BOTANICAL SOCIETY
OF OTAGO

Newsletter Number 70 October 2013

BSO Meetings and Field Trips

Wednesday 16th October 5.20 pm Talks by Botany Department Colloquium speakers
Talks from Botany Department Colloquium winners showcasing some of the latest research by our most capable young botanists. A stimulating and varied evening is in store so please come and support the speakers.

2nd-3rd November 9 am Weekend trip to Long Point
A weekend trip to this stunning coastal peninsula in southern Catlins managed by the Yellow-eyed Penguin Trust who have great plans to restore seabird communities there. As well as the stunning coastal scenery, penguins, seals and sealions, there are interesting plant communities including coastal turfs with rare plants, coastal shrublands and forest remnants. For more information visit the website: http://yellow-eyedpenguin.org.nz/our-work/habitats/long-point/ Please note it's quite exposed so come prepared for cold and windy conditions, but hope for better. Details on where we will be staying on the Saturday evening to be posted. We will leave Dunedin 9am Saturday 2nd November and return by 4-5pm Sunday 3rd. If you would like to come, please contact Robyn Bridges, phone: (03) 472 7330, email: robyn.bridges@otago.ac.nz

Wednesday 20th November 5.20 pm Variation in pollinators' view of flowers and plants, a talk by Dr John Conran, Associate Head, School of Earth and Environmental Sciences, Adelaide.
Humans often assume that what we see is seen by others. This is not true and needs to be taken into account when thinking about plant pollination by insects and birds. Because of the variation of perceived light waves and ultra violet light, different species have different views of the world. For example a bee's view of green foliage would be a 'real bad acid trip' for humans. Dr Conran will discuss the implications of this variation in relation to pollination in the New Zealand flora.

Wednesday 4th December 6.30 pm End of year dinner
At Harvest Court Cafe, 218 George St. If you would like to come, please contact Bill Wilson, email: rdwilson-dn@xtra.co.nz

Saturday 7th December Field trip to Kakanui Peak

Kakanui Peak at 1528 m is one of the highest points in the Kakanui Range which runs in a north-westerly direction inland from Palmerston. We will travel to the top of the Pigroot and climb up to the summit of the peak: approximately an 800m climb. Vegetation is mainly snow tussock grassland, but there will possibly be a few surprises as the area has not been extensively botanised in recent years. For an overview of this area, including the geology and wildlife, please see: http://www.recreationaccess.org.nz/files/rec_plan1_03_kakanui.pdf

Foul weather back up date Sunday 8th December. Meet 8.30am Botany Department car park, Great King Street. Contact: David Lyttle, phone: (03) 454 5470, email: djlyttle@ihug.co.nz

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 Captain Cook Hotel. Use the main entrance of the Benham Building to enter and go to the Benham Seminar Room, Room 215, 2nd 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. 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). 50% student discount now available on all trips! **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

This past month we have held two very successful events, first the 12th annual Geoff Baylis Lecture delivered by Dr Peter Heenan. The second event was a very successful field trip to Trotters Gorge ably organized and led by John Steel. The highlights for me were seeing *Pimelea pseudolyallii*, *Celmisia hookeri* and *Lagenophora pinnatifida* and finding specimens of *Melicytus micranthus.*

Pimelea pseudolyallii is a naturally uncommon species and is not often recorded. *Celmisia hookeri* is endemic to north-eastern Otago and superficially resembles *Celmisia verbascifolia* from further west. *Lagenophora pinnatifida* apparently is found mainly in beech forests and there do not seem to be many records from east Otago where beech forest is not common. For *Melicytus micranthus* there are very few records (less than a dozen) from the Otago /Southland region. Seeing four uncommon plants in the course of a day made the outing quite rewarding and emphasizes there are little islands of biodiversity tucked away in the hinterland.

This leads in to the next topic; the submission on the Otago Conservation Management Strategy. This was a large and complex document and I would like to thank Allison Knight, Bradley Curnow and Fergus Sutherland for their contributions on behalf of the BSO. As an interested party with considerable fund of scientific knowledge to draw on I feel the BSO can make useful comments on these matters and that it is incumbent on us to do so and draw public attention to the issues that are of concern to us as botanists. For example in reference to the Eastern Otago and Lowlands Place of which Trotters Gorge is a part we suggested:

"*Include a policy to record and document the occurrence of rare and endangered plants and in conjunction with local authorities and land owners put in place measures for the protection of such plants*."

If such measures are not taken we could easily lose elements of the local flora which are special to us and unique to this area.

Now for some housekeeping. The BSO is presently experiencing something of a cash flow problem. It is not yet a crisis but the Committee will need to put measures in place to mitigate it. Our membership is static and has declined a little. Our costs have increased due to the cost of producing the newsletter increasing and the Government education subsidy that we used to fund the Baylis lecture being no longer available. As the main source of income to meet the BSO's expenses are the membership subscriptions every member is important. We value your contribution as it enables us to keep doing the things we do: ie produce a newsletter, hold the Baylis lecture, the annual photographic competition, the Audrey Eagle drawing competition and award prizes for the best talks presented at the Botany Department Student Colloquium. There are a number of things we need to do to strengthen our financial position. The first is to increase our membership. Please pay your sub if your membership has lapsed, join if you are not already a member, or persuade a friend to join. Consider receiving the newsletter electronically. We may move entirely to electronic publication. It is almost inevitable we will have to increase subs and get rid of some of the concessions that we now offer, for example the 5-year sub. We run on a shoestring thanks to the efforts and hard work by our Committee so please keep supporting us.

Secretary's Notes

Allison Knight

By far the biggest piece of mail, in size and in importance, which arrived recently was the huge draft **Conservation Management Strategy for Otago**, which set out the Department's proposed intentions for the integrated management of natural and historic resources within Otago over the next ten years. This provoked much discussion in the committee about the difference between 'advocacy' and 'advisory' and what our society's role is in such matters. The general feeling was that the society should use its botanical expertise to advise on such matters. David Lyttle prepared our submission. I'm glad he did, because in the process he discovered that lichens, mosses, liverworts, hornworts and fungi were completely overlooked. Yet these groups add considerably to the biodiversity, containing many more many species than the vascular plants. They play significant roles in all land ecosystems and in many cases their conservation status is known. This was brought home on the recent trip to Trotters Gorge, which is home to Otago's most endangered lichen, and one of four on the nationally critical list (see report).

The **Charities Commission**, now under Inland Revenue, continues to tighten its surveillance of all charities. Our treasurer, Mary Anne Miller, keeps us up with the play and the implications for BSO.

Bastow Wilson has taken charge of the **Newsletters from other Botanical Societies**, and will be bringing them to meetings for members to enjoy.

New Members

A warm welcome is extended to the following new members:

Judy Russell, Jennifer Harland, Michael Heads, Murray Blake and Donna Shield

Editor's Notes

Please submit copy for next newsletter by 31st January 2014

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.

Erratum: Page 28 Newsletter, 69:28-29 Correction to species list for Tunnel Beach. *Buellia* sp. should read *Rinodina oleae*.

Message from the Treasurer

ELECTRONIC PAYMENTS

You may prefer to pay your membership by Direct Bank Transfer to the Botanical Society of Otago's bank account rather than pay by cash or cheque. We realise these days that direct debit transfer payments seem to be the norm for most people.
If you choose to pay by direct debit/Paypal please ensure you include:
Your Name in particulars/ reference **and** what you are paying for, e.g., **Membership** or **Calendar**.
That way we can keep our database up to date.
Our Bank is Westpac Moray Place, Dunedin

Account No. 030905 0029158 00
Botanical Society of Otago

Many thanks

Mary Anne Miller, Treasurer

Correspondence and News

Change of address for BSO website

The website of the Botanical Society of Otago has now changed to the following:

http://www.otago.ac.nz/botany/bso/.

University of Canterbury Summer Course in Practical Field Botany

Venue: Mountain Biological Field Station at Cass, Canterbury
Dates: 7th-15th January 2014

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.

This course will be valuable for students who intend to seek employment in areas such as field ecology, conservation, biodiversity, and taxonomy or biosystematics. It will also be of interest to members of the workforce who need to acquire or upgrade taxonomic skills, e.g., from Crown Research Institutes, Department of Conservation, Local and Regional Councils, Botanic Gardens, horticulture, and teaching.

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 common plants of the Cass and surrounding areas quickly,
- identify and name plants correctly and accurately,
- 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.

For enrolment, please call 0800 VARSITY (827748) or email enrol@canterbury.ac.nz

For further enquiries and help with enrolling, please contact me
Dr Pieter Pelser; Senior Lecturer in Plant Systematics and Curator of the University of Canterbury Herbarium (CANU)
School of Biological Sciences, University of Canterbury, New Zealand
Email: pieter.pelser@canterbury.ac.nz
Phone: (03) 3642987 ext 45605

150th Birthday of the Botanic Garden

When Dunedin Botanic Garden opened on 30th June 1863 it became the country's first botanic garden. This year's 150th anniversary will be celebrated through exhibitions, talks, displays and other events. Most of these will be free, making it easier for you to be part of these celebrations. The following are selected botanical highlights from the Botanical Garden's birthday calendar.

OCTOBER

Exhibition: Past Photos Of Dunedin Botanic Garden
Snippets from the Reed Gallery.
All month Daily 10.00am – 4.00pm Information Centre, lower botanic garden

Hort Talk: The Magic Of Mushrooms
Cool new developments in the world of fungi. Join Bart Acres from Otago's Local Food Network and Otepoti Urban Organics.
Friday 4th October 12.00 noon Botanic Garden Centre, upper Lovelock Ave

Workshop: Making Watercolour & Oil Paint From Rocks & Plants
Learn some of the secrets from artist Celia Wilson.
Saturday 12th October 2.00pm – 4.00pm Information Centre, lower botanic garden ENTRY: $10. Bookings essential*

5th Global Botanic Gardens Congress
Watch out for opportunities to be involved.
Sunday 20th – Friday 25th October

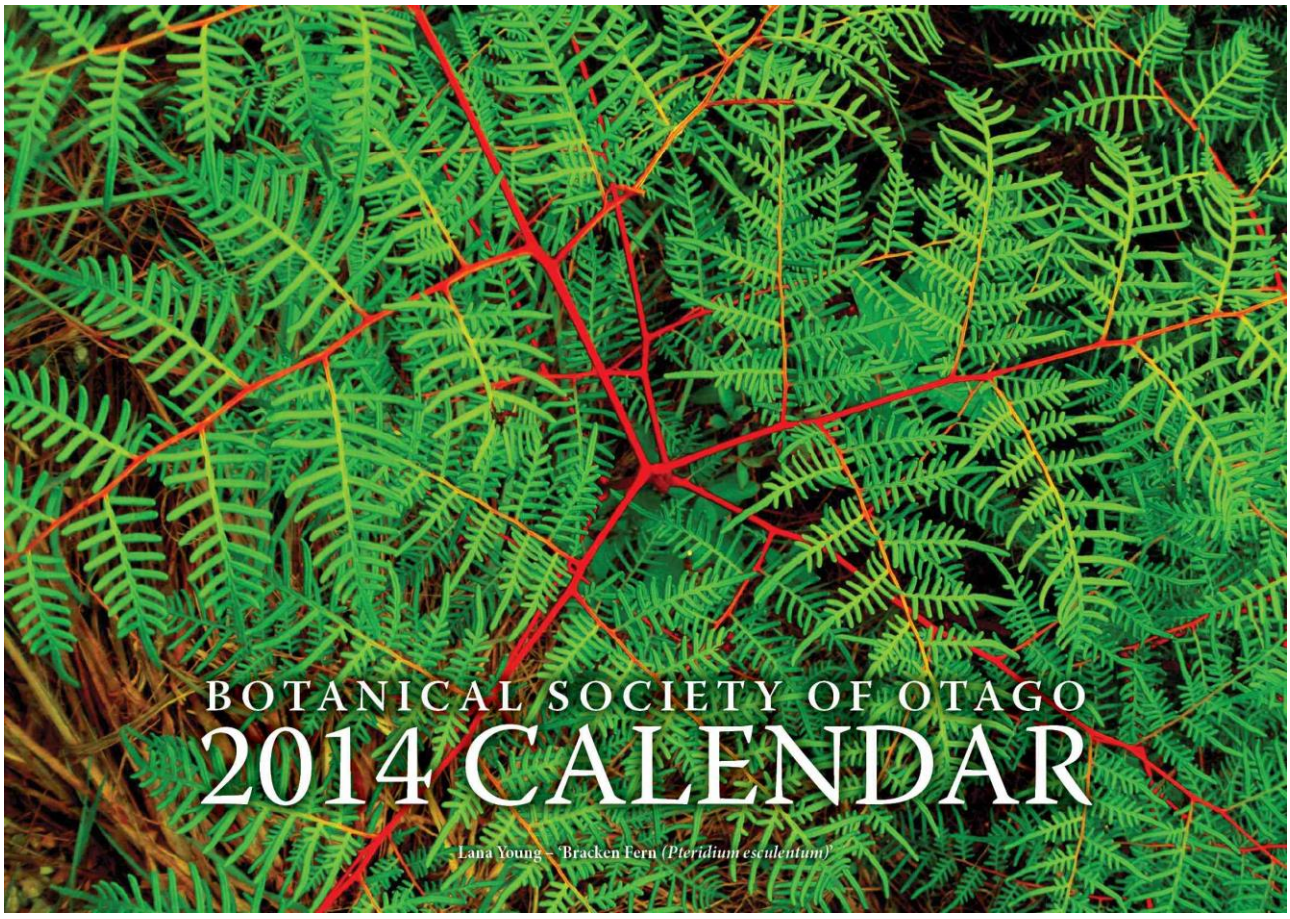
NOVEMBER
Workshop: Cultivation of Rock Garden & Alpine Plants
Join Robyn Abernethy, Collection Curator of rock garden and alpine house.
Saturday 30th November 10.00am – 12.00 noon
Meet at Information Centre, lower botanic garden ENTRY: $10. Bookings essential*

The Botanical Society of Otago's 2014 calendar is on sale now

$20 ea. (or multiple copies for **$18 ea.**)
[add $2.50 for mail orders]

Available from the Botany Department Reception, University of Otago (**cheque or correct amount of cash only**) & at Society meetings
For electronic payment email the Botanical Society of Otago (bso@otago.ac.nz) with your name, address, and whether you want to collect the calendar from Botany Department reception or have it posted, and payment details will be sent.

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



Articles

Conservation status of New Zealand indigenous vascular plants, 2012.

John Barkla

A panel of botanists has produced the first list that records the conservation status of every known New Zealand native vascular plant. The list is available through the DOC website at:

http://www.doc.govt.nz/upload/documents/science-and-technical/nztcs3entire.pdf.

The new listing has been published by DOC, sponsors of the triennial threat review process.

The list[1] records the threat status of 2415 vascular plants from the New Zealand Botanical Region that have been formally described and given scientific names. It also includes the threat status of a further 166 native plants ("tag-named" entities) for which there is compelling evidence to suggest that they may be worthy of future formal taxonomic recognition.

The panel of botanists from the National Institute of Water and Atmospheric Research (NIWA), Landcare Research, Auckland Museum Herbarium, the University of Canterbury School of Forestry and the Department of Conservation (DOC) conducted the conservation assessment in May last year. It replaces the previous assessment done in 2008 that assessed the threat status of 2530 plants.

The increase in the number of plants assessed in the latest review is due to improved knowledge of New Zealand's native plant life. An example of that is the recently published[2] research that recognises 11 new species of Cooks scurvy grass, all split from the single species that was previously recognised. Ten of the 11 new species of Cooks scurvy grass are listed as threatened. Two of these new species, *Lepidium crassum* and *L. juvencum*, are found in Otago. The eleventh new species, *L. amissum*, is believed extinct.

A total of 243 plants were listed as threatened in 2008. This has increased by 46 to 289 in the 2012 listing. This is due to the fact that an extra 50 plants were assessed in 2012 plus a range of ongoing environmental threats. These include loss of habitat, browsing by pest animals, the spread of plant diseases and competition from weeds. A further 749 taxa are listed as 'At Risk' in the 2012 listing (up from 731 in 2008).

The threat status of 20 native plants on the latest threat list has improved as the result of conservation management, improved knowledge of the plants and finding new populations of the plants.

The names of 116 taxa differ from those used in the 2008 list as a result of taxonomic revisions, amendments, or formal description of previous "tag-named" entities.

[1] de Lange, P.J.; Rolfe, J.R.; Champion, P.D.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Norton, D.A.; Hitchmough, R.A. 2013: Conservation status of New Zealand indigenous vascular plants, 2012. *New Zealand Threat Classification Series 3*. Department of Conservation, Wellington. 70 p.

[2] de Lange, P.J.; Heenan, P.B.; Houliston, G.; Rolfe, J.R.; Mitchell, A.D. 2013: New *Lepidium* (Brassicaceae) from New Zealand. Phytokeys 24:1-147pp, doi: 10.3897/phytokeys.24.4375

High Altitude Botanising

Rowan Hindmarsh-Walls

During the previous summer season I was fortunate enough to get to some amazing places throughout Otago and Southland, through my work for the Department of Conservation. I was working in a national inventory monitoring team, as a botanist/ecologist/birder. Regional teams collect data for a large scale plant and bird biodiversity monitoring project across New Zealand. Our teams are responsible for

View of general area where our plot was located (Photo: Rowan Hindmarsh-Walls)

monitoring most of the plots in the Southern South Island, from Haast Pass/Dunstan Range south to Stewart Island. We set up and measure 20mx20m vegetation plots, with associated bird stations and ungulate monitoring lines. These plots are set at precise 8km intervals across all of the conservation land in New Zealand, and are able to be re-measured every 5 years. Due to the pre-determined nature in which our work areas are selected, plots often end up in some pretty unusual places. One example of this was a plot we set up and measured near Little Lochnagar Peak in the Richardson Mountains, north of Queenstown.

At approximately 2000m above sea level the plot was our second highest in altitude, and was in a pretty bleak south facing spot. As we looked over a map of the area to determine a good helicopter landing spot we noticed that not only was the plot high and steep, but was also located close to the last remnant of an un-named glacier. This was going to be a fun one!

As the chopper lowered us onto a nice looking camp site just below the crest of Glencairn Spur both Rich and I noticed that there were quite a few large animals watching us from an outcrop only a few hundred metres away. We leapt (carefully) out of the cabin, quickly unloaded our gear, grabbed our rifles and stealthily raced up the hill. We intercepted some goats as they were crossing a conveniently open face below some bluffs, and let rip. It sounds somewhat sadistic, but I get great satisfaction from removing exotic animals and plants from areas where I know they are causing great damage to the native vegetation. I feel like I'm making a little bit of a difference. Unfortunately our efforts

Ourisia glandulosa*, Richardson Mountains, 1800m asl (Photo: Rowan Hindmarsh-Walls)*

Epilobium purpuratum, *Richardson Mts, 2000m asl (Photo: Rowan Hindmarsh-Walls)*

Chionohebe thomsonii, *Richardson Mountains, 1900m asl (Photo: Rowan Hindmarsh-Walls)*

Haastia sinclairii *var.* fulvida *inflorescence closeup, Richardson Mountains, 1900m asl (Photo: Rowan Hindmarsh-Walls)*

were really just a token gesture. There were many more goats, each one capable of munching kilograms of vegetation per day, and signs of browse were everywhere. We had limited time and more pressing work to get done.

After navigating through a set of bluffs, over many steep icy snow shoots, and around glacially eroded ribs of schist bedrock, we finally reached the location where the plot was to be set up. The plot area turned out to be 1/3 bedrock, 1/3 glacial rubble, and 1/3 semi-permanent snow (in March). The area looked like it had been covered in glacial ice until very recently, possibly only 10-15 years ago judging by the almost un-weathered state of the glacially smoothed bedrock. Surprisingly eight species of plants were present within the 20mx20m square, somehow managing to cling onto the unstable rock and glacial silt. These included two grasses, *Agrostis muelleriana* and *Poa novae-zelandiae;* three willow herbs, *Epilobium crassum, E. glabellum* and *E. purpuratum;* also *Myosotis pulvinaris, Cardamine corymbosa* and *Colobanthus canaliculatus*. In this high-altitude active environment, where snow probably covers the ground for all but 2-3 months of the year a surprisingly diverse plant and associated animal community persists. After completing all the plot work I was able to spend the long
evenings exploring the surrounding area and compiling a species list. I was surprised to find 54 species of vascular plants along a 2km section of the range, all growing between 1800 - 2200m altitude. For me the most interesting finds were species that had fairly restricted distributions or ones I had not come across before, the top 10 being *Aciphylla kirkii, Anisotome imbricata* var. *imbricata, Chionohebe* (not *Veronica*) *thompsonii, Epilobium purpuratum, Haastia sinclairii* var. *fulvida, Ourisia glandulosa, Pachycladon novae-zelandiae, Poa schistacea, Raoulia youngii* and *Schizeilema exiguum*.

Aside from the plants, the 360 degree vistas of the surrounding mountains and Lochnagar were fantastic! There was a great view of an immense mountain collapse that blocked a valley, creating the lake (Lochnagar). It is certainly an impressive reminder of the unique qualities (and weaknesses) of schist rock, which not only shapes most of the Otago landscape, but also harbours many special and unique plant species.

Lochnagar showing mountain collapse that blocked the valley (Photo: Rowan Hindmarsh-Walls)

Two new species and three new names added to the lichen genus *Cladia* in New Zealand

Allison Knight

Cladia aggregata is one of the most widespread and variable lichens in New Zealand. Over the last few years Sittiporn Parnmen and colleagues in Thorsten Lumbsch's group at the Field Museum in Chicago have been comparing the DNA of related species from the genus *Cladia*.

Two recent publications report that New Zealand now has two new species of *Cladia* - *Cladia blanchonii* and *Cladia cryptica* and three new names – *Cladia terebrata, Cladia gorgonea* (both new to New Zealand) and *Cladia muelleri* (was *Heterodea muelleri*). The type specimen of *Cladia cryptica* was found during the combined Wellington and Otago Botanical Society summer camp at Boyd Creek. The other new species, *Cladia blanchonii* was named after Dan Blanchon, an Auckland lichenologist. Congratulations, Dan! - and thanks to all the Botanical Society members from Auckland and Dunedin (including Lars Ludwig and Alyth Grant) who contributed to this international research. Without their help we wouldn't know that these new species do occur here.

References

Parnmen, S.; Lumbsch, H.T. (2012) New combinations in the genus *Cladia*. *Lichenologist*, 44:297-298.

Parnmen, S.; Leavitt, S.; Rangisiruji, J.; Lumbsch, H.T. (2013) Identification of species in the *Cladia aggregata* group using DNA barcoding. *Phytotaxa*, 115:1-14.

Ecosystem services – a mountaineering perspective.

Jaz Morris

In recent years it has become a sad necessity to couch the value of our environment in tangible, financial terms; concepts such as 'ecosystem services' have arisen in an attempt to justify why we ought to protect our environment (rather than doing so for its own sake). Thinking of these ecosystem services, one typically imagines the broad-scale, long-term benefits that we humans ungratefully receive and extract from our environment: water, food, prevention of erosion, etc.

For the typical mountaineer, the demands on our flora and fauna, especially in the alpine, are more immediate. While New Zealand's alpine regions do not lack for water and native food (whether from plants or animals) or landscape stabilisation is largely out of the question, the plants of the mountain landscape provide innumerable benefits that may not be immediately obvious to the casual observer. This brief essay shall attempt to openly and honestly describe some of the less well-known uses for our plants. A warning: some practices are controversial and may upset some botanists. Reader discretion is advised.

1. Climbing frozen plants

New Zealand's winters, temperate and generally warming up, offer little to the winter mountaineer in the sense of frozen waterfalls, reliable snowfall and the like. Desperate to emulate the steep, technically challenging climbing of our overseas counterparts, a small, perverted section of the New Zealand climbing scene has adopted frozen turf as its climbing medium of choice. As in Scotland, the equally perverted home of turf climbing, this form of mountaineering centres around the use of ice axe and crampons to climb anything frozen, whether moss, tussock or even dirt. A thin seam of anything with the general consistency and relative reliability of ice can turn otherwise unscalable mountain faces into viable mountaineering prospects. From Ben Nevis to Otago, climbing routes are creatively named by the first ascentionists; "Turf War" and "Home Turf" are classic routes of the style in their respective regions.

In New Zealand, tussocks (*Chionochloa* spp.), deep-rooting alpine herbs (*Celmisia* spp. and *Anisotome* spp.) and vegetable sheep (*Raoulia* spp. and *Haastia* spp.) are a true delight to climb, offering secure and deep placements for all the recent advancements in ice-axe

ironmongery. Fortunately for these slow growing and fragile plants, turfy climbing routes are seldom repeated and the protagonists of this venture are few and far between. Additionally, routes of this nature are restricted to the most accessible parts of the Remarkables and Upper Hollyford, and show little sign of their range expanding. Damage to the plants however, is a sad inevitability.

2. Burning plants

Another short-term requirement of the mountaineer, as well as something to climb, is something with which to keep warm. Again, our alpine flora offer a rich bounty: tussocks with which to start a fire, turpentine scrub (*Dracophyllum* spp.) to keep it running, even when wet, and fragrant-smoked shrubs such as mountain toatoa, *Phyllocladus alpinus*, to deter sandflies and mosquitoes.

Some skill is required in choosing the appropriate fuel for the fire. Despite the name, turpentine scrub burns hopelessly when green, but dead wood will burn wet (of course, dry wood is far preferable). Silver beech (*Nothofagus menziesii*, but soon to be *Lophozonia*) burns hot and readily, albeit slowly (good for a 'nightwatchman' log), while mountain beech (*N. solandri* var. *cliffortiodes*, soon to be *Fuscospora*) burns poorly and very quickly. Anything with 'daisy' in its name is best left alone. Care must be taken when burning tussock not to catch an entire hillside alight.

3. Morale and happiness from plants

When venturing into the alpine, mountaineers may feel as though they are leaving the living world behind - in the 'nival zone' (roughly above 2000m) flora and fauna are generally excluded by the harsh conditions. In the Mt Cook region in particular, one's vulnerability to the vagaries of mountain weather and conditions is underscored by the absence of obvious life. If hardy mountain plants and animals fail to survive these places, what hope for the pathetic human?

The final 'ecosystem service' we will discuss here is the simple morale boost gained simply from encountering plants when they are not expected. To discover *Ranunculus buchananii* blooming at 2500m on the buttress of Mt Aspiring or lichens (*Thamnolia* spp.?) on the 3600m summit rocks of Aoraki/Mt. Cook is to be reminded that life is pervasive, persistent and potent, even when we think (because we are cold, and struggling?) that conditions are surely too harsh for anything to survive in these places. Our mountain world is in fact full of life; the mountaineer delights in it. Then, after the privilege of such a trip, we return to Dunedin to be indirectly fed and watered by these self-same species. How priceless!

Climbing 'Home Turf', Homer Tunnel (Photo: Jaz Morris)

Meeting and trip reports

Visit to Ferntree Lodge Gardens, Ferntree Drive, Wakari, 11th May 2013

David Lyttle

Ferntree Lodge was the family home of the Thomson family for 60 years. The house was bought in 1898 by Alexander Thomson (1846-1904), a well known Dunedin soft drink manufacturer, and it was during their ownership that many of the existing trees were planted. Over 6,600 square metres of lawns, gardens and trees were planted. Most were natives, particularly North Island varieties rarely seen in the lower South Island. Two of Alexander Thomson's sons, William Alexander (Bill - the eldest) and John Scott (Jack - the fourth), became distinguished amateur botanists. William Thomson lived at Ferntree Lodge until his death in 1950. The Lodge and garden have had a chequered history since then with the property being subdivided and the gardens neglected. The DCC owned the property for a time in the 1980s and during their tenure, Ferntree Reserve adjacent Taieri Road was subdivided from it. The reserve, which contains some mature trees planted by the Thomsons as well as some of the original native podocarps, is open to the public and has a network of walking tracks running through it. The Lodge and surrounding garden are now owned by Tim Vanderhaegen and his wife Sofie who wish to restore it.

About a dozen BSO members met at the entrance of the property and were conducted round the garden by Sofie as Tim was unable to be present as he was travelling overseas. The garden is a woodland garden as the original trees have now matured and many have grown into quite large specimens. There is one particularly fine specimen of northern rata, *Metrosideros robusta*, planted by the Thomsons. At the corner of the house is a massive cabbage tree which is believed to date from the time the original Ferntree cottage was built before Alexander Thomson purchased the property. The Thomsons' passion and interest in the New Zealand native flora is reflected in the plantings; many North Island species which do not grow locally, are present, for example titoki (*Alectryon excelsus* subsp. *excelsus*), forest cabbage tree (*Cordyline banksii*), karaka (*Corynocarpus laevigatus*), tainui (*Pomaderris apetala* subsp. *maritime*) and *Coprosma grandifolia*. A flourishing specimen of the North Island forest species, *Dracophyllum latifolium* was also present. However over time many tree seedlings have germinated and grown up so the garden contains an understorey of self-sown trees and shrubs which now obscure much of the original structure and plantings. One particularly large *Hoheria* is growing in what was once the croquet lawn. Many of the self-sown hoherias appear to be hybrids consistent with an origin as garden crosses. Interspersed with the natives are a variety of exotics which were originally planted as specimen trees in what was a well-laid out structured garden. Despite being overgrown most of the original stone paths and walls are still intact and are in surprisingly good condition.

A particularly interesting find was an unusual form of *Carmichaelia* growing as a tall shrub under other trees. It is interesting to speculate whether this conforms to the species *C. sylvatica* stated to have come from the Waipoua River in Waipoua Forest and named by George Simpson of Dunedin who described it from a cultivated plant. It does not appear to have been recorded in the wild since. George Simpson was a friend and close associate of John Scott Thomson, William Thomson's younger brother, and this particular *Carmichaelia* may well have come from Simpson. Another intriguing find was a cork oak (*Quercus suber*) identified for us by Bastow (he does have his uses) and Peter Johnson. As the Thomsons were cordial manufacturers and sold their product in bottles, at some stage they may well have investigated sourcing cork for stoppers from locally grown trees and planted the oak for this purpose.

Carmichaelia sylvatica *(Photo: David Lyttle)*

In the historical context this garden is noteworthy as it was perhaps one of the earliest gardens in Dunedin that featured extensive plantings of New Zealand native trees reflecting the Thomson family's interest in the botany of the Colony. Dunedin had been founded fifty years prior to Alexander Thomson purchasing the property. This purchase was partly motivated by his desire to protect the native bush remnant that is now the Ferntree Reserve. John Scott Thomson lived in Cromwell Street on the opposite side of Taieri Road and had a rock garden where he grew an extensive collection of New Zealand alpine plants which was renowned in its day.

Our thanks to Sofie and Tim for inviting us to look at the garden and for a most enjoyable morning. We applaud their intention to restore the garden – they have made considerable progress with this task and we wish them success for its completion.

Banks' Florilegium at the Hocken Library, 15th June 2013.

Kristin O'Sullivan Peren and Mary Anne Miller

It is always a pleasure visiting the Hocken Library and a recent excursion was no exception when 18 members and one interested Master of Arts student were treated to a display of botanical art of the highest order.

Sarah Snelling, Registrar of the Pictorial Collection, showed us the culmination of Joseph Banks' voyage around the world with Captain James Cook between 1768 and 1771. The Hocken has two sets of the New Zealand section of Banks' *Florilegium* published in 1983, containing 183 colour prints each and a set of black ink prints, Cook's *Florilegium*, published in 1973. These exquisite copperplate engravings are the result of years of work by craftsmen of the highest calibre. On the voyage Banks and Daniel Solander collected fresh specimens and Sydney Parkinson drew them, recording hues in watercolours or notes. When Banks returned to England he had five artists complete the watercolours and 18 engravers make 743 copperplate engravings, all at considerable cost. They were not published in his lifetime and it wasn't until the 1970s that a set in black ink was produced (Cook's *Florilegium*). Then between 1980 and 1990 110 complete full colour editions were produced as Banks' *Florilegium*. It is the world's largest 20th century fine art printing project.

That these works were two hundred years in the making is remarkable. Some facts surrounding it are of interest. Joseph Banks was promoted by the Royal Society to accompany Cook as it understatedly said this would be for "the advancement of useful knowledge". Banks became the financial backer for the Endeavour's adventure and in today terms was the Richard Branson of the 1700's, creating a magnificent space ship. This floating spacecraft was outfitted with the latest scientific equipment and specialised staff, designed to capture and record this historic journey. The artist Sydney Parkinson and Dr Daniel Solander, a naturalist and pupil of Dr Linnaeus, were well versed in the correct procedure to preserve and record the many new species that were discovered on the circumnavigation of New Zealand. Banks turned up to board the Endeavour with a retinue of seven, two greyhounds and a mass of supplies. The ship was small by any standards and although accommodated this time, and of considerable talent, he was rejected for Cook's second voyage. He was made a baronet in 1781 for his contributions to science.

What we viewed was edition number 99, which was late in the printing run. The lines we observed had indeed burred and this in turn allowed slight lightening of the ink, which highlighted this degradation. But for all that the exquisite drawings of Sydney Parkinson transferred beautifully into print. While admiring the works BSO members discussed updating names. Kristin thought this a worthwhile project so proposes the joint production of a reference book to the New Zealand section of Banks' *Florilegium*, with updated and accurate place and botanical names, in time for the bicentenary in 2020 of Banks' death.

To see some of the collection visit the following website:

http://collections.tepapa.govt.nz/theme.aspx?irn=5507

Guardians of the Forest, Speakers for the Trees; Evansdale Glen, 6th July 2013.

Kelly Frogley

For me, Otago Botanical Society field trips never turn out the way I expect. True to form, during a recent trip to Evansdale Glen, one thing led to another and before I knew it I was inadvertently posing as Dr Seuss' The Lorax! But let me start at the beginning. During July, a group of keen Otago BotSoc members took a trip to Evansdale Glen, part of the Silver Peaks Reserve about 20 km north of Dunedin. Evansdale Glen is a beautiful spot hidden in a valley right below State Highway 1. I got quite a surprise when our car suddenly turned off a major highway, drove down a little gravel road that lead to a popular community picnic area, and arrived at the start of Carey's Creek track. It was a stunning morning, albeit a little fresh. When we arrived I immediately noticed flood effects from the recent floods that drowned the region in June. Thankfully it hadn't washed away any bridges or caused too much damage to the vegetation.

Carey's Creek (Photo: David Lyttle)

Hygrocybe *sp. at Evansdale (Photo: David Lyttle)*

*Kelly Frogley and the Lorax (Photo: Aimee Pritchard)**

Without wasting any time in the car park, we set off exploring the area by following the track alongside Carey's Creek. Soon enough the track became too slippery and dangerous so we had to either cross the river or venture up the cliff side. I was not mentally or physically prepared to get into that freezing river and so opted to climb upwards. This resulted in a bit of bush bashing and off track explorations. I can still vividly see the moss *Thuidiopsis furfurosa* carpeting huge areas up the cliff side. This particular moss stood out to me because I had seen it in my work with DOC, but always in a dried form. I hadn't realised just how common it is round Dunedin.

Botanists being botanists, everyone became distracted by different feasts of plants which meant it wasn't long before the group was split in two. The half I was with decided to retreat back down the cliff and try another spot. The only way was to cross the river. So, like a champion, I removed my sneakers and socks and crossed that freezing river barefoot. The bush on the other side was worth it. I was impressed by the huge numbers of tree fuchsia (*Fuchsia excorticata*) and took the opportunity to learn about the different tree types with differing flowers and reproductive strategies. I had no idea that the common flower is larger and hermaphroditic, and that there is another much smaller flower type that is sterile and does not produce pollen like the larger type.

Just when I was thinking of heading back to the car, a pendent tuft of the lichen *Usnea rubicunda* caught my eye. It looked uncannily like facial hair decorating its tree host... As I said earlier, one thing led to another and despite not knowing who or what the Lorax was, I had channelled his energy as guardian of the forest and speaker for the trees! Otago Botanical Society field trips never turn out the way I expect.

Should anyone want a copy of the species list for this site, please contact John Steel at john.steel@botany.otago.ac.nz for an electronic copy.

** (Kelly's facial improvements were due to the lichen,* Usnea rubicunda*. Readers can be assured that this specimen had already been detached from its former host and no lichens were harmed in the taking of this photograph. - Ed.)*

Field trip to Mt Watkin, 3rd August 2013.

Cushla McMillan

Eleven Botanical Society members headed north on a cool misty morning to turn west just south of Waikouaiti to wind inland a few kilometers to the lower slopes of Mt Watkin. A short attempt to climb the rock glacier showed how hazardous this could be so we backtracked and climbed up a clearing just to the south. Higher up they found the combination of damp and lichens on the rock surfaces was treacherous for climbing on, but eventually made the top. A good view over the Waikouaiti-Karitane coastline through the mist.

View from Mt Watkin (Photo: David Lyttle)

At 616 metres, Mt Watkin is the most prominent feature, but forms only a small corner of the Dunedin City Council's 650-hectare Mt Watkin / Hikaroroa Reserve regarded as one of the best remaining examples of dry coastal forest in Otago. John Steel and Aimee Pritchard abandoned the rest of the group to explore a part of this forest as well as the lower slopes of the other side of the mountain. This proved to be rather rough terrain with rock glaciers spreading into the upper levels of the forest and limiting exploration in the time available. The rocks here are rich in bryophytes and lichens with pockets of forest vegetation extending up from the forest in the valley below. The forest comprises two steep sided valleys with the mountain separating them. These streams join towards the base of the reserve before feeding into the Waikouaiti River. A public road,

Mt Watkin summit (Photo: David Lyttle)

gated and padlocked, runs along a ridge on the west side of the reserve and this can be accessed with permission from the DCC. Very little exploration of the area appears to have been done and could be an option for future BotSoc trips.

Meanwhile Allison Knight and Lars Ludwig stayed on the lower slopes of the rock glacier and explored the extraordinarily rich lichen life, recording in a short morning more species of lichens than all the flowering plants that were spotted. And that, Allison writes, was just the tip of the iceberg. There were many more species that they didn't have time to investigate, especially the embedded crusts. The basalt rock glacier is covered in overlapping communities of lichens and the few *Coprosma* shrubs and a single *Pittosporum* tree they managed to look at each supported a diverse lichen flora. Highlights on the rocks included a large foliose *Lobarina scrobiculata* that Lars spotted and a beautifully fruiting *'Xanthoparmelia'* that turned out to be the Data Deficient *Punctelia novozelandica* - a new record for Otago.

Candelariella subdeflexa, a tiny yellow-fruited crust on a *Coprosma* twig, added another Data Deficient lichen to the record. A puzzling *Parmotrema cetratum* has been sent to Dan Blanchon for confirmation and taxonomic research.

In Allison's words, “Many thanks to Robyn for organising such a worthwhile trip.”

Mt Watkin Lichens

Allison Knight and Lars Ludwig

FOLIOSE - 'leafy' lobes

Coccocarpia palmicola
Flavoparmelia haysomii
Hyperphyscia adglutinata
Hypotrachyna revoluta
Lobarina scrobiculata
Melanelixia glabratuloides
Menegazzia subpertusa
Nephroma cellulosum var. *isidioferum*
Nephroma australe
Pannaria leproloma
Pannaria microphyllizans
Parmelia signifera
Parmelia sulcata
Parmotrema cetratum
Parmotrema perlatum
Peltigera rufescens
Physcia adscendens
Physcia caesia
Physcia jackii
Pseudocyphellaria billardierei
Pseudocyphellaria crocata
Pseudocyphellaria dissimilis
Pseudocyphellaria pickeringii
Punctelia borreri
Punctelia novozelandica (New to Otago, Data Deficient)
Punctelia subflava
Punctelia subrudecta
Sticta martinii
Xanthoparmelia scabrosa
Xanthoparmelia verisidiosa
Xanthoparmelia sp. (on rock)
Xanthoria parietina

SQUAMULOSE - scale-like lobes

Normandina pulchella
Parmeliella subgranulata
Psoroma melanizum

FRUTICOSE - twiggy or shrubby

Bunodophoron ramuliferum
Cladia aggregata
Cladonia chlorophaea
Cladonia corniculata
Cladonia fimbriata
Cladonia pyxidata
Cladonia tenerrima
Cladonia ustulata
Leifidium tenerum
Ramalina celastri
Ramalina glaucescens
Ramalina inflexa
Stereocaulon ramulosum
Teloschistes chrysophthalmus
Teloschistes velifer
Usnea cornuta
Usnea inermis

CRUSTOSE - flat crusts

Arthonia cf *dispersa*
Bacidia laurocerasi
Buellia disciformis
Caloplaca subpyracea
Caloplaca sp. 1 (on rock)
Caloplaca sp. 2 (on bark)
Candelariella subdeflexa (Data Deficient)
Candelariella sp. (on bark)
Chrysothrix candelaris
Haematomma babingtonii
Lecanora carpinea
Lecanora farinacea
Lecanora rupicola
Lecanora sp. 1 (on bark)
Lecanora sp. 2 (on bark)
Lecidella elaeochroma
Pertusaria otagoana
Placopsis brevilobata
Placopsis perrugosa
Placopsis sp. 1 (on rock)
Placopsis sp. 2 (on rock)
Pyrenula sp. (on bark)
Rhizocarpon geographicum
Rhizocarpon sp. (on rock)
Rinodina thiomela
Tephromela atra

Field trip to Trotters Gorge, 7th September 2013.

Aimee Pritchard

The Botanical Society trip to Trotters Gorge was successful on many fronts. After some variable weather during the week, Saturday turned on a windless, hot and sunny day for the fifteen members who lost no time in hunting down the area's rarities while adding new finds to the species list.

Trotters Gorge is 12 kilometres north of Palmerston, off Horse Range Road and comprises the valleys of Trotters Creek and its tributaries, which flows to the Pacific at Katiki. This 380 acre scenic reserve is named after the early settler and farmer, W. S. Trotter. There are many walking tracks, a picnic area and campsite, with the surrounding area being noted for its geological and botanical features. The near sheer, greywacke-breccia conglomerate bluffs present a daunting, almost threatening, impression when approached from the south, but the regenerating native bush and ample bird-life soon softens any fears.

There are two tracks leading from the western end of the campsite. The track that the majority took on the day was the loop track along a narrow, steep-sided valley, past small caves and up to a ridge presenting beautiful views of the coast and inland. Some years ago the fern, *Notogrammitis ciliata*, was noted here, but later disappeared from where it was found. A dead specimen was found at a different spot in 2012 so it was a delight to find further specimens in abundance along the track. Patches of a fertile liverwort, *Hymenophyton flabellatum* and the moss, *Plagiomnium novae-zeelandiae*, helped highlight the existence of these often spurned groups of plants. At the summit it was time for lunch and soak up some sun atop a large, lichen-encrusted rock allowing extensive views of the distant towns and farmlands while surrounded by another local rarity, *Pimelea pseudolyallii*, in full bloom. The local endemic, *Celmisia hookeri*, was abundant and healthy with plenty of juvenile plants. However, the small-leaved shrub, *Teucridium parvifolium*, does not seem to be faring well with fewer plants than noted on earlier trips and completely gone from one site.

Trotters Gorge (Photo: David Lyttle)

Pimelea pseudolyalii *(Photo: Aimee Pritchard)*

Fungi at Trotters Gorge (Photo: David Lyttle)

After a successful day, it was a bonus on the way home to sample some generous whitebait fritters and coffee, on the banks of the Shag River. It was great to have new faces and diversity of skills in the group.

Thanks to John Steel for leading the trip.

Should anyone want a copy of the species list for this site, please contact John Steel at john.steel@botany.otago.ac.nz for an electronic copy.

Coprosma propinqua *with male flowers on show (Photo: Zuni Steer)*

Ramalina pollinaria – Otago's most endangered lichen

Allison Knight

Ramalina pollinaria, a small, tufted, rock-living lichen, was first known to occur in New Zealand when in 1941 Zahlbruckner, an eminent Austrian lichenologist, identified a specimen that had been collected from Trotters Gorge in 1934 by John Scott Thomson. The species was included in the 1995 Flora of New Zealand Lichens, but by 1992 David Galloway considered that all New Zealand specimens known as *Ramalina pollinaria* could be referred to *R. unilateralis.* A 1996 revision of the genus *Ramalina* in New Zealand by Dan Blanchon, John Braggins and Alison Stewart also excluded the species from the New Zealand lichen flora.

In 2003 Jennnifer Bannister asked me to take Dan to Trotters Gorge for a final hunt to see if any true *Ramalina pollinaria* might still exist there. We scrambled through gorse and up sandstone outcrops all the very hot day to no avail. Disappointed, we took one last walk along the stream to cool off. Suddenly, to our amazement, there it was, right beside the track - one small straggly population of *Ramalina* on a shady, crumbling sandstone bank. Dan took a tiny sample back to Auckland for chemical tests. He determined that it was indeed *Ramalina pollinaria* and in 2004 reinstated it as a valid species in New Zealand.

In 2012, because of its precarious and very restricted habitat, *Ramalina pollinaria* was listed as Nationally Critical, the highest conservation threat rating. When the Botanical Society of Otago visited Trotters Gorge recently (7.9.2013) I took Lars Ludwig to check on its wellbeing. We were horrified to find that the face of the sandstone bank had crumbled away, and the whole population that was re-discovered in 2003 had vanished. Further searching revealed a very small regenerating population on a nearby, equally unstable bank. It is clinging to bare rock right beside the track and is extremely vulnerable to any further rock falls, track-widening or even people brushing past unaware. Another potential threat is vegetation growing up and shading it out completely.

Will *Ramalina pollinaria* still be there in another 10 years? Hopefully the Department of Conservation will take up our suggestion to add lichens to the upcoming Conservation Management Strategy for Otago and use their expertise to conserve one of the four rarest and most threatened lichens in New Zealand.

Ramalina pollinaria (Photo: Allison Knight)

Botanical Society of Otago

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Committee 2013–2014

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