



Newsletter Number 58 December 2009

BSO Meetings and Field Trips

9–15 January 2010. Central Otago trip. The BSO has been invited by the Auckland Botanical Society to join them for their annual field trip based at Bannockburn from the 9th to the 15th of January. Excursions are planned to various site of botanical interest in Central Otago. It will be possible to participate for all or part of the time depending on sufficient accommodation being available. Anyone who is interested please contact David Lyttle, ph (03) 4545470, email djlyttle@ihug.co.nz.

14 February 2010, 9.00 a.m. Valentine's Day Field Trip to Heywood Point. Heywood Point Scenic Reserve is a rare example of podocarp/broadleaved forest with many special features including fragrant tree daisy (*Olearia fragrantissima*) and climbing daisy (*Brachyglottis sciadophila*). With luck, lunch will be in the sun admiring the interesting shrub and herb communities on the coastal cliffs and headland. We'll do a return trip from Aramoana so be prepared for a steep, though scenic climb, up through farmland until the reserve is reached. Meet at the Botany Department carpark at 9 a.m. Any queries contact John Barkla, ph. (03) 476 3686.

24 February 2010, 5:20 p.m. Incorporating the Burn and Bite of Vegetation Disturbances into Climate Change Science. A talk by Brent E. Ewers, Associate Professor, Department of Botany, University of Wyoming. Meeting details on p. 2.

5 March 2010, 12 noon–2 p.m. Free BSO BBQ! BBQ to welcome new botany/ecology students and new BSO members. At the front lawn, Botany House Annex, Great King Street (across the road from the main Botany building). Sausage sandwiches and drinks provided free by the Botanical Society of Otago. All BSO members welcome!

27 March 2010, **The Fernery**. This is the home of Associate Professor Brian Cox and the house is one of the original properties in Pine Hill, over 100 years old. There are extensive ornamental and edible gardens, featuring all white *Hydrangea* that are sold to the cut flower market. In the beginning of last century it was a fern nursery, thus the name. There are extensive sections of regenerating native bush and several large rimu trees. Meet at the Botany Department car park at 8:50 a.m. Any queries contact Abe Grey, graab419@student.otago.ac.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 get in 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 out 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 (10 c/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.botany.otago.ac.nz/bs/>.

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Chairman's Notes

David Lyttle

We have now almost reached the end of 2010 and have completed our programme for this year. September's highlight was the 8th Baylis Lecture, delivered by Daphne Lee. The lecture was illustrated by a series of spectacular slides of plant fossils found at, Pikopiko, Waimumu and Foulden. Daphne gave an outline of her understanding of the history of New Zealand's vegetation gained through

her group and that of her collaborators. New Zealand originally shared many more genera with Australia than are now present. Other genera have had a long history in New Zealand and have persisted here despite the so-called Oligocene drowning and climatic fluctuations giving rise to the flora we know today

In October, the award of the Allan Mere to Audrey Eagle for her outstanding contribution to botany in New Zealand gave the committee a great deal of pleasure. The nomination document states; "The pinnacle of Audrey's work is her compilation of the magnificent 'Eagle's Complete Trees and Shrubs of New Zealand' published in 2006. As a work of botanical illustration it is comprehensive in its scope, accurate and beautiful in its execution. It is a unique work and is unlikely to be surpassed in the foreseeable future." There would be few who would dispute these sentiments. On behalf of the Society I extend our congratulations to Audrey for this well-deserved honour.

The award to Audrey was followed by a talk by David Orlovich on beech forest fungi. Audrey was a hard act to follow but David proved equal to the task showing pictures of the spectacular fungi that are found in New Zealand beech forests and describing his research into aspects of their taxonomy and ecology to an appreciative audience.

Editor's Notes

Hello BSO members. Merry Christmas and an awesome new year! I've refrained previously from writing too much in these Editor's notes, but this issue I want to take to opportunity to say sorry for the delay with the present issue, and to thank you your patience. I've found it difficult to find time to get the Newsletter done this semester, and I'm grateful for the help others have

In November Allison Knight gave a talk entitled "Lichens Illustrated" updating us on her progress in compiling a field guide to New Zealand lichens. Each of Allison's images is a work of art in itself and I am looking forward to the publication of the guide.

Highlights of the field trips from the latter part of the year were many and varied; the violet *Cortinarius porphyroideus* and beautiful little myxomycetes that we found in the Catlins beech forests on the BSO Spring Fungal Foray. The trip to Blueskin Farm produced the largest pokaka (*Elaeocarpus hookerianus*) I have ever seen. This trip was also notable for the stoicism displayed by various members of the party in the face of persistent rain. The trip to Swampy Summit was considered a success by the three out of the four participants who did not take a nap. So to those of you who are contemplating coming on a field trip, cease just contemplating it, get out of bed and turn up at the assigned time. There is always something rewarding to see and experience.

David Orlovich

given to achieve that. We've got a couple of really interesting articles in this issue and I thank the authors for their effort and the tremendous support of the BSO. If there are any members that would like to take over the job of editing the BSO Newsletter in 2010 then please get in touch with me. It is a rewarding job inasmuch that you get to see a great newsletter come out three

times a year. The main ongoing task is to receive articles for the *Newsletter*, and ensuring that those organising events advise you of the event details. Three times a year your expertise in using MS Word and possibly Photoshop come in very handy. If you are obsessive about commas, full stops and em-dashes vs en-dashes, know about the application of section breaks and styles, and are willing to put the time in to produce the *Newsletter*, then please let me or any of the committee know.

Correspondence and News

NZ Dawn Redwood Survey.

A survey of all New Zealand's significant Dawn Redwoods—*Metasequoia glyptostroboides*—is being conducted. Of particular interest is the first generation trees planted in the late 40's early 50's.

Planting notes, stories and individuals associated with the trees is of great interest (i.e., owner of property at time of estimated planting). I would also be interested to learn of any other *Metasequoia* in your area that might merit being recorded, as I am sure there may be other fine specimens of this era located in your region.

Trees of interest would include those: Planted pre 1955, or are over 25 m in height, or have a circumference of 350 cm or greater.

I would be most grateful to obtain recent measurements of the tree/s.

The following data are sought:

Please submit copy for next newsletter by 28 February 2010.

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: david.orlovich@otago.ac.nz) is preferred. Send photos as separate files and remember to include photo captions and credits.

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

Height: By reliable methodology (a climb & tape drop is most preferred esp. for champion status or by clinometer)

Circumference of Stem: (cm) IUFRO standard @ 1.3 m high

Average Canopy Spread (m) (average of north/south/east/west)

GPS: if possible

A photo: if possible

Any historical notes especially on source and date received:

Recorder details:

Plantations.

Details of any forestry plantations of this species would also be of interest.

I would especially like to know of any more trees down south. I do have a few records i.e.,

Temuka Domain

Timaru Bot Gardens

Centrewood at Waimate

Gore Main Gardens

Geraldine campground
 Dunedin Bot gardens
 Queenstown gardens

There is a tree in Dumbarton and one at Mt Galloway station I would like to get an update on if possible. And of course any other trees of note not mentioned. I

Audrey Eagle wins Allan Mere Award

We are proud to announce that Audrey Eagle is this year's recipient of the Allan Mere Award for her outstanding contribution to Botany. Our Botanical Society of Otago nomination of Audrey was supported by Wellington, Nelson and Wanganui botanical societies, and by Alan Mark and Shannel Courtney. Audrey was

appreciate any assistance you are able to offer.

Brad Cadwallader, Nelson.

Brad.cadwallader@paradise.net.nz, Ph: (03) 544 0346; Fax: (03) 544 2682; Mob: 027 2261 666

Allison Knight

symbolically presented with the precious greenstone mere by Anthony Wright, president of the New Zealand Botanical Society, at our Oct 14 meeting.

Well done, and well served, Audrey!



Anthony Wright, Audrey Eagle and David Lyttle after the Allen Mere presentation.

Botanical Society of Otago announces the 2010 5th Audrey Eagle Botanical Drawing Competition

Sharpen your pencils and prime your paintbrushes – BSO's Audrey Eagle Botanical Drawing competition will be held again next year, and every second year from then on. Apologies for the

unheralded gap last year - We hope any extra-keen artists from last year will re-submit. Botanical artistry is not a widespread skill, so there's a good chance of winning the first prize of

\$100, second prize of \$50 or third prize of \$25!

Judging criteria

1. Botanical accuracy
2. Detail, especially of important identification features
3. Clarity of lines
4. Proportional representation and scale
5. Layout
6. Suitability for reproduction in newsletter (grey scale) or website (colour)
7. Accurate caption, e.g., name(s) of plant, where it came from, date drawn.
8. Botanical notes or comments of interest e.g., key to botanical details, history, distribution, uses, variations etc.
9. Preference will be given to plants that have been rarely illustrated e.g., an uncommon wetland plant would be more valuable scientifically than a kauri.
10. Above all, artistic merit carries the highest rating.

Conditions of entry

1. Entries must be submitted with an entry form, by Tues 31 August 2010 to the Botanical Society of

Otago, PO Box 6214, Dunedin North 9059.

2. The drawing must be your original work. There is a limit of 3 entries, with a minimum size A4, maximum A3.
3. You should include a title and notes of botanical interest
4. Judges, including Audrey, will be kept unaware of your identity while judging
5. Entries will be displayed and prizes awarded by Audrey Eagle at the BSO Geoff Baylis Annual Lecture, October 2010.
6. BSO may use copies, with due acknowledgement, in the Newsletter and website.
7. Entries are open to all current BSO members – our subscription is very low! Membership forms are on BSO website: <http://www.botany.otago.ac.nz/bs>
8. No prizes will be given if there are no entries of sufficient quality.
9. If there are insufficient entries they may be re-entered in the next competition
10. There is no entry fee, so please include an addressed, pre-paid envelope or tube if you would like your drawings returned.

Entry form (also available at: <http://www.botany.otago.ac.nz/bso>)

Botanical Society of Otago	
5th Audrey Eagle Botanical Drawing Competition, 2010	
Name	
Address	
Email	Phone
Title of entry(s) [limit of 3]	
1.	
2.	
3.	
Botanical notes enclosed: yes/no	
Return: I would like my drawings back: yes/no	
I have included prepaid and addressed packaging: yes/no	
Membership/Declaration: This is all my own work and I am a current member of the Botanical Society of Otago.	
Signature	Date

Wellington Botanical Society Summer trip, 25 Jan - 3 Feb 2010

Wellington Botanical Society Summer trip, Coromandel Peninsula 25 Jan–3 Feb 2010, based at Kauaeranga Valley Education Camp. More details on website: <http://www.wellingtonbotsoc.wellington.net.nz/summer10.html>

24th NZ Annual Fungal Foray

This is a preliminary notice to advise that the 24th NZ Annual Fungal Foray will be held from 2–8th May 2010 based at Glentui Meadows near Oxford just northwest of Christchurch.

It is directly adjacent DOC walking tracks into beech forest. Many of the other areas on the following list are within reach of Glentui base camp: <http://www.doc.govt.nz/parks-and->

[recreation/tracks-and-walks/canterbury/waimakariri-area/](#)

There are also a few remnant bush sites in the plains, and Cragieburn. More details are to follow.

Please visit the FUNNZ website (<http://www.funnz.org.nz/>) or contact Jerry Cooper (CooperJ@landcareresearch.co.nz) for any details.

Articles

Otago Central Rail Trail – a sanctuary for native plants?

John Barkla & Craig Wilson, Department of Conservation Otago Conservancy

While on holiday during spring 2007, one of us (JB), cycled the Otago Central Rail Trail (OCRT) and was surprised to encounter populations of threatened 'spring annuals'. This opened our eyes to the possibility that the 150 km long corridor through Central Otago drylands might have other botanical treasures awaiting discovery, and was the catalyst for a more thorough survey during the spring of 2008. Apart from identifying and recording the location of threatened plants, the scope of the survey broadened to include creating a comprehensive plant list, locating notable plant communities, evaluating the success of past revegetation efforts, and identifying suitable areas for future revegetation.

Background

Since the decommissioning of the Otago Central branch railway line there

is anecdotal evidence that vegetation diversity and stature along the line has increased. Despite the high number of people using the OCRT, developed on the former railway line, and the investment DOC and others have made in developing and maintaining the trail, there has been little work on documenting the values of the native plants and communities present.

The survey

Over a period of four days we slowly drove the trail, stopping to search habitat on foot that we considered likely to hold threatened or interesting species. A GPS and cadastral maps were used to determine the width of the rail trail corridor, and guide search-efforts where parts of the corridor had been fenced into adjoining paddocks.

Table 1. Structural classes of native and exotic taxa recorded

Structural class	Indigenous	Exotic	Total
Gymnosperms	0	2	2
Dicot trees, shrubs and lianes	21	15	36
Dicot herbs	26	48	74
Grasses	9	11	20
Rushes and sedges	10	2	12
Other monocots	5	2	7
Ferns and fern allies	15	0	15
Total	86	80	166

What we found

Overall, 166 vascular plant taxa were recorded of which 86 are indigenous

and 80 are exotic. A breakdown of taxa by structural class is presented in Figure 1 below. The list will be incomplete due to the timing of the



Fig. 1. Craig examining *Carmichaelia curta*. Photo John Barkla

survey and a focus on indigenous species. The relatively low number of

native species present is probably a reflection of the disturbance history

(herbicide-spraying, fire, and grazing) of the trail, mostly during its time as an active railway line. The presence of extensive rocky areas within the corridor, buffered from fire and home to species adapted to such an environment, as well as the presence of small wetlands within the trail's

corridor, have however provided important refuges for native plants.

Threatened Plants

Twelve 'threatened' and 'at risk' plants were found (see Figure 2) including three ranked as Nationally Critical.

Table 2. Threatened taxa recorded, threat rankings, and number of sites on the OCRT

Taxon	Threat ranking (de Lange <i>et al.</i> 2009)	Number of sites on OCRT
<i>Aciphylla subflabellata</i>	Declining	2
<i>Carmichaelia compacta</i>	Declining	2
<i>Carmichaelia crassicaulis</i> subsp. <i>crassicaulis</i>	Declining	2
<i>Carmichaelia curta</i>	Nationally Critical	1
<i>Ceratocephala pungens</i>	Nationally Critical	4
<i>Coprosma intertexta</i>	Relict	1
<i>Crassula mataikona</i>	Naturally Uncommon	3
<i>Elymus tenuis</i>	Declining	1
<i>Muehlenbeckia ephedroides</i>	Declining	1
<i>Myosurus minimus</i> subsp. <i>novae-zelandiae</i>	Nationally Critical	11
<i>Olearia lineata</i>	Declining	4
<i>Pleurosorus rutifolius</i>	Naturally Uncommon	5

The discovery of the shrub *Carmichaelia curta* was most surprising. This species is known only from the Waitaki Basin, and a small number of sites in Otago. Given its Nationally Critical ranking and rarity in Otago, it is a high priority for conservation management.

The "spring annuals" (*Myosurus minimus* subsp. *novae-zelandiae* and *Ceratocephala pungens*) were found in numerous sites. This season was unusually good for spring annuals in the region, so the number and extent of populations recorded may be exceptional. At some sites *M. minimus* subsp. *novae-zelandiae* grows on the surface of the trail where we surmised

the loose-surfaced, bare ground mimics the open, disturbed areas the species otherwise inhabits. The regular weed spraying the trail surface receives may assist it by reducing competitors as spraying occurs after the plants have shed their seeds and died. *Ceratocephala pungens* was usually found in areas fenced into adjoining grazed paddocks, sites which it often shared with *M. minimus* subsp. *novae-zelandiae*.

Crassula mataikona is a small fast-growing herb, that also requires open, disturbed habitat and which probably completes its life-cycle before spraying of the rail-trail begins. Again, this is a species that may benefit from regular

spraying of weeds growing on the trail's surface.

The speargrass *Aciphylla subflabellata* occurred at two sites and both records

were of plants growing amongst rank grass, with matagouri and desert broom nearby. The larger population of the two appears to be expanding.



Fig. 2. *Myosurus minimus* subsp. *novae-zelandiae* in Rail Trail gravel. Photo John Barkla

The shrubs *Carmichaelia crassicaulis* subsp. *crassicaulis* (coral broom), *Coprosma intertexta* and *Olearia lineata* were found in one to four sites each. Coral broom and *C. intertexta* have sizable populations in nearby higher-altitude and less-modified areas; *O. lineata* has small populations scattered throughout Central Otago. They are all attractive species and would be suitable for restoration or amenity plantings along the trail.

The shrub *Carmichaelia compacta* is endemic to the area around the Kawarau, Cromwell and Roxburgh gorges, and the surrounding hill country on exposed rock or rocky soil.

A site in the Poolburn Gorge section of the rail trail may represent the species' northern distributional limit. It was also recorded on the trail just north of Alexandra, on the edge of hills in which it is reasonably common.

The prostrate bluegrass *Elymus tenuis* has previously been recorded from the trail, with a particularly dense patch noted amongst browntop in the vicinity of Hyde.

Pleurosorus rutifolius was found just north of Alexandra, growing amongst rocks. This distinctive fern occurs in the North and South Islands, and appears to be locally common around

Alexandra. Its rock-crevice niche appears to offer some protection from

grazing and habitat loss.

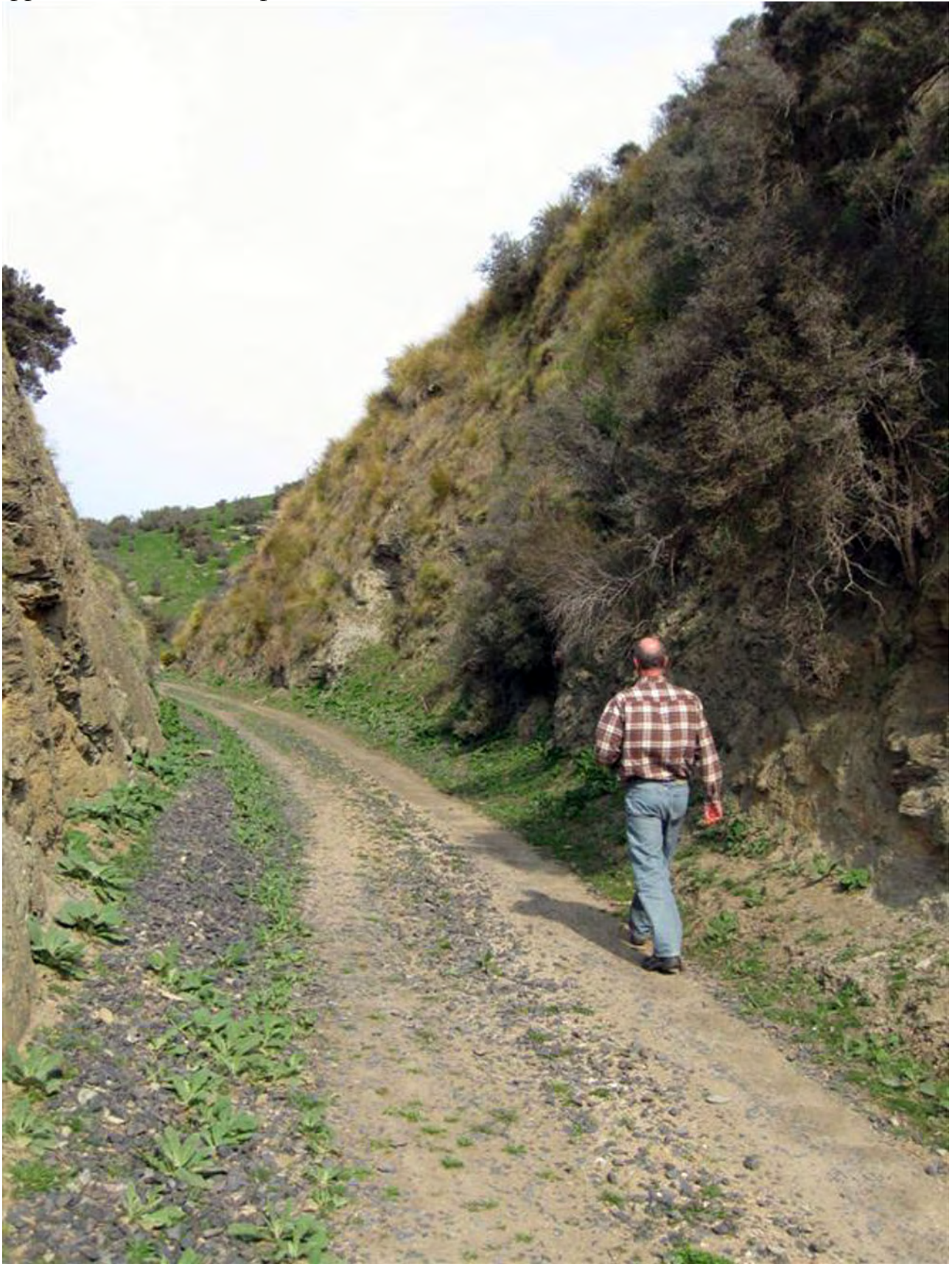


Fig. 3. Steep rail cuttings are important plant refuges. Photo John Barkla.

One plant of the sprawling shrub *Muehlenbeckia ephedroides* was found growing at the top of a railway cutting. Elsewhere in Otago, this species has a very localised distribution. It favours open, gravelly sites, and could probably be established at more places along the trail.

Notable Communities

Notable plant communities mostly comprised small stands of shrubland dominated by common species such as *Coprosma propinqua*, matagouri, and *Muehlenbeckia complexa*. These were generally around tors or other rocky areas, on shaded slopes, or in gullies where streams cross the trail. Rail cuttings, with shady habitat inaccessible to grazing stock, were especially notable for their plant communities, including small stands of snow tussock. These areas show the potential vegetative communities that could exist adjacent to the trail, and provide a contrast to the bare, poorly vegetated ground elsewhere.

Some wetland areas also contained notable plant communities. While many had willows and rank grass, some had remnant *Carex secta*, toetoe, and orchids. The protection of these wetlands from pastoral activities has left them in a generally better condition than those in adjacent farmland, offering a glimpse of a formerly more widespread community and potential for restoration.

Exotic plants that may become serious environmental weeds

Exotic broom (*Cytisus scoparius*) arguably presents the greatest threat to

existing indigenous plant diversity and abundance. It is especially prevalent on or near the rail trail between Daisy Bank and Middlemarch. Oriental clematis (*Clematis tangutica*) occurs only near Tucker Hill, northeast of Alexandra. This and related exotic clematis species are well known for their spreading characteristics and ecological impacts. Willows (*Salix* spp.) are common along many peripheral waterways and wetlands. Their continued spread poses a risk at those sites with intact indigenous wetland vegetation (e.g., *Carex secta*) and at wetland sites suitable for restoration of indigenous vegetation communities.

Evaluation of previous plantings

The location of plantings appears to have been determined by amenity considerations – for example at railway stations or near ganger's sheds. These sites tend to have dry, compacted stony soil on flat ground, and are not conducive to shrub establishment. Accordingly, a high failure rate was noted with survival highest at those sites receiving irrigation. A constructed mound at Galloway Station, planted in (mostly) appropriate native species, is a good example of thoughtful and appropriate restoration/beautification with wider application.

Revegetation Potential

We identified sixteen sites as having particularly suitable attributes for revegetation due to reliable soil moisture throughout the year and proximity to a population centre and/or

existing natural/landscape values. These sites are predominantly wetland or riparian habitats and have an existing vegetation cover dominated by rank grass/pasture weeds and willows. Many of the sites have a soil moisture gradient, making them suitable for a range of species from *Carex secta* to damp-tolerant shrubs such as *Olearia bullata*, through to species able to tolerate drier conditions such as *O. lineata*, *O. odorata*, *C. propinqua*, and native brooms etc. The establishment of small shrublands may lead to the natural re-colonisation of other suitable areas by native plants, and the creation of habitat for native invertebrates, lizards and birds. Such enclaves of native-dominated wetland and shrubland would have a beneficial advocacy role, showing trail users that many native woody species thrive in Central Otago's climate, and can form diverse communities worthy of restoring and protecting.

Lichens of Maungatua Scenic Reserve, eastern Otago, New Zealand

The trip report of the BSO field trip to Maungatua Scenic Reserve (Lyttle & Bridges 2007), plus a recent visit (in cloud and mist for the most part) on 10 January 2009 with the Dunedin Naturalists' Field Club, underlined for us just how lichen-rich the snow tussock shrubland and associated peat bogs and rock outcrops of Maungatua are. We therefore thought it might be helpful to give a short account of the history of lichen investigations in this locality, together with a list of presently known Maungatua shrubland, peat bog and rock outcrop lichens, both

Postscript

Following publicity of these findings additional rail trail threatened and uncommon plant records of *Aciphylla subflabellata*, coral broom, *Carmichaelia curta*, *C. compacta*, and a new record of *Atriplex buchananii* were received from local botanical enthusiasts. More recently the threatened plant sites have been permanently marked to enable contractors to recognise and avoid the sites, and visits have been made to adjoining landowners who graze 'spring annual' sites.

References cited

de Lange PJ, Norton DA, Courtney SP, Heenan PB, Barkla JW, Cameron EK, Hitchmough R, Townsend AJ 2009. Threatened and uncommon plants of New Zealand (2008 revision). *New Zealand Journal of Botany* **47**, 61–96.

David Galloway & Janet Ledingham

as a pendant to the fairly complete higher plant list that is known for the area, and also as a spur to further observation and collection of lichens from the area.

Lichens are prominent components of the vegetation in all of the main habitats on the summit plateau of Maungatua and especially in the bog, cushion and snowgrass communities, a point first recorded by the Dunedin botanists George Simpson and Jack Scott Thomson ("the firm" as Cockayne dubbed them, an appellation

by which they were widely known by the botanical community at home and abroad) when they stated "...Regarding the lichen vegetation and flora generally, a striking feature of the area is the presence of a *Cladonia sullivanii*-*C.pycnoclada* [= *C. mitis*]-*Thamnolia vermicularis* association on the summit bogs of Mt. Maungatua..." (Simpson & Thomson 1938: 438). The first paper recording lichens from Maungatua is that of Redinger (1936—describing *Stereocaulon caespitosum*). Later papers mentioning lichens from Maungatua include the following: Hillmann (1938—describing *Teloschistes fasciculatus*, see below); Motyka (1938—describing *Usnea contexta*—see below); Hillmann (1940—describing *Parmelia inflata*, see below); Zahlbruckner (1941—the first good lichen list, see below). All of these papers records lichens collected by Jack Scott Thomson. Subsequent publications where Maungatua lichens are mentioned include: Mark (1955—lichens determined by William Martin); Martin (1958, 1960b, 1970); Murray (1960a, 1960b, 1960c); Sato (1965a, 1965b); Esslinger (1977); Galloway (1980a, 1980b; 1997); Galloway & Elix (1980); Henssen *et al.* (1983); Walker (1985); Hertel (1984, 1985, 1987, 1989, 2001); Lough *et al.* (1987) and Lyttle & Bridges (2007).

Major lichen habitats

1. *On the ground*: Lichens are often prominent and visually striking components of the ground vegetation, both in bogs and in grassland. Prominent cushion bog lichens include *Cladia retipora*, *C. sullivanii*, *Cladonia*

aueri [named for the Finnish geologist and geographer, Väinö Auer, and found in bogs in Tierra del Fuego, the Falkland Islands, South Georgia and Macquarie Island (Galloway 2007: 353)], *C. confusa*, *C. mitis* and *Thamnolia vermicularis* [see illustrations in Peat & Patrick (1995: 126) and Mark *et al.* (2004: 217, fig. 36)]. In 1966, a small area of exposed peat near the summit tarns still carried the rarity, *Icmadophila splachnirima* (Galloway & Elix 1980), but a recent search in the area (25.i.2009) showed that it has now disappeared, as it has also done from most, if not all, of the Awarua Bog in Southland, where 50 years ago it was quite widely scattered and easily collected close to the Awarua Bay road (see Martin 1960a). Grasslands of the Maungatua summit plateau are the type locality for *Parmelia inflata* (= *Menegazzia inflata*) and *Usnea contexta*. See terricolous list below.

2. *On rocks*: The "Big Rock" on Maungatua carries a very rich assemblage of lichens, many of which are also found on the Central Otago ranges further west, and the small rock outcrops scattered over the summit plateau are also richly lichen covered. There are several other accessible rock tors and outcrops in the vicinity of the summit area that should be investigated, and undoubtedly more taxa will be discovered in these habitats. Maungatua is the type locality for the following saxicolous lichens: *Caloplaca erecta*, *Lecidea schistiseda* (= *Lecidella schistiseda*), *Pertusaria superba* (= *P. lophocarpa*), *Stereocaulon caespitosum* and



Caloplaca lutea Big Rock overhang

Teloschistes fasciculatus. See saxicolous list below.

3. On shrubs: Subalpine shrubs such as *Dracophyllum longifolium*, *Hebe* and *Ozothamnus*, as well as the prominently lichen-covered fenceposts, have a number of lichen epiphytes (see below), but corticolous lichens are generally still pretty poorly known from Maungatua. Further collection and study should yield a good number of additional taxa. See corticolous list below.

Brief history of lichenological investigations on Maungatua

The first lichenologists to visit the summit of Maungatua were the Swedish plant ecologist. G.Einar Du Rietz and his wife, Greta Sernander Du Rietz who collected lichens from the summit plateau on 6 February 1927. The day previously, they were collecting from the silver beech site in

Bethune's Gully on Mt Cargill with Jack Scott Thomson, and it is likely that it would have been Thomson, together with George Simpson and the Rev. J.E. Holloway who would have taken them on a day trip to Maungatua. Einar Du Rietz and Jack Scott Thomson became fast friends and corresponded warmly for some years, and it was Du Rietz, at that time an actively publishing lichenologist, who encouraged Thomson to study and collect lichens, especially from the upland areas of southern New Zealand (Galloway 2004). Thomson returned to Maungatua on the 7 April 1933 and from "subalpine bog and scrub" made collections "1-14", the first numbers of an impressive collection which comprised at least 3145 specimens (Bannister 2000) [numbered consecutively in order of collection, and stored with handwritten labels (detailing collecting number of collection locality) in tobacco tins],



Cladia sullivanii—cushion bog

made between 1933 and 1940. Return visits to Maungatua were made on 5 December 1933 (nos 1324-1377), 25 April 1935 (nos 2016-2031), 3 June 1935 (nos 2135-2163), and 1939 (no. 2898). Indeed, Scott Thomson's name is strongly linked with Maungatua, as it was from his Maungatua collections of a large *Aciphylla*, that Cockayne and Allan named *Aciphylla scott-thomsonii* Ckn. & Allan (Cockayne & Allan 1927: 48-49). Their paper was read to the Philosophical Institute of Canterbury on 2 December 1925, so Thomson's collection of *Aciphylla* from Maungatua must obviously pre-date this. A check of the Thomson sheets in CHR revealed that the type sheet of *A. scott-thomsonii* is without any collection date, so we must assume

that early visits by Thomson to Maungatua date from the early part of 1925 or before.

Thomson sent many duplicates of his lichens (at least 600 numbers) to Dr H.H. Allan, Director of Botany Division, DSIR, then in Palmerston North, and Allan renumbered many of them with a letter and number and sent portions of these re-numbered collections to several European lichenologists for identification. Many of these went to Prof. Alexander Zahlbruckner in Vienna, whose posthumous publication on New Zealand lichens (Zahlbruckner 1941), included the following Thomson collections from Maungatua:

Baeomyces heteromorphus
Caloplaca flavovirescens
Cladonia aueri
C. carneola
C. major
Coenogonium nigrum
Diploschistes scruposus
D. sticticus
D. cervinus Zahlbr. **TYPE** [= *D. scruposus*]
Lecanora atra [= *Tephromela atra*]
L. blanda f. *crustosa* [= *L. farinacea*]
L. rupicola
Lecidea confluens
L. sanguineoatra
Lecidea schistiseda Zahlbr. **TYPE** [= *Lecidella schistiseda*]
Parmelia prolixa
Parmelia mougeotii f. *mougeotina* [= *Xanthoparmelia mougeotina*]
Parmelia enteromorpha [= *Hypogymnia lugubris*]
Perforaria cucurbitula [= *Coccotrema cucurbitula*]
Pertusaria superba Zahlbr. **TYPE** [= *P. lophocarpa*]
Psoroma coralloideum [= *P. fruticulosum*]
Rhizocarpon grande
Stereocaulon caespitosum Redgr. **TYPE**
Sticta durvillei [= *Pseudocyphellaria degelii*]
Sticta flavicans [= *Pseudocyphellaria pickeringii*]
Teloschistes fasciculatus **TYPE**
Usnea ciliata

Allan also sent Thomson material to several European lichenologists, such as Bouly de Lesdain (Dunkerque), Einar Du Rietz (Uppsala), Edouard Frey (Berne), V.K. Gyelnik (Budapest), Johannes Hillmann (Berlin), Józef Motyka (Lvov) and Heinrich Sandstede (Berlin). In 1936, H.H. Allan (no doubt in company with Simpson and Thomson) made the type collection of *Menegazzia inflata* from summit grassland (as *Parmelia inflata*—Hillmann 1940) and also gathered *Icmadophila splachnirima* from peat (Galloway & Elix 1980).

James Murray, the Otago University organic chemist who was New

Zealand's leading post-war lichenologist collected on Maungatua in March 1954, and in May 1958 (Galloway 1980), and on the 9 October 1957, he accompanied the US lichenologist George A Llano, to Maungatua specifically to collect specimens of *Umbilicaria*, of which Llano was a leading student (Llano 1950). He visited Maungatua in 1961 shortly before his death, and collected *Psoroma fruticulosum* from the summit area (Henssen *et al.* 1983).

William Martin too botanised often on Maungatua, leaving us a good sketch of its bog plants (Martin 1924) and later becoming much interested in lichens from the area, especially of *Cladonia* and *Cladia* that are often conspicuous elements in the vegetation of the summit bog, alpine cushion and snow tussock communities (Martin 1958, 1965, 1970).

In December 1962, the British Lichenologist Peter W James (who was then visiting Dunedin for 6 months and working on the curation of the James Murray lichen collection in the University Botany Department, and supported by the Nuffield Foundation), was taken to Maungatua by Alan Mark and Geoff Baylis for a day's collecting, just before Peter joined the Royal Society of New Zealand Expedition to the Auckland Islands in January 1963. James collected *Sticta limbata* from shrubs on the summit plateau, a notable find for the area (Galloway 1997: 148–149). In November 1964, the Japanese



Cladonia aueri—cushion bog.

lichenologist, Masami Sato, an expert on the worldwide distribution of chemodemes in *Thamnolia vemicularis*, visited Maungatua with Alan Mark (Sato 1965a, 1965b) to collect specimens of *Thamnolia*. In March 1966, David Galloway visited Maungatua summit with Gavin Daley and made collections from the summit bog/tarns area (Galloway 1980), finding *Icmadophila splachnirima* in peat, confirming H.H. Allan's collection made from the same site 30 years earlier (Galloway & Elix 1980). John Child made collections from the summit in October 1974 (specimens in CHR). On 17 September 1981, the British lichenologist, Joy Walker visited Maungatua with Colin Meurk,

collecting species of *Usnea* subgen., *Neuropogon* (Walker 1985). On 31 January 1985, the European lichenologists Hannes Hertel (Munich) and Helmut Mayrhofer (Graz) visited Maungatua with Alan Mark, both making extensive collections from rocks of the summit plateau (Hertel 1984, 1985, 1987a, 1987b, 1989, 2001), and from which *Caloplaca erecta* was later described (Arup and Mayrhofer 2000).

David Galloway visited the summit plateau area again in 1995 with David Holdsworth, and more recently, members of both the Botanical Society of Otago (Lyttle & Bridges 2007) and the Dunedin Naturalists' Field Club

(10 January 2009) have visited Maungatua, with lichens being noted and collected on both occasions. On Sunday, 25 January 2009, I visited the Big Rock with Janet Ledingham and Francie Beggs and Lars Ludwig, a visiting student from the University of Halle, who is keenly interested in lichens and who is presently mapping the distribution of *Icmadophila splachnirima* in the Dunedin area. Lars and I visited the summit plateau area around the tarns and peat bogs, and although one population of *Menegazzia inflata* was noted [Maungatua is the type locality for this dramatic lichen. The type (Hillmann 1940 was from “below *Dacrydium bidwillii* scrub”, our recent collection was from grass and litter below *Dracophyllum*

longifolium and *Ozothamnus* in the grassland-scrub association north of the summit trig], it too is now apparently uncommon in this locality, while *Icmadophila* seems to have disappeared altogether. From these various collections, plus material seen in several herbaria (most notably BM, CHR, H, M, OTA, UPS, W), and from associated literature, the following initial lichen list has been prepared. Hopefully, it will encourage further observation and collection of lichens on Maungatua (a systematic description of the various lichen communities developed there would make a good MSc topic!), so that in the future a more comprehensive lichen list can be compiled.

Lichen List, summit plateau of Maungatua

1 Corticolous lichens

Buellia griseovirens
Caloplaca subpyracea
Haematomma alpinum
H. babingtonii
Hypogymnia kosciuskoensis
H. lugubris
H. lugubris var. *compactior*
H. lugubris var. *sublugubris*
H. subphysodes
Hypotrachyna sinuosa
Lecania cyrtella
Lecanora caesiorubella
L. flavidomarginata
L. flavopallida
Lecidella elaeochroma
Menegazzia caliginosa
M. testacea
Ochrolechia pallescens
Opegrapha ? agelaeoides
Parmelia cunninghamii
P. subtestacea
P. sulcata
Pertusaria novaezelandiae

P. psoromica
P. scutellifera
Ramalina glaucescens
R. unilateralis
Ramboldia laeta
Rinodina corticola
R. oleae
Sticta limbata
S. martinii
Teloschistes velifer
Usnea inermis
U. simplex

2 Saxicolous lichens

Aspicilia spp.
Bunodophoron ramulifer
Caloplaca erecta
C. lutea
C. rubelliana
Candelariella coralliza
 **Clypeococcum grossum*
Coccocarpia palmicola
Diploschistes scruposus
Flavoparmelia haysomii
Frutidella caesioatra

Labyrintha implexa
Lecanora bicincta
L. cavicola
L. farinacea
L. intricata
L. lugubris
L. polytropa
L. swartzii
Lecidea diducens
L. fuscoatrula
L. lapicida
L. lapicida var. *pantherina*
L. lygomma
L. lygomma var. *crassilabra*
L. semipallida
L. swartzioidea
Lecidella schistiseda
Lepraria neglecta
Massalongia carnosa
Menegazzia aeneofusca
M. castanea
M. globulifera
Pannaria spp.
Paraporphidia leptocarpa
Parmelia signifera



Rock tor on Maungatua

- | | | |
|---------------------------------|----------------------------------|-------------------------------------|
| <i>P. sulcata</i> | <i>R. grande</i> | <i>U. ciliata</i> |
| <i>Parmeliella ligulata</i> | * <i>Rimularia insularis</i> | <i>U. torulosa</i> |
| <i>Pertusaria leucodes</i> | <i>R. psephota</i> | <i>Xanthoparmelia imitatrix....</i> |
| <i>P. lophocarpa</i> | <i>Rinodina olivaceobrunnea</i> | <i>X. loxodella</i> |
| <i>P. otagoana</i> | <i>R. thiomela</i> | <i>X. mougeotina</i> |
| <i>P. subverrucosa</i> | <i>Stereocaulon caespitosum</i> | <i>X. neotinctina</i> |
| <i>Physcia adscendens</i> | <i>S. colensoi</i> | <i>X. petriseda</i> |
| <i>P. caesia</i> | <i>S. corticatulum.</i> | <i>X. pictada</i> |
| <i>P. dubia</i> | <i>S. ramulosum</i> | <i>X. pulla</i> |
| <i>P. tribacia</i> | <i>Sticta martinii</i> | <i>X. tasmanica</i> |
| <i>Placopsis fusciculoides</i> | <i>Teloschistes fasciculatus</i> | <i>Xanthoria candelaria</i> |
| <i>P. perrugosa</i> | <i>Tephromela atra</i> | <i>X. ligulata</i> |
| ? <i>Poeltiaria corralensis</i> | <i>Trapelia lilacea</i> | |
| <i>Porpidia macrocarpa</i> | <i>Umbilicaria cylindrica</i> | 3 Terricolous lichens |
| <i>Protoparmelia badia</i> | <i>U. deusta</i> | <i>Baeomyces heteromorphus</i> |
| <i>Psoroma fruticosum</i> | <i>U. grisea</i> | <i>Bunodophoron ramulifer</i> |
| <i>P. paleaceum</i> | <i>U. hyperborea</i> | <i>Cladia aggregata</i> |
| <i>Ramalina celastri</i> | <i>U. nylanderiana</i> | <i>C. retipora</i> |
| <i>R. fimbriata</i> | <i>U. polyphylla</i> | <i>C. sullivanii</i> |
| <i>Ramboldia petraeoides</i> | <i>U. subglabra</i> | <i>Cladonia aueri</i> |
| <i>Rhizocarpon distinctum</i> | <i>U. umbilicarioides</i> | <i>C. carneola</i> |
| <i>R. eupetraeum</i> | <i>U. vellea</i> | <i>C. confusa</i> |
| <i>R. geographicum</i> | <i>Usnea acromelana</i> | <i>C. corniculata</i> |
| | | <i>C. darwinii</i> |

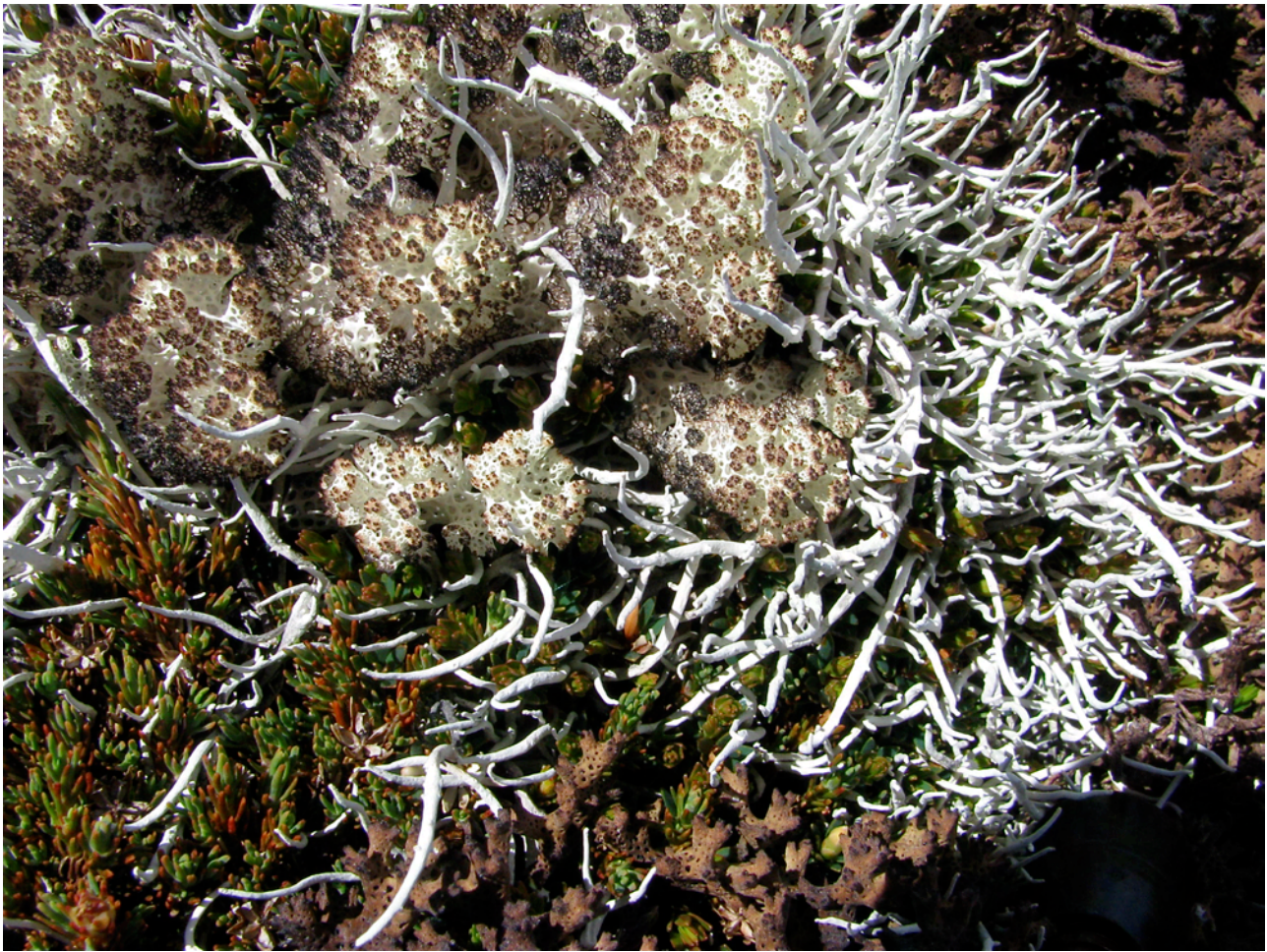
<i>C. glebosa</i>	<i>Lecanora epibryon</i> ssp.	<i>Placynthiella uliginosa</i>
<i>C. macilentata</i>	<i>broccha</i>	<i>Pseudocyphellaria crocata</i>
<i>C. mitis</i>	<i>Lecidoma demissum</i>	<i>P. degelii</i>
<i>C. neozelandica</i>	<i>Leifidium tenerum</i>	<i>P. glabra</i>
<i>C. pleurota</i>	<i>Lichenompahlia alpina</i>	<i>P. maculata</i>
<i>C. southlandica</i>	<i>L. umbellifera</i>	<i>P. pickeringii</i>
<i>C. subsubulata</i>	? <i>Megaspora verrucosa</i>	<i>Psoroma fruticosum</i>
<i>C. tenerrima</i>	<i>Menegazzia inflata</i>	<i>P. hypnorum</i>
<i>C. ustulata</i>	<i>Mycobilimbia australis</i>	<i>P. paleaceum</i>
<i>Dibaeis arcuata</i>	<i>Ochrolechia frigida</i>	<i>Siphula decumbens</i>
<i>Hypogymnia lugubris</i>	<i>O. xanthostoma</i>	<i>Siphulastrum mammilatum</i>
<i>Icmadophila splachnirima</i>	<i>Peltigera dilacerata</i>	<i>S. triste</i>
[apparently extinct on peat on Maungatua, but worth searching for – small thalli were seen in grassland near the “Big Rock”]	<i>P. malacea</i>	<i>Stereocaulon ramulosum</i>
	<i>P. neckeri</i>	<i>Thamnotia vermicularis</i>
	<i>P. neopolydactyla</i>	<i>Toninia bullata</i>
	? <i>Pertusaria dactylina</i>	<i>Trapeliopsis colensoi</i>
	<i>P. gymnospora</i>	<i>T. granulosa</i>
	<i>Placopsis clavifera</i>	<i>Usnea contexta</i>

Maungatua is the type locality for the following lichens:

- 1 *Caloplaca erecta* Arup & H. Mayrhofer, *Lichenologist* **32**: 359 (2000).
- 2 *Coniocybe otagoense* J.S. Murray, *Transactions of the Royal Society of New Zealand* **88** (2): 182 (1960). [A non-lichenised fungus (Tibell 1987: 273)].
- 3 *Diploschistes cervinus* Zahlbr., *Denkschr. Akad. Wiss. Wien math.-naturwiss. Kl.* **104**: 264 (1941). [= *D. scruposus* (Schreb.) Norman]
- 4 *Lecidea schistiseda* Zahlbr., *Denkschr. Akad. Wiss. Wien math.-naturwiss. Kl.* **104**: 300 (1941). [= *Lecidella schistiseda* (Zahlbr.) Hertel]
- 5 *Parmelia inflata* Hillmann, *Feddes Repert.* **48**: 7 (1940), [= *Menegazzia inflata* (Hillmann) P. James & D.J. Galloway]
- 6 *Pertusaria superba* Zahlbr., *Denkschr. Akad. Wiss. Wien math.-naturwiss. Kl.* **104**: 332 (1941). [= *P. lophocarpa* Körb.]
- 7 *Stereocaulon caespitosum* Redinger, *Hedwigia* **76**: 132 (1936).
- 8 *Teloschistes fasciculatus* Hillmann, *Feddes Repert.* **45**: 176 (1938).
- 9 *Usnea contexta* Motyka, *Lich. Gen. Usnea* **2**: 436 (1937). Further details of lichens for which Maungatua is the type locality, can be found in the volumes of the Lichen Flora (Galloway 1985, 2007).

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Cushion bog community with *Dracophyllum muscoides*, *Thamnolia vermicularis*, *Cladia retipora* and *C. sullivani*

species &c. (No. 5). *Transactions of the Royal Society of New Zealand* **67**, 48–72.

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Meeting and trip reports

Sullivans Dam, 20 June 2009

Allison Knight

8.30 am on a mid-winter's morning brought out a dozen or more intrepid members keen to try out John Steel's revised 2008 dichotomous Key to the Ferns of Dunedin. The track around

Sullivans Dam yielded plenty of *Blechnum*, *Polystichum* (shield ferns) and *Asplenium* to be studiously keyed out. A diversion up the Otago Tramping Club track up into the mist

forest revealed delicate *Hymenophyllum* (filmy ferns) to test any novice. It was cool in the shade, with a few patches of snow still lying in the deepest shade, but delightful in the sunshine, especially with the tuis and bellbirds in full song, which was most vigorous in the stand of exotic conifers beside the dam. The fern foray yielded a list of c. 40 species of ferns for the morning. A large patch of *Asplenium bulbiferum/gracillimum* revealed a couple of plants covered in bulbils, a sample of which will be sent to Leon Perrie at Te Papa for some expert advice! A couple of difficulties

in the key also revealed themselves and they will be rectified for any future trips. Copies of the key are available from John in return for any comments, suggestions or improvements.

For diversion, some of the keenest examined the lichens as well, producing a list of 46 for the NZBRN distribution record, including an odd *Baeomyces*-like creature identified as *Bapalmuia buchanani* by David Galloway.

Thank you John, for a very productive and instructive trip.

Department of Botany Colloquium 2009

The winners for the Botanical Society Prize for the best student talks at the Department of Botany Colloquium 2009 were Lisa Dobbie, Rebecca Lawrence and Derek Richards. The abstracts for these talks are listed below. Both Rebecca and Derek gave their presentations to the BSO at the meeting at 22nd July.

Morphological matching between alpine plants and their pollinators.

Lisa Dobbie and Janice Lord

Department of Botany, University of Otago, Dunedin, New Zealand.

Worldwide, alpine flowers tend to be showy, but in New Zealand they are very often small and white leading to the assumption that self-pollination or generalised pollination is normal. Previous studies have documented visitor assemblages, but have not determined if the visitors are physically able to fit inside the flowers to pollinate them. This study looked at

the morphology of 9 species of flower and their visitors, which were compared to see if the visitors were able to physically access nectar and contact anthers and stigma to be a legitimate pollinator. Contrary to expectations, some flowers excluded some invertebrates. The visitor-flower relationships fell into 8 groups: 1.) All accessible or at least partially accessible and flower visited, 2.) All accessible or at least partially accessible but not visited, 3.) Nectar not accessible and visited, 4.) Nectar not accessible, flower not visited, 5.) Anthers and nectar not accessible but flower visited, 6.) Anthers and nectar not accessible, flower not visited, 7.) No access to any part of the flower, flower not visited and 8.) No phenology overlap, not visited.

Foraging behaviour of invasive ship rats depends on microhabitat use and predation risk.

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The ship rat (*Rattus rattus*) is an introduced species to New Zealand and is controlled because of the negative impact it has on native bird and plant species. Within New Zealand native forests there is little knowledge of the microhabitats that ship rats use to forage and how predation risk from stoats (*Mustela erminea*) and other predators affects these choices. We used artificial food patches (seeds embedded in a non-food matrix in trays) to investigate ship rat foraging behaviour in New Zealand North Island podocarp-broadleaf forest. The giving-up-density (GUD), which is the number of seeds remaining after a night of foraging, depends on the time rats are prepared to spend searching for seeds and hence is a measure of perceived risk of predation. The seed trays were placed in uncovered and covered microhabitats on the forest floor within areas of high and low levels of stoat abundance. Uncovered microhabitats had no understory cover whereas covered microhabitats had vegetation cover directly above. Initial results showed that ship rats spend more time foraging under cover with high levels of stoat predation risk, whereas with a lower risk of predation from stoats, ship rats spend equal amounts of time foraging in covered and uncovered microhabitats. Further

replicates indicate that other factors such as initial rat and stoat densities and background food availability may influence foraging behaviour. The results from this study suggest ship rat control programmes could be made more effective by locating poison bait stations and kill-traps in covered microhabitats, depending on the level of predation risk from stoats. Further research investigating the influence of other factors on ship rat foraging behaviour is warranted.

Primary production rates in subtidal macroalgal beds: Does the presence of *Undaria pinnatifida* make a difference?

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Subtidal macroalgal communities are highly productive and increase habitat complexity and food sources for a variety of marine animals, particularly juvenile reef fish and grazing invertebrates. The objective of this study was to measure the productivity and succession of seaweed communities in habitats with and without the invasive Laminarian kelp, *Undaria pinnatifida*. Six shallow subtidal reef areas (three with and three without *U. pinnatifida*) on the Otago Coast, South Island, New Zealand were selected. Species density, richness, and diversity were quantified for macroalgae and invertebrate communities. Within each reef area a wave exposed and wave sheltered site

was chosen, and five depth strata (0 to 6 m depth from low tide) were sampled along a 30 meter transect line using ten randomly positioned 1 m² quadrats. Another two sites in this area, one that was free of *U. pinnatifida* (Karitane) and one that had an extensive population (Purakaunui Inlet), were selected for a community productivity experiment. At each site, six spore-settling frames were placed haphazardly at 2- 4 m below the low tide mark. Light sensors were attached to one cage per site to obtain an *in situ* record of light conditions. Net photosynthesis at a range of irradiances was measured for the communities that developed on the plates after six months in the field, using a 30 litre incubation chamber with re-circulating water in-line oxygen electrode at 12°C.

Sub-tidal surveys revealed that average macroalgal species richness at Karitane (14.5) was greater than that at Purakaunui Inlet (6). In addition average species richness of the three spore- settling plates was higher at Karitane (6 species per plate) compared to Purakaunui Inlet (4 per plate). Although not significant (F=1.47; P=0.231) net productivity and light use efficiency (alpha) values obtained from the Karitane communities were higher (three-fold and ten-fold increase respectively) than the values from the Purakaunui Inlet plates. We relate differences in the photosynthetic characteristics of early successional and mature macroalgal communities between habitats with and without *U. pinnatifida*.

Fungal & Lichen Foray, September 19/20 2009

Shirley Zwies

On a fine spring morning a select group of intrepid explorers gathered outside the Owaka supermarket on their way to the Catlins river walk to indulge in a little fungi and lichen spotting. The expedition was led by Dr David Orlovich (fungus fiend) and Dr Alison Knight (lichen lover). The rest of us were there for a variety of reasons from enjoying a day in the country or learning more about New Zealand's flora to satisfying a fetish for fungal photography.

Unfortunately for us there had been little rain during the preceding weeks and the ground was a little dry, conditions not conducive to the flourishing of fungal fruiting bodies. However some eagle-eyed members of the party did have some interesting

finds, collecting bags were out and cameras were in action.

As I was only able to attend for the day I did not join the group at the Nugget Point lighthouse keepers house but if the last Fungal Foray is anything to go by it would have been an extremely pleasant evening. They would have enjoyed a pot-luck dinner together of at least 3 courses of delicious food and spent the rest of the evening peering down microscopes and flipping through books to identify their finds and placing samples carefully in the dehydrator to be added to the collection.

Hopefully they then had a successful second day when it was planned to enter the river walk from the other end.



Catlins River. Photo by Shirley Zwies.

I didn't manage to shoot any spectacular fungal photographs but did take a couple of rather nice river views. A great day out! Thanks David and Alison.

Catlins river walk, fungi and lichen foray, 19th – 20th September 2009.

Amy Rayner

I had the most fantastic weekend (19th/20th Sept 09) with the Otago Botanical Society checking out the fungi and lichens along the Catlins river, and staying at Nugget Point. We saw some beautiful lichens lots of which were fruiting, and learnt about

some of their weird and wonderful adaptations. We found a few mushrooms too, despite the season, many of which were living as mycorrhizal fungi on the *Nothofagus* roots. I had a great time photographing the native bush, the ferns in the forest and the wind pruned shrubs on the coast, and the sun coming up over the ocean. The weekend was a real mix of knowledge shared, sunshine, and slime moulds. I have made new friends and feel lucky to have been a part of such a fun and inspiring group. Thank you everyone for such a lovely introduction to some of the fungi and lichens of NZ, and for an excellent dinner!

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Please submit copy for next newsletter to David Orlovich by 16 October 2009

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