip reports

Vegetation response to past climate change in New Zealand, 11th February 2015

David Lyttle

Tammo Reichgelt from the Geology Department gave a talk at the February meeting of the BSO entitled “Vegetation response to past climate change in New Zealand”. We first met Tammo on the March 2014 field trip “Botanising in the Miocene” when we visited three fossil plant sites near St Bathans. On this occasion he was one of the guides assisting Daphne Lee and Jennifer Bannister explaining the significance of the sites and fossils found there to us. Jennifer Bannister has talked to the BSO previously on the painstaking collection and preparation of plant leaf fossil from these Miocene sites and how they provided evidence for a warm temperate/subtropical rainforest in Otago in the early Miocene. Tammo has extended this analysis obtaining detailed palaeoclimate estimates for temperature and precipitation from the study of the fossilised leaves. Tammo discussed his analyses and the methodology used to draw inferences from the data that was generated. It is rather remarkable that the power of this approach enables a plausible picture of the climate prevailing in Otago 20 myr ago in the Miocene to be drawn. Apparently at the time Otago had a climate similar to that prevailing in South Queensland today. An excellent talk that was enjoyed by all who attended.

Field trip to West Dome, northern Southland, 14th to 15th February 2015

David Lyttle

West Dome is a prominent landmark on the Lumsden Te Anau highway immediately to the north of Mossburn. The Dome itself is 1270 m and is a southern outlier of the main Eyre Mountains mass which lies between the Oreti River to the west and Mataura River to

the east. West Dome is underlain by a belt of ultramafic rocks. These rocks contain high concentrations of magnesium and iron. They weather to a soil that is low in nutrients and toxic to most plants. The resulting vegetation is often stunted, slow-growing and contains fewer species than vegetation at comparable fertile sites. Some plants however have evolved to grow on ultramafic substrates sites and are restricted to them.

The first area we looked at was an area of sparsely vegetated ultramafic pavement. Plants found here included *Selliera microphylla*, a close relative of the coastal species *Selliera radicans*, *Gingidia decipiens*, *Plantago raoulii*, *Gentianella serotina* and *Stackhousia minima*. The plants of *Gentianella serotina* growing on ultramafic substrates were dwarfed compared with *G. serotina* growing on non-ultramafic sites further up the hill as is the case for several other species. *Stackhousia minima* is a tiny creeping mat-forming plant with yellow flowers that is usually overlooked. The nationally critical species *Chaerophyllum basicola* was also present. It has been recorded from only two other sites; Bald Hill across the Oreti Valley from West Dome where it grows on similar ultramafic soils and at Awahokomo (upper Waitaki Valley) where it grows on limestone derived soils. We encountered our first West Dome endemics (not strictly confined to West Dome as both are found at other sites in Northern Southland where similar ultramafic rocks occur),



Euphrasia dyeri showing white and mauve flowers. The plant is growing in very wet conditions in flowing water. (Photo: David Lyttle)



Celmisia spedenii showing its characteristic growth form. One flower remains on this plant that has more or less finished flowering. (Photo: David Lyttle)

Celmisia spedenii, and a very distinctive undescribed forget-me-not, *Myosotis* 'Mossburn'. The *Myosotis* has dark foliage with contrasting stiff white hairs on the leaves and calyx. *Celmisia spedenii* is an attractive species with narrow grey-green linear leaves and grows as large clumps. The *Myosotis* had long since ceased flowering, but there were still a few flowers present on *Celmisia spedenii*.

We continued up the hill skirting round massive rock outcrops through shrubland dominated by manuka (*Leptospermum scoparium*) a plant that is able to tolerate the poor infertile soils. One particular plant that was found was a *Pimelea*, identified on the plant list as *Pimelea suteri* (a species confined to ultramafic substrates in Nelson). However, careful comparison of the West Dome plants with *Pimelea suteri* from Dun Mountain, Nelson, shows that they are different particularly with respect to the leaf hairs, leaf shape and growth form. Further finds were another unidentified *Myosotis* and *Celmisia* "grassy leaves" which resembles *Celmisia gracilentia* but has much broader leaves. As we gained height the shrubland opened out to sparse *Chionochloa* tussock grassland interspersed with numerous bogs. There were occasional stands of beech growing on islands of non-ultramafic rock. On one particularly wet site we found *Euphrasia dyeri* flowering prolifically. This plant is annual and parasitic on grasses. The flowers open white and darken to mauve as they age. The bogs



Myosotis sp. This very distinctive unnamed *Myosotis* is known by the tag name 'Mossburn' It is growing amongst fragments of dark green ultramafic rock. (Photo: David Lyttle)

proved to be a good hunting ground. Among the species recorded were the comb sedge, *Oreobolus pectinatus*, *Centrolepis ciliata*, which grows as soft cushions, *Luzula leptophylla*, *Chaerophyllum* 'bog', *Celmisia glandulosa*, *Dolichoglottis lyallii*, *Empodisma minus* and *Coprosma elatirioides*. One of the last species that was observed was nationally vulnerable threatened species of dandelion, *Kirkianella novae-zelandiae*. This was growing on ultramafic pavement. It occurs sporadically at various locations around Otago and I have recorded it from two other sites in the Eyre Mountains. This particular trip attracted participants from all over Otago and Southland and provided a good opportunity for members living outside Dunedin to participate in the activities of the



Stackhousia minima growing on ultramafic pavement. The dark green rock fragments weather to a brownish red colour as the iron minerals contained within them oxidise. (Photo: David Lyttle)

Society. We were fortunate to have Brian Rance and Neill Simpson with us and their knowledge was invaluable in identifying the plants we found and interpreting the communities in which they were growing. At the end of the trip we all congregated back in Mossburn for ice creams and dispersed back to our respective homes.



West Dome looking south east. The summit lies further back beyond high point in the picture. Scattered clumps of beech may be seen growing amongst the rock outcrops on what is otherwise a depauperate, boggy, tussock grassland. (Photo: David Lyttle)

QEII Covenants in Otago, a talk by Robin Thomas, 11th March 2015

Allison Knight

On 11th March Robin Thomas, the Queen Elizabeth II National Trust representative for Coastal Otago, spoke to an appreciative audience. Robin generously told us about his own property near Sutton Salt Lake and described some of the Open Space covenants in Otago that the Trust has helped set up and maintain. In his well-illustrated talk Robin showed us a map of the over 4,300 covenants throughout New Zealand that had been approved and registered by June 2014, and a graph showing how the number of covenants is growing exponentially. Covenants range in size from just a few hectares to over 53,000 hectares with an average size of 41 hectares. The map highlighted the huge dearth of covenants we have in inland Eastern Otago, an area which is largely covered by the three highest risk zones - Acutely Threatened, Chronically Threatened and At Risk. Four of

the most striking slides showed the dramatic difference that effectively fencing a covenant can make in just two or three years towards promoting regeneration. The explosion of ground cover and understorey in fenced regenerating forest where all browsing mammals had been removed was astounding. The actual boundaries of the property in the before and after photos shown below aren't fenced. However this covenant became surrounded by other covenants which are fenced, which shows the enhanced power of collective neighbour actions! Robin described how the Trust can help private landowners protect areas of high conservation value by providing help with such things as fencing and rate relief. His talk generated so much interest that a very lively and extended discussion followed. Anyone interested in setting up a covenant can contact Robin at: RThomas@openspace.org.nz



Coastal Otago QEII Open Space covenant. Upper - September 2012, Lower - December 2014 (Photos: Robin Thomas)

Bungtown Conservation Area and Lake Mahinerangi, 28th March 2015

Kate Caldwell

What is Bungtown? Is it where I go when I has too many beersies? No! Well, kind of, indirectly, ie. when I decide that I must strive to be wholesome, and go on more Saturday morning nerdscursions with other members of the Otago Botanical Society. Bungtown is a tiny (3.5ha) conservation area in the headwaters of the Waitahuna River, over near Lawrence. I suppose its curious name dates back to Bungtown stream's gold mining heyday – but who knows what sort of noteworthy bunging was going on to justify naming the whole place after it.

BUNGTOWN!

Why so spesh, apart from its delightful name? One reason is that, as you can read from the sign, *BOGPINE HALOCARPUS BIDWILLII* AN UNCOMMON PLANT AT LOW ALTITUDES IS FOUND IN THIS RESERVE



There is NO time for punctuation when you are in the business of conserving remnants of lowland swamp NONE You can see also in the above picture, behind the sign, most of Bungtown Conservation Area. The reserve boundary is just behind that dark yellowish green blob in the centre. That blob is the stand of *Halocarpus*. Bungtown bog extends a bit

further than just the wee conservation area. According to the Otago Regional Council it is 17.6 hectares of sweet sweet bog. And all around that, predictably, are miles of pine blocks and paddocks. Sigh etc.

It's fair to say that Bungtown was teeeeeeming with tiny life; fair crawling with the stuff. You wouldn't know that at a glance, or even two, so it was good to go for a wander (botanists' crawl) and poke and squelch and sniff around a bit. The more you see, the more you see....

There was at least one fernbird, but I only heard it. I heard it twice actually, but turned out the first time it was only John Barkla, bird-whispering. Uncanny.

There was some cool fungi about, enjoying the juicy nature of the bog, and lots of mosses, lichens and liverworts too. I reckon these brilliant red ones are wax-gill mushrooms. I've seen these around a bit, always in highly juicy places.



As for this divine creep! It's *Fuligo septica* - dog's vomit. It's a slime mould.



Slime moulds are weird. They are not fungi, or animals, but in a class of their own. In fact, they are in a KINGDOM of their own. They move around and shapeshift and stuff. COMPLETE WEIRDOS. I was glad to meet old dog's vomit today. He was actually much more highlighter yellow than it appears in this photograph, I just didn't know how to make that go into the camera. I'll add, a little superfluously, a quote; "*Fuligo septica*: the slime mould you'll never forget. It's what got me interested in slime moulds." – John Steel.

Ooh that's inspiring stuff. I really do hope that we can all find a dog's vomit in our lives to get us interested in slime moulds. Or whatever it may be for each of us that ignites a lifelong passion in our souls.

It is unlikely that your lifelong passion will be small-leaved coprosma species, but dammit, I will not ignore them ANY MORE. What coprosmas really need is our caring attention and focus, so we can learn that they are all special snowflakes, worthy of our appreciation and respect. But, focus and attention can be hard in these times of smartphones and instant gratification. It IS hard for some of us to put down the smartphone, so to aid you in your coprosma ID, how about trying the new, shiny coprosma app! Yup, it's a thing! (I'm pretty sure you'll still have to put some studious focus into stipules and leaf hairs to really get the most out of the app). I didn't spend too much time sniffing round the coprosmas on this particular occasion but did ask my wise companions to tell me what the main ones were. So, let's review the contestants:

Our first bachelor is *Coprosma elatirioides*. It is found in South Island swamps and bogs, often lurking around with similar characters to whom we saw it with at Bungtown: bog pine, sphagnum moss, wire rush and red tussock.

Coprosmas are a little scary to ID because they're almost all twiggy little shrubs with tiny leaves. However, with any one species, there are only ever a few species that look super super similar, and usually they are found in different habitats. So if you can manage to get your head in the game, a hand lens, and a good field guide or key, they're not toooo difficult to work out (ok apart from the whole hybridising thing, but let's not talk about that). Usually I can't be bothered, so I just ask someone who knows, but chances are you have a little more attention span than I do so you should definitely give it a go. Bring a nerd friend, it's funner that way (coprosma-focussed nerd friends are hard to find, but when you do they are worth their weight in gold). *C. elatirioides* looks a lot like *C. intertexta*, having similar leaf size and shape, but would you find it at Bungtown? No way, 'cause *intertexta* lives in dry scrub and grasslands. *C. rugosa* looks similar too, but different in the leaf. While *C. elatirioides* has evenly spread hairs on the surfaces of the leaves, *C. rugosa* also has hairs on the leaf surfaces, but they are in clumps. Ewww! Bit subtle innit. I'd prefer to distinguish them by the fact that *C. rugosa* is an erect shrub (as is *C. intertexta*), whereas our mate *C. elatirioides* is prostrate. He hugs the ground, forming mattress-like mounds which can be up to about six metres in diameter. Or sometimes the long flexible branches sprawl around, like this guy's:



If you're familiar with the sand coprosma, *C. acerosa*, you'll understand that he could also be confused with *C. elatirioides*. Similar leaf shape and size, and he shares the prostrate plant form – but again they like different habitats. Sand coprosma likes well-drained sites, in coastal areas. Like in the sand. At the beach. Also it always has glabrous leaves – no hairs, scattered or otherwise.

Arggg! I just realised I'm getting completely sucked down the rabbit hole of coprosma talk, and it is probably reeeeeally boring. So, quickly, the other bachelors I saw at Bungtown were good ol' *C. dumosa*, and *C. cheesemanii*. And now no more coprosmas for today, good day coprosmas. I said good day. (this is not the end. We will be back).

As for the nearest relatives to coprosma – let's go there. The nerteras! I love nerteras, don't you? Juicy, friendly (aka relatively common), creeping little groundcovers, with cute round (and presumably edible) berries. And they like hanging out where filmy ferns live, so what's not to love? *Nertera* is a widespread genus of about 15 species, mostly found in Australasia and South America. They are known as 'bead plant', for those who are into common names. I prefer to just go with 'nertera'. It means 'low growing' so it is nicely descriptive, and such a cute name too that

it could be a contender for a botanist's baby's name (maybe just a middle name). In New Zealand there are eight species of nertera. At Bungtown we came across *Nertera depressa*, and it was fruiting gloriously. I ate a couple of berries, they weren't bad. I think there were two seeds in each berry. Unlike some of the other nerteras, the leaves of *N. depressa* are glabrous. Supposedly when it is bruised, *N. depressa* stinks like *C. foetidissima* – I couldn't smell it on this particular occasion though. *N. depressa* is the cutest. It's found in all the main islands of Aotearoa (North, South, Stewart, Chathams, Subantarctics) as well as in Australia aaaand southern South America. It likes the foreeest, by the coast and in the mountaaaaains, scrubby spots, grassland and the alpine zone, growing all the way up to 1400m. So, you know, it's around. The places I've seen it at its most lush and luxuriant, and most abundant and spready, have all been in the forest – you know those really juicy, ferny spots where the moss mosaic is ultra diverse, that's where it really thrives. There are some growing at the Botanic Garden under a *Dracophyllum longifolium* in a spot that's a bit shady, a weee bit juicy and ultra well-drained. The nertera has spread a bit in the few months since it was planted and actually the leaves seem like they have *shrunk* now – but that could be my imagination.



Nertera depressa (Photo: Kate Caldwell)



Nertera depressa in Dunedin Botanic Garden (Photo: Kate Caldwell)

I get a real bang out of seeing my little forest friends growing in the garden. It's not the same as seeing them in the wild, but the Botanic Garden is just up the road from a lot of our homes (and it is a pretty great garden) so it's still really really cool, I say.

Another shrubby guy that was associating with the coprosmas at Bungtown was *Olearia bullata* – not a plant that I've come across heeeps even though it is apparently common in higher spots around Otago. Even its type locality is Flagstaff hill. It likes the eastern South Island the best, if the spot is wet enough for it. I have a seedling I have planted in my garden at home which is grown from seed from an *O. bullata* that has naturally hybridised with *O. illicifolia*. The leaf characteristics of this plant are intermediate between the two parents and the result is a rather dreamy garden plant.



Here a fellow botanist is checking out a good squelchy patch inhabited by an interesting plant community. There is plenty of sphagnum and other mosses, with hard mounds of the comb sedge *Oreobolus strictus*, a bit of the ubiquitous *Blechnum penna-marina*, *Gonocarpus aggregatus* (in the Haloragis family), the odd *Celmisia gracilentia*, *Androstoma empetrifolia*, and even a couple of flavours of sundews (*Drosera arcturi* and *D. spatulata*).

I want to give a little bit more attention to the bog pine, because I really haven't got these guys down yet. Bog pine, pink pine, yellow-silver pine, monoao – I'm sure they're all quite different but I definitely have not got them sorted in my brain yet.

Halocarpus is an endemic genus to New Zealand. There are three species, bog pine, (*H. bidwillii*), pink pine (*H. biformis*), and the exclusively Northern-dwelling monoao (*H. kirkii*). Bog pine is the smallest – 3.5m tall max, but usually quite small shrubs. Pink pine can get up to 10m tall, and monoao is a tall tree up to 25m in height. Clearly *Halocarpus bidwillii* and *Halocarpus biformis* are the easiest two to get mixed up – even their names are way too similar. They overlap in range, sometimes, too, often growing together and even hybridising. Ewww! If it happens to be in fruit, you can hopefully tell whether you are looking at a bog pine or a pink pine because the seeds of bog pine have a waxy white coat (aril) at the base, and on the pink pine the arils are yellow to orange.

It was nice to do a spot of reading on these guys (thank you Rob Lucas, John Dawson, NZPCN, and the TERRAIN website) and next time I see a wee bog-loving conifer, maybe I'll be a bit more open to figuring it out. (I am pretending that LEPint doesn't exist for now).

I love finding wee gems close to my own Dunedin backyard, like Bungtown Conservation Area. Squelching round in the bog, looking around at the plantsperts around me, I felt very grateful to be a part of this little botanical community. I would really encourage any budding plantspeople to come out on a Saturday excursion.

After our morning squelchings at Bungtown, we visited Lake Mahinerangi, which is 35km west of Dunedin, on the western side of mighty Maungatua. Old Bungtown ain't far away; it's just down the road.

Mahinerangi is quite small – about 12km long if you were to stretch it out like a worm, and skinny too. Actually Mahinerangi *is* kind of worm-shaped, or maybe more like an eel.

Lake Mahinerangi was *created* – yup, it's a man-made lake – in the 1920s, when the Waipori river was dammed. It is crazy that you can just flood a bit of river and make a big old permanent lake with a 21km surface area, but what's even crazier is that there was a TOWN under there!

I find it a haunting thought – kind of romantic, kind of creepy – that a whole town was allowed to just sink and decompose down there, leaving just the odd relic to be shorecombed by wandering fisherfolk on occasions when the lake level drops.

Our mission at Lake Mahinerangi on this particular afternoon was, of course, a botanical one – to check out the community of tiny herbs at the lake's margin. OooooOOOOH. As usual I wondered how this area would have looked in pre-human times, which is kind of hard considering there wasn't a lake here before. And in fact most lowland lakes I've visited have been far from pristine, so I was struggling to find a more....natural...lake to compare it with in my mind.

It struck me as very barren. Of course I had my big ol' macro eyes on, and I sort of had to adjust my focus, and zoom in a little, before I could appreciate that mother nature was still up to her old tricks.....

This lake and her shores are not completely dead, and in fact the silty, fissured substrate is home to a few threatened plant species. The flora of ephemerally wet, turfy places like this is all pretty new to me. It's an uncommonly encountered habitat – wetlands of this type

make up an extremely small proportion of New Zealand's total land area. Despite that, 20% of our native flowering plant species can be found in ephemeral wetland environments. So it's not really surprising that there is a high proportion of uncommon and threatened plants in the turf flora. Geoff Rogers and Peter Johnson, describe turf vegetation as: “a compact sandwich comprising foliage, prostrate surface stems and below-ground rhizomes, roots, underlying soil, and surface-trapped sediments”. I just really like how they called it a sandwich. Nom. Their official definition of turf is:

“a vegetation structural type of low stature (generally < 3 cm tall) of mainly herbaceous vascular plants that are prostrate and tightly interlacing, forming a ground-hugging and often dense carpet of intertwined plants of numerous species.”

Enough quoting. It's lazy. But they said it well. That is exactly what we saw. I was glad I had a hand lens, because these plants are extremely tiny. Not being committed to some sort of hands and knees/lying on stomach/awkward squat pose is out of the question if you want to view these little guys.



Botanical Society day-trippers sharing in turfy wonder (Photo: Kate Caldwell)

Turf plants are often fast growing and short-lived, good at flowering, and able to survive even if a bit of them breaks off. Here are a few examples:



A. Maniototo button daisy, *Leptinella maniototo*. It has two distinct types of foliage, depending on the season! In winter or on plants submerged in water, the leaves are linear. In summer, they do the 1-pinnatifid thing you see in this picture.

B. *Elatine gratioloides* is variable in size and form. It is in the monotypic Elatinaceae family, which contains about 15 species. *E. gratioloides* is the only one in NZ.

C. The naturally uncommon *Montia angustifolia* (formerly a *Neopaxia*), has a 'sporadic distribution' (NZPCN). I like it's very narrow, blunt-tipped leaves. It's a wee babe.

D. The very minute flowers of *Crassula sinclairii*. Plants in the Crassulaceae family are mostly succulents of warm temperate regions. Crassula are small, succulent herbs with opposite leaves

which are sheathing across the stem. There are about 300 species in the genus. New Zealand has 13 native species and 6 naturalised. (All photos by Kate Caldwell).

Like at Bungtown, there was a whole world of minute fecundity going on down there. One could catch a glimpse into it, with the power of a hand lens and a moment of concentration.

After looking at all the tiny things, the big flaxes and South Island toetoe next to where we parked our car looked downright majestic.

Please email John Steel at john.steel@botany.otago.ac.nz if you would like a copy of his species list so you can read about the plants that like to hang out in these Lake Mahinerangi turves. It turns out the plural for 'turf' is 'turves'. Which is weird. But okay.

BSO AGM, 8th April 2015

Allison Knight

Apologies were received from Moira Parker, John Steel and Janet Ledingham.

The Chairman spoke briefly about Bastow's extensive contribution to the BSO committee, expressed our sorrow at his sudden death and extended our sympathy to Bastow's wife, Raewyn.

The Chairman's, Treasurer's and Secretary's reports had been posted on the BSO website and were accepted as read.

Mike Thorsen commented that no-one could equal Bastow in asking penetrating questions. He thanked Mary Anne for the good work she is doing as Treasurer and Allison for donating the profits from sales of her Lichen Guide to BSO to help achieve a positive balance. The following were elected unopposed.

Chairman *David Lyttle*

Secretary *Allison Knight*

Treasurer *Mary Anne Miller*

Committee:

Robyn Bridges (Programme manager; communications officer),

David Orlovich (Web manager)

John Barkla (Calendar Producer)

Marcia Dale (Newsletter editor)

Tina Summerfield (Botany Dept. rep.)

Gretchen Brownstein (Social officer)

John Steel

Kate Caldwell

Greg Nelson (Student rep.)

Esther Dale (Student rep.)

Ex officio help: *Jean Bretherton*

The possibility of co-opting further help and committee members was kept open.

A most beautiful framed picture of *Lichenomphalia alpina*, painted by the talented artist Marcia Dale, was presented to Allison as a thank you for her generous donation of the proceeds of her Lichen guide.

The meeting finished in 8 minutes.

Photographic Competition, 8th April 2015

Mike Thorsen

This report in the past has normally been written by Bastow Wilson (if normally can be comfortably used in a sentence about Bastow!) who passed away recently. I cannot hope to replicate Bastow's wonderful dissections of previous competitions, but the effort put in by the 13 photographers who entered 53 photographs in this year's competition deserves recognition.

The results of the 2015 photography competition were revealed at the AGM and provided a great excuse for members such as myself to come out of recent obscurity. And I must say at the start I was surprised by the overall quality of the photographs, there were many that portrayed remarkable elements and there were no outstanding winners (or losers). The judges Peter Johnson, Rod Morris and Kelvin Lloyd must have had interesting discussions when evaluating the merits of photographs as wide-ranging as close-ups to



Plant portrait winner-Jazz Morris "Madrona (Arbutus menziesii) bark detail"

wide-angle, plants to lichen to fungi, Subantarctic to America by way of Australia and Europe, colourful to muted, simple to complex, with titles from the prosaic “alpine herbfield” to the suggestive “fifty shades of green”.

Peter Johnson presented the results of the competition and also provided some insight into each of the photos. First he paid tribute to Bastow (with whom he shared an office at Landcare): his deceptively simple questions and fondness for teddy bears. Peter then went through the photographs and in his soft and wondering fashion draws attention to the small features and subtexts in each photograph. An ability that I am always in awe of and that always increases your appreciation of the image. His comments

would draw on a wider than wide botanical knowledge – offering identifications of fungi and lichens on the fly, quoting Ansell Adam’s “found subjects” and the contextual “to garden or not to garden” (note: gardening in photography refers to removing a distracting leaf or something before taking the photograph – but Peter has also developed an extensive native garden in his home). His language included descriptives, such as “simplicity, colour, suggestive, lovely, eye’s journey, what the hell’s this”, and he urged the photographers in next year’s competition to take the scene in front of them and make it theirs in their own unique image. I would like to close by also encouraging the photographers to get more out of their images and offer these tips when looking for photographs: (on next page)



Plants in the landscape winner-John Barkla “Hebe elliptica at Heyward Point”



Student winner – Bridget Thomas “Rose in rainshower”

- Spend 30 seconds or a minute considering why you are taking this photo – What drew your attention? What is it that you like? The patterns, symmetry, colour, action, composition? Illustrate this in your photo.
- While most cameras focus in the centre of the frame, this does not mean that the subject has to stay in the centre of the frame. Photographs often look better when the main subject is off to one side with another element leading your eye to it. With many cameras, once you have the subject focussed you can move the camera to locate the subject where it looks best if you keep the shutter button half-pressed (this locks the focus).
- The most challenging is an old maxim from street photographer Henry Cartier-Bresson who considered there was an ideal time to push the shutter button and the best photographs were those taken in that decisive moment. When photographing wind-blown plants this is a real challenge!

Field trip to Tahakopa River Mouth, Catlins, 18th April 2015

Kate Caldwell

The sun glinted off the water of the Tahakopa River, as Botanical Society members gathered on a stunner of an autumn morning to explore a lush piece of Catlins rainforest.

Our route followed the estuary-hugging ‘Old Coach Road’ track, from where it begins at the bridge at Papatowai, to where it emerges at the Tahakopa river mouth. We wandered east along the sandy shore of Tahakopa Bay, then we popped back into the bush, and strolled along the ‘Old Possumer’s Track’ all the way back to the carpark where we had begun.

Our path through the forest was rather gentle, with just enough mud to make us feel a bit intrepid, and no significant ups and downs. The dominant tree species and the overall character of the forest was changing all the time as we travelled through slightly different microclimates.

We passed through a narrow band of silver beech forest, which holds the distinction of

being the most southern stand of beech in New Zealand. Some of us paused to figure out the differences between thin-barked totara and lowland totara, both of which are growing here. Seeing large stands of old coastal totara trees was definitely a highlight. In a well-lit spot we discovered that some of them were hosting the tiny, epiphytic and naturally uncommon *Drymoanthus flavus*.

There was a diversity of ground ferns. The tree ferns, too, were impressive, and it was a good chance to observe the differences between katote (*Cyathea smithii*), whekī (*Dicksonia squarrosa*) and whekī-ponga (*Dicksonia fibrosa*). The whekī-ponga were particularly striking, among them some of the tallest and most full-skirted I have seen.

Meanwhile there were bryophytes and filmy ferns galore, and some interesting fungi, including a rather greyish specimen of the blue toadstool *Entoloma hochstetteri*.

Our idyllic lunch spot, overlooking the estuary, was near the eroded remains of an ancient midden, dating back to the moa-hunter period of the early 1000s. The Tahakopa Bay area would have been an ideal place for early Polynesian settlers to hunt and gather from the river, bush and sea. It has been a site of much archaeological interest. Bones of fish, kurī, and birds, including a number of species of moa, have been found here, along with immense quantities of shells, and various types of implements.



Entoloma hochstetteri The fabled blue mushroom of New Zealand forests. This particular specimen is grey/blue rather than the intense blue of specimens found elsewhere (Photo: David Lyttle)



Dicksonia fibrosa (Photo: Kate Caldwell)

The forest at Tahakopa Bay grows right up to the shoreline - or perhaps I should say the shore goes right up to the forest – either way, it is rare to see the two come together in the eastern south island.

The naturally uncommon sand lobelia (*L. arenaria*) grows in the sand at the forest edge, not far from astelias, acaenas, and, less surprisingly, marram grass and lupins. On the consolidated dunes above, like old sentinels, bleached and wind-pruned totara, and the odd rimu, overlook the ocean.

We clambered up the dunes and back into the bush, where we enjoyed the fecundity of the swampy podocarp forest, with its rimu and kahikatea, miro, matai and totara, kamahi and pokaka.

I would highly recommend a visit to this scenic and botanically rich area. John Steel has compiled a species list which shows the diversity of ferns, lichens, bryophytes, trees,



The filmy fern Hymenophyllum frankliniae. The lamina of this species is covered with stellate hairs (Photo: David Lyttle)

herbs and shrubs observed at Tahakopa scenic reserve, if anybody would like a copy.

Many thanks to Marcia for organising this magical wee trip, and to everyone else who was there for making it an enjoyable and educational day.

For a more verbose version of this story, feel free to read my blog post at plantyourmind.wordpress.com

Please email John Steel at john.steel@botany.otago.ac.nz if you would like a copy of his species list for this trip.

Molteno's Regenerating Bush, Signal Hill, Dunedin, 2nd May 2015

John Steel

There were plenty of reasons not to go on this trip – local vegetation, brilliant Dunedin day and a million things to do at home, but it was

just up the road and we could be home by lunchtime. Suffice to say, the first three were spot on, but this was quite different from our usual excursions and I ended up having to make do with a very late lunch! Tess and Anthony Molteno had invited us to visit their 20 hectare property before, but the weather on that occasion had beaten us, big softies that we are! This time, a warm and hospitable welcome awaited us and the Moltenos graciously shared their knowledge of their home which they have occupied for the past twenty-five years. The house is protected on two sides by some fine old macrocarpas and an old *Eucalyptus globulus* while the garden contains an interesting and eclectic mix of herbs and shrubs – native and introduced – dominated by a beautiful, 30-year old *Protea cynaroides* while the driveway ends with a fine pair of *Olearia oporina* and *Brachyglottis rotundifolia*.

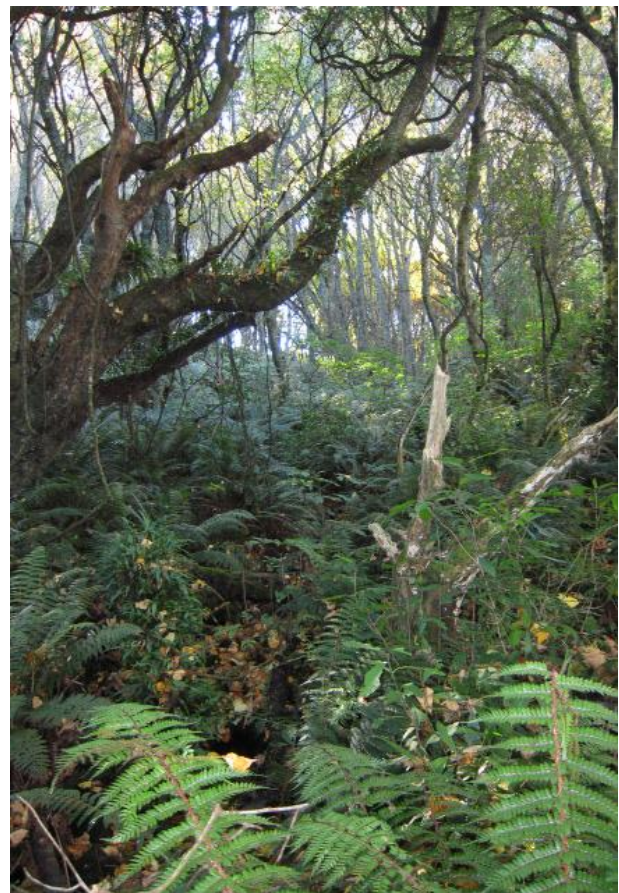
Away from the garden we were introduced to a large stand of old *Kunzea robusta* which the Moltenos have fenced off to allow regeneration to take place. Here was, for me, the most interesting part. This area of Dunedin, just five minutes from the city centre, has long been cleared and re-cleared for farming so that there will be little chance of an immediate seed source. Even at 300 metres this still has the feel of a rather dry site. The understorey was dominated by *Rubus fruticosus* which the canopy cover of *Kunzea* had held (thankfully for us) more or less at ground level. There were a few *Coprosma rhamnoides*, *C. dumosa*, *Griselinia littoralis* and *Myrsine australis*, but beyond that the natives were few and far between. The ferns here were also notable by their scarcity; the aspleniads, *appendiculatum*, *flaccidum* and *gracillimum*, were holding their own and one *flabellifolium* was noted struggling through the prickles. Thinking the gully may have better pickings, we fought our way towards the stream and as we progressed *Blechnum procerum* came and went and then the forest opened slightly as the *Kunzea* was replaced by *Acer pseudoplatanus* in full, autumn colours. The *Rubus* almost, but not quite, gave way to masses of the fern, *Polystichum vestitum*. The gully did not live up to expectation and even the bryophytes were in short supply, the highlight there being a small, but impressive clump of *Leiomitra lanata* and a group of the fungus, *Xylaria castorea*, parading along a rotting log. On the way out of the gully there was a very small patch of *Acaena juvenca* which held my attention while the bulk of the troupe headed for the house to lick their wounds and settle for a welcome cup of tea.

Across the road from the house is the other half of the property, a long rectangle, the further half of which is a pine plantation and the remainder mainly a sheep paddock with a battered, old *Eucalyptus globulus* holding fort over the sheep and a few rotting logs hosting a plentiful supply of *Tremella mesenterica*. Either side of the paddock are two gullies which have been variously planted in exotic and native trees and shrubs, one of which, posing as *Veronica salicifolia*, fits more into

V. pubescens – definitely not a Dunedin native, but possibly a garden-centre-sourced introduction or offspring of plants from the commercial nursery pre-dating Tess' and Anthony's occupancy.

All in all we were left with a puzzle. Here, the Moltenos have commendably made efforts to preserve a stand of kanuka some of which are becoming quite old and will in the course of time give way to the next phase of vegetation. But what will that be? In the absence of seed sources, not just for the podocarps, but even for the broadleaves, it is interesting to ponder on what form any succession will take. Will the natives return? Will the wide mix of exotics be able to take over completely? Will the impending climatic change alter the microclimate in favour of the interlopers? I need a volunteer to return a hundred years from now and let me know.

Please email John Steel at john.steel@botany.otago.ac.nz if you would like a copy of his species list for this trip.



Molteno's Bush (Photo: John Steel)

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Please submit copy for next newsletter to Marcia Dale by 1st September 2015

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Lunch spot at the Tahakopa River Mouth (Photo: Kate Caldwell)



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