BOTANICAL SOCIETY

OF OTAGO

# Newsletter Number 59 March 2010

## BSO Meetings and Field Trips

**17 March**, 5:20 p.m. **The Orokonui Ecosanctuary**. The well-known Dunedin conservationist and author Neville Peat will update us on progress at the Orokonui Ecosanctuary and the future plans for it. With the completion and opening of the impressive new visitors centre and introduction of various species to the Ecosanctuary progress has been rapid. Neville is an excellent speaker so don't miss this meeting. See meeting details on p. 2.

**27 March**, 8:50 a.m. **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.

**21 April**, 5:20 p.m. **Annual General Meeting and Photographic Competition**. Judging of the 4th BSO photographic competition and a brief AGM. There is still time to enter—the closing date is 7 April, 2010. Entries will be on display, photographic tips given and prizes presented. See meeting details on p. 2.

**24–25 April**, 9 a.m. **Weekend Field Trip to Silverpeaks**. This closest range to Dunedin has a variety of vegetation including beech forest, extensive regenerating shrublands and tussock grasslands/herbfields and an interesting suite of forest, sub-alpine and alpine lichens. We'll start at Mountain Road and walk into the new Jubilee Hut for the night, probably returning the same way. Participants need to be able to carry a weekend pack over steep terrain for at least five hours each day. Please contact John Barkla ph. 476 3686 or Allison Knight ph. 487 8265.

**12 May**, 7:30 p.m. **Workshop on Plant biodiversity and identification.** A workshop to introduce people interested native plants to the local flora. This is a joint meeting to be held in conjunction with the Otago Peninsula Biodiversity group and will be open to the public. Proposed time is 7:30–9:00 p.m. at the Macandrew Bay Hall. Further details to follow. Contact David Lyttle (djlyttle@ihug.co.nz), phone: (03) 454 5470.

**15 May Field trip to a locality on the Otago Peninsula** to follow the Biodiversity Workshop. Further details to follow. Contact David Lyttle (djlyttle@ihug.co.nz), phone: (03) 454 5470.

**12–13 June** 9:00 a.m. **Weekend Fungal Foray**. Advance notice of a weekend fungal foray. It will be fairly late in the season, but provided we can find a site that hasn't seen too much frost we might be lucky. More details to follow. Contact David Orlovich (david.orlovich@otago.ac.nz) if you would like to come.

**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/bso/.

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# Chairman's Notes

*David Lyttle*

Welcome to our first newsletter for 2010. In January several members of the BSO joined the Auckland Botanical Society for their camp at Bannockburn. Auckland were excellent hosts and hopefully we were able to contribute to the success of their field trips. Despite an indifferent start due to the weather I found it a valuable experience, meeting some very good botanists and coming to the realisation there is a lot I do not know about the Otago flora.

We are presently proposing to hold a joint field trip with the Wellington Botanical Society in the Te Anau area in January 2011. These field trips provide an opportunity for the out of town members of the BSO to participate in the activities of the Society. Details will follow when the plans are finalised.

In May we are planning to hold a workshop in conjunction with the Otago Peninsula Biodiversity Group on plant biodiversity and identification. This to be followed by a field trip to some the bush remnants on the Peninsula to illustrate the material covered in the workshop. The Otago Peninsula Biodiversity Group is presently engaged in a project aiming to remove possums

and other pests from the Otago Peninsula. Apart from the deleterious effects possums have on the native flora and fauna they plunder my garden eating brassicas, peas, broad beans and anything else that takes their fancy so I am an enthusiastic supporter of this project. Engaging with community groups and assisting them in this manner should hopefully raise the BSO's profile and increase public understanding of botanical science.

# Editor's Notes

*David Orlovich*

**Please submit copy for next newsletter by 31 May 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,

# Correspondence and News

### Botanical Society of Otago Photo Competition 2010.

There's still time to enter the BSO Photo Competition, but you'll have to hurry: entries close 7 April 2010. Entry forms can be picked up from the display shelves outside the secretary's office in the Botany Department or downloaded from the downloads section of the BSO web site (http:/www.botany.otago.ac.nz/bso/downloads.php).

### BSO 5th Audrey Eagle Botanical Drawing Competition.

If you're handier with a sketchpad than a camera, that's a rare skill, and you're in with a good chance to win a prize in our Botanical Drawing Competition. Remember, judges prefer pictures of something native that has rarely been illustrated—a lichen, perhaps, a small herb or a newly described species. Entries are due on Tues 31 August 2010. Entry forms and judging criteria are in the last newsletter #58, on our website http://www.botany.otago.ac.nz/bso/ and on the BSO section of the shelf outside the Botany Office. Good Luck!

### 24th NZ Annual Fungal Foray

The 24th NZ 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. A registration and information form is available from the FUNNZ website (http://www.funnz.org.nz/).

# Articles

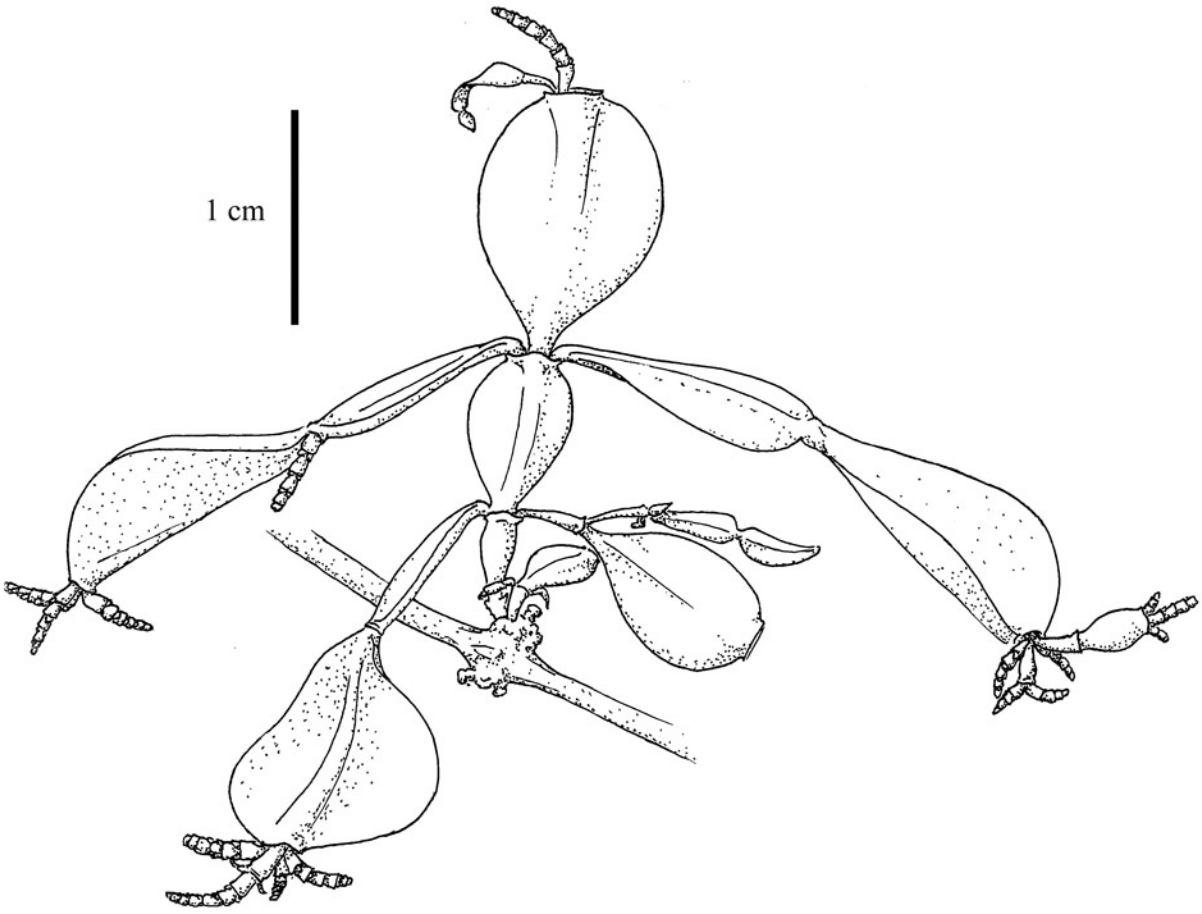
## Plant profile: *Korthalsella lindsayi* (D. Oliver) Engl.

*Alexandra DiNicola* and John Steel.*

Order: Santalales
Family: Santalaceae

A careful hunt through some of our native shrubs might just reward you with a sighting of this curious little mistletoe, but once you have your eye in you should see up to hundreds of individuals throughout the host plant. Their small size and cryptic appearance possibly account for its lack of reporting.

First recorded from East Taieri Bush in 1861, it has gone by the names of *Viscum lindsayi* and *Heterixia lindsayi*. Since settling into its present, preferred name, it has jumped around from Viscaceae to Loranthaceae and now Santalaceae.



The plant averages about 5 cm in length and comprises a number of flattened, sub-orbicular internodes each separated by a narrow collar at the node. This collar is made up of much reduced leaves and contains one or two inflorescences on tiny, tiered branchlets and each consisting of five three-petalled flowers. The male flower has one stamen overtopping the four female flowers, but at about 0.5 mm. these are hardly traffic-stoppers! Only one seed develops per flower and this has muscilaginous cells on the wall. Distribution appears to be rather lazy in that seed just falls off the parent plant to, if it's lucky, land on a nearby twig of the host plant. I have not been able to find any other record of how it is dispersed. Although one host plant may have a great many mistletoes, the neighbouring plant is more than likely not to have any.

I have found it on *Coprosma crassifolia, C. propinqua*, *C. virescens, Helichrysum glomeratum* and *Melicope simplex*; OTA also have specimens on *Myrsine australis* and *Sophora microphylla*. So keep your eyes open when you are next out and about and take note of any new hosts.

** Alexandra was here on the U.S. Study Abroad programme and hails from Ohio State University. Sadly she was here for only one semester studying in the Botany Department where she undertook to produce* "An illustrated key to the epiphytes and hemiparasites of the Dunedin Botanic Garden".

**It's a small world**

*Betina Fleming*

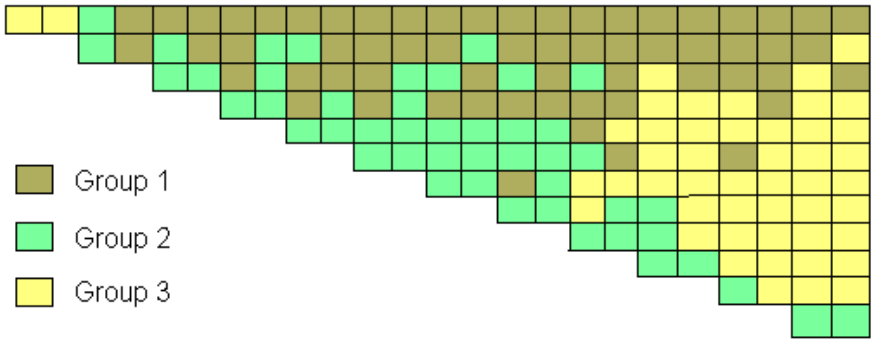
Small things have always fascinated me. During Summer School I took a paper on plant identification where I was introduced to the diversity and beauty of mosses and liverworts. There's something amazing in the fact that a whole other world exists that we pass by everyday without ever noticing. I spent a couple of months slowly trying to learn a tiny little bit more about that world where seedlings are giant redwoods and bryophytes are moist green forests.

The starry green shoots of mosses have often caught my attention in forests, clinging to trees and carpeting rocks. When given the opportunity of doing my own project I decided to learn a little more about them, but not in the obvious places. Instead I chose an ordinary garden wall of my North Dunedin flat to observe them. At first glance it appeared that only a few species could tolerate the conditions created by the wall: a brown one, a silver one and a green one. In my mind I thought I could see a pattern in the distribution of these mosses, with the brown and silver ones situated towards the top of the wall and the green one at the base. Well, as I was told repeatedly, I needed cold hard facts and solid evidence to actually prove this.

Producing a little bit of evidence for my hypothesis was tedious. First, I had to identify the species so I could recognise them. This took the total number of mosses from three to eight. I then spent a weekend lying in awkward positions on the steps (causing someone to stop and ask if I was ok) gathering almost 250 contiguous quadrats of data. In the process I also found yet more species taking the total to thirteen mosses and two liverworts:

*Schistidium apocarpum*
*Grimmia pulvinata*
*Tortula muralis*
*Tortula phaea*
*Tortula papillosa*
*Tortula princeps*
*Zygodon menziesii*
*Bryum argenteum*
*Bryum dichotomum*
*Ceratodon purpureus*
*Stokesiella praelonga*
*Fabronia* sp.
*Trichostomiopsis australasiae*
*Chiloscyphus novae-zelandiae*
*Radula buccinifera*
*Metzgeria furcata*.

With the data I collected, a dissimilarity cluster analysis could be done. This didn't mean all that much to me because all I could see was black and white text so I made a diagram to visualise it:




When this pattern emerged I was so excited. It worked! I had proof! Each group had certain combinations of species and quite distinct locations. This was the pattern I could see from the very beginning! So now the question is why these groupings and locations? Does the wall create microclimates? What enables some species to grow in some places and not in others? So many questions to find the answers for.

Identifying the species of mosses proved both difficult and highly enjoyable. After identifying so many mosses, I now feel slightly more confident in my ability and I never

want to go back. The wonder and intricate beauty of these tiny plants under a microscope has me hooked for life.

I thank the Botany Department for giving me the chance to study these amazing plants and for the opportunity to present my study at the 21st John Child Bryophyte Workshop in Waipukurau in 2009.

*Betina was awarded the annual Tom Moss Student Award for Bryological Research at the John Child Bryophyte Workshop, 2009, for her study.*

**Some impressions from an American student downunder**

*Alexandra DiNicola*

Norfolk Island pines do not grow in Ohio. My home state is far too cold for them to survive to maturity, so I had never seen the distinctive flared-paintbrush silhouettes of their mature branches before I came to New Zealand. Walking out of the Auckland airport into a cool, damp winter dawn, I spotted several of them—intricate black cut-outs against the subtle sunrise—and, right then, fell into my New Zealand botany experience. For the week or so of orientation, I went slightly bananas: as a botany student and something of a plant geek, I was used to recognising most of my local flora. Here, I knew none of them—and they were all so *different!* It wasn't until Dunedin that I found a good field guide and started to sate my curiosity.

I am taking a class on the New Zealand flora, of course, but all the lectures could really do was give me the tools to understand the plants and the ecosystems. Going out and experiencing them for myself was still best. Being told that the native tussock grasses have tightly-packed stems with deep, strong root systems was interesting, yes. When I nearly fell while scrambling up a very steep track near Glenorchy, though, and a handful of grass took my weight as well as a tree would—that's when I *understood* just how tough the tussocks are.

That same hike saw me stopping several times to whip out a hand lens and ogle the lichens and tiny cushion plants of the subalpine grasslands. They were like nothing I'd seen at home, and yet the resemblances were undeniable. Later, I discovered that a species of tree daisy belongs to the same genus as one of my hometown's common, weedy little asters. New Zealand gave me a new look at the essential similarity and continuity of life across a staggering variety of forms.

I joined the Botanical Society of Otago before too long. The first field trip I took with them was advertised as a "mystery fossil hunt": all I knew was that we were headed out towards Middlemarch somewhere, to dig up fossils. Imagine my delight, then, when it turned out that we were bound for a Miocene site that one of my classes had mentioned by name for its quality! All day we turned up ten-million-year-old

leaves so exquisitely preserved that they could easily have fallen just the year before. Plant families newly familiar from my field-guide reading appeared in glorious detail, windows to the ancient climate. I brought home a few good finds: there are several blocks of diatomite—pieces of New Zealand's ancient past—waiting for me to preserve their fossils.

My spring-break plans, travelling up the West Coast with a few friends, offered further opportunities. Our route took us through the southern-beech rainforests, draped in luxuriant epiphytes and as deeply green as they are primeval; up to coastal Punakaiki, where a track leading from our hostel to the coast led me through a cross-section of the flax scrub and rātā rainforest ecosystems, showing me firsthand how they merged; and to Abel Tasman National Park, with its solemn silver-fern understory. There I was lucky enough to find a colony of *Tmesipteris*, a very odd little fern whose stems do the job of both roots and leaves, growing from a silver fern trunk. The people hiking with me wore indulgent grins as I burst with excitement and snapped a batch of photos.

Everyday life invited quite a bit of botanising, too. What trees do Kiwi city planners use to line the streets? (Some exotic species, with cabbage trees, rewarewa, kowhai, and southern beech.) Is that snow tussock in the front yard of my flat? (No, but it is a native grass.) Ooh, what's *that* growing by the road? (Five-finger, currant, tree daisy, passionflower, lemonwood, pepper tree...) Gradually I've attained some familiarity: I can easily recognise many of the native species. When a friend noticed the metal plates interspersed in Queenstown's sidewalks, I was able at first glance to tell her that the leaf and flowers depicted on them were from a kowhai.

One weekend, I took a short day hike on the Queenstown Hill track. Most of the way up led through wilding pines; the solemn, cathedral-like forest was composed of *nothing* but exotic Douglas firs. (My first thought was not, "Wow, this is beautiful", but, "Where's the understorey?" and then "How allelopathic *are* these things?") Near the hilltop, the pines fell away to remnant native tussocklands where I spotted ten or fifteen species in the first ten metres: tawny gold snow tussocks, lacelike bracken fronds, minute jewels of cushion plants, striking red alpine dracophyllum. Even *if* you ignore the astonishing views, it is a far lovelier land atop that hill than on its flanks… I had never thought I'd be considering the merits of clear-cutting, but that's what may be needed to return Queenstown Hill to its original aspect. Signs on the way up mentioned volunteers with chainsaws. That hike gave me an object lesson in what conservation can mean, and how a species valued at home is a dangerous weed here. On the way down, it was with some satisfaction that I hunted and pulled up several pine seedlings.

As part of an independent class project that had me working with the Dunedin Botanic Garden, I'd been doing some botanical illustration. (Drawing a plant is worthwhile both to produce an

illustration and to make you study the plant very carefully—it's an excellent way to become familiar with species characteristics for identification.) Some of the Gardens' apprentices heard what I was doing and, even knowing that I'm self-taught, asked if they could watch me at work sometime.

With help from my lab instructor, John Steel (though not actually working for class credit), I picked a date, booked a classroom, gathered the necessary materials, and planned a brief talk and a hands-on lesson. The apprentices had asked for a chance to look over my shoulder: I gave them a three-hour workshop. They left with samples and drawings in hand, eager to finish their first illustrations and keep working. I left with an excellent teaching experience and a sense of accomplishment.

I'll have to leave New Zealand's plants behind soon enough, but I don't plan to let that stop me. When I go home I'll be seeing parallels everywhere—comparing Ohio's beech-maple forests to the podocarp-broadleaf bush, and doubtless seeing the maples in a very new light. The shores of Lake Erie will have more interesting things to say when I listen as the West Coast has taught me. Should anyone at home be interested, I'll be happy to teach them what I know of illustration. If I can pick the right species and bring them safely home, I may even plant some very unusual seeds next spring. The illustrations I've made, the photos I've taken, and the ecosystems I've visited will enliven my studies and my gardening for a long time yet.

## Key to species of *Cotoneaster* in New Zealand

*John Steel, Botany Department.*

Cotoneasters were a popular choice of garden shrub round the middle of last century and a number of species and cultivars were imported for sale and propagation. Their prolific flowering habit, followed by a colourful display of red or orange fruits, appealed to the home gardener and for amenity planting. The fruits are also popular with birds and the seeds were promptly spread causing a number of species to become naturalised and some of these have now reached pest proportions.

There are about four hundred species of this member of the Rosaceae and the following is a key to all the species and cultivars I could find that are known to have been sold in New Zealand; those underlined indicate the species that are listed as naturalised here. They can be tricky to identify (for me at least) and I wouldn't be surprised to find other species, not listed, extending their ranges beyond the garden wall.

If anyone would like to try out the key, I would appreciate any feedback. Similarly, I would like to track down a cultivar, 'Red Fan', if anyone knows of a specimen tucked away in someone's garden.

1a. Flowering (fruiting) of inflorescence simultaneous;
petals spreading at anthesis, sub-orbicular or broadly spathulate, white, rarely pink;
anthers mostly violet or black;
nutlets with conjoined style becoming free (leaving remains when dehisced) ± at apex ..... **2**

2a. Shrubs or small trees ≤ 18 m;
branches erect, spreading or arched;
leaves ≤ 177 mm, chartaceous or subcoriaceous, veins 3–14, petiole ≤ 18 mm;
fertile shoots ≤ 100 mm;
inflorescence ≤ 200-flowered;
petals mostly with hair-tuft at base ..... **3**

3a Leaves deciduous, lower surface and petiole mostly initially pilose or villous;
hypanthium mostly cupulate;
fruit 6–15 mm;
nutlets 1–3;
very early to mid-season ..... **4**

4a Branches somewhat narrowly erect, only slightly spreading;
stems dark brown with white lenticels;
leaves wrinkled above; 70–100 × 25–40 mm; semi-evergreen ..... ***C. frigidus* 'Cornubia'**

4b Branches rise diagonally then arch in somewhat open formation;
stems uniformly brown;
leaves plain above; 105–177 × 37–56 mm; deciduous ..... ***C. frigidus***

3b Leaves evergreen, lower surface and petiole mostly initially tomentose;
hypanthium infundibulate;
fruit 3–9 mm;
nutlets (1)–2–4–(5);
mid- to very late season ..... **5**

5a Branchlets mostly villous-strigose;
leaves coriaceous, mostly lanceolate, veins impressed, often deeply so;
pedicels densely villous-strigose
nutlets 2–4–(5) ..... **6**

6a Branchlets thin;
leaves lanceolate, upper surface shiny;

corolla 5–6 mm ..... **7**

7a Height to 40 cm;
leaves purple-tinged in winter
..... ***C. salicifolius* 'Herbstfeuer'** ('Autumn Fire')

7b Height to 1 m;
leaves red-purple in autumn and winter
..... ***C. salicifolius* 'Scarlet Leader'**

6b Branchlets mostly coarse;
leaves lanceolate to elliptic, upper surface dullish;
corolla 6–8 mm ..... ***C. henryanus***

5b Branchlets tomentose-strigose;
leaves sub-coriaceous, mostly elliptic, veins not impressed, or lightly impressed;
pedicels tomentose;
nutlets (1)–2 ..... **8**

8a Lower leaf soon glabrous;
hypanthium glabrous except extreme base
..... ***C. glaucophyllus***

8b Lower leaf surface and hypanthium with hairs, often dense ..... **9**

9a Leaf veins 4–6–(7);
inflorescence 5 to 25 flowered ..... ***C. pannosus***

9b Leaf veins 5–10;
inflorescence 10 to 40–(150) flowered ..... **10**

10a Leaves ellipto-lanceolate;
pedicels and sepals with silky hairs;
anthers black or purple-black ..... ***C. harrovianus***

10b Leaves elliptic, sometimes broadly so;
pedicels and sepals hairs not silky;
anthers red-purple or purple ..... ***C. lacteus***

2b Dense shrubs mostly 0.2–3 m;
branches prostrate, ascending or sub-erect, often mound-forming;
leaves ≤ 45mm, mostly coriaceous, veins 2–6–(8);
petiole ≤ 9 mm;
fertile shoots ≤ 50 mm;
inflorescence ≤ 25-flowered;
petals rarely with hair-tuft at base ..... **11**

11a Height 0.2–0.5 m;
branches procumbent or prostrate, pliant;
leaves distichous, very rarely spiralled, veins impressed, petiole 2–9 mm;
inflorescence 1–3–(4)-flowered, pedicels 3–15 mm; nutlets 2–5 ..... **12**

12a Leaves distichous, often single hairs on midrib ..... ***C. dammeri***

12b Leaves spiral, glabrescent, initially sparsely pilose-strigose ..... **13**

13a Leaves coriaceous;
obovate to broadly ovate or sub-orbicular;
leaf margin slightly recurved ..... ***C. cochleatus***

13b Leaves sub-coriaceous;
broadly obovate-elliptic, elliptic or oblong, rarely sub-orbicular;
leaf margin plain ..... **14**

14a Leaves 6–13 × 4–8 mm;
apex obtuse, acute or rotund, rarely emarginate ..... ***C. prostratus***

14b Leaves 10–30 mm;
leaf base cuneate or rotund ..... **15**

15a Leaves 18–20 mm, bases cuneate ..... ***C. × suecicus* 'Royal Beauty'**

15b Leaves 10–30 mm, bases rotund ..... ***C. × suecicus* 'Skogholm'**

11b Height 0.5–5 m;
branches ascending, prostrate or erect, stiff;
leaves spiraled, rarely distichous, veins not impressed or lightly impressed, petiole 1–6 mm;
inflorescence ≤ 11-flowered, pedicels ≤ 7 mm;
nutlets (1)–2–(3) ..... **16**

16a Leaves mostly semi-evergreen, distichous or spiraled, sub-coriaceous, ≤ 45 × 28 mm,
upper surface and petiole sparsely pilose-strigose;
petals (3)–4–7mm ..... ***C. conspicuus***

16b Leaves evergreen, spiralled, coriaceous, ≤ 24 × 11mm,
upper surface with single hairs,
petiole strigose;
petals 2–5 mm ..... **17**

17a Leaves mostly chartaceous, obovate, pale to mid-green, dull;
pedicels and hypanthium sparsely pilose ... ***C. congestus***

17b Leaves mostly coriaceous, dark green, shiny;
pedicels and hypanthium mostly strigose ... **18**

18a Leaves linear or narrowly obovate, 5–12 × 2–3mm;
fertile shoot leaves 3–6;
fruit 3–6 mm ... ***C. thymifolius***

18b Leaves mostly elliptic or oblanceolate, ≤ 45 × 28 mm;
fertile shoot leaves 2–4;
fruit 6–10–(12) mm ... ***C. microphyllus***

1b Flowering (fruiting) of inflorescence extended;
petals erect at anthesis, obovate or spathulate, pink, red, and off-white often with green, rarely white;
filaments red or pink;
anthers white, sometimes pink- or mauve-tinged;
nutlets with conjoined style becoming free (leaving remains when dehisced) mostly ⅔ to ¾ from base ... **19**

19a Branchlets initially strigose or tomentose, rarely minutely verruculose;
leaves elliptic or ovate, 6–85 mm, petiole 1–10 mm ... **20**

20a Leaves 16–210 mm, veins 3–12;
fertile shoots 15–170 mm;
inflorescence < 150-flowered ... ***C. bullatus***

20b Leaves 6–85 mm, veins 2–9;
fertile shoots 5–100 mm;
inflorescence < 60-flowered ... ***C. franchetti***

19b Branchlets initially strigose, often verruculose;
leaves mostly sub-orbicular, 4–38 mm, petiole 0.5–4 mm ... **21**

21a Height ≤ 5 m;
leaves dark green, lower surface strigose;
flowers and fruit pendent;
stamens 14–20–(26);
nutlets 2–4–(5) ... ***C. simonsii***

21b Height ≤ 2.5 mm;
leaves mostly mid-green, lower surface glabrous or sub-glabrous;

flowers erect;
stamens(7)–10–(16);
nutlets 1–3–(4) ..... **22**

22a Branches sub-erect or prostrate;
branchlets mostly divaricate;
leaf apex mostly acute or apiculate, margin often undulate;
hypanthium cupulate;
sepals mostly ligulate or obtuse;
fruit globose or sub-globose ..... ***C. adpressus***

22b Branches decumbent or ascending, rarely erect;
branchlets mostly strongly distichous;
leaf apex mostly obtuse or acute, margin flat, rarely slightly undulate;
hypanthium infundibulate or narrowly cupulate;
sepals mostly acute or acuminate;
fruit cylindrical or obovoid ..... **23**

23a Upper leaf surface initially sparsely strigose;
fruit cylindrical, rarely sub-globose, 8–11 mm, rich-red ..... ***C. divaricatus***

23b Upper leaf surface glabrous or with single hairs from bud;
fruit obovoid, rarely globose, 4–9 mm, orange-red ..... **24**

24a Leaves 13–25 mm, veins 3–5, petiole 3–5 mm;
hypanthium cupulate ..... ***C. helmqvistii* 'Robusta'**

24b Leaves 5–15 mm, veins 2–4 mm, petiole 1–3 mm;
hypanthium infundibulate ..... **25**

25a Leaves chartaceous, apex obtuse or truncate, margin slightly undulate;
fruit 8 mm ..... **26**

26a Leaves mid- to dark green all over ..... ***C. atropurpureus***

26b Leaves edged white, pink-tinged in autumn ..... ***C. atropurpureus* 'Variegatus'**

25b Leaves sub-coriaceous, apex mostly apiculate or obtuse, margin flat;
fruit 4–6 mm ..... ***C. horizontalis***

*Bibliography:*

Fryer J, Hylmö B 2009. *Cotoneasters: a comprehensive guide to shrubs for flowers, fruit, and foliage*. Timber Press, London, 344 pp.

Ogle CC 2003. *Cotoneaster pannosus* as an adventive plant in New Zealand. *New Zealand Botanical Society Newsletter* **73**, 9–11

Palmer SJ 1974 [1997 reprint]. *Palmer's manual of trees, shrubs & climbers*. Pp. 102–103. Lancewood Publishing, Runaway Bay.

Parsons MJ, Douglass P, Macmillan BH 1995. *Current names for wild gymnosperms, dicotyledons and monocotyledons (except grasses) in New Zealand as used in Herbarium CHR*, p. 45. Manaaki Whenua—Landcare Research, Lincoln.

Webb CJ, Sykes WR, Garnock-Jones PJ 1988. *Flora of New Zealand, volume IV, naturalised pteridophytes, gymnosperms, dicotyledons*, pp. 1069–1074. Botany Division, Department of Scientific and Industrial Research, Christchurch.

*Glossary:*

| | |
|---|---|
| *acuminate* | narrowing gradually to a point |
| *acute* | sharply pointed |
| *anthesis* | time of flowering |
| *apiculate* | having a short, sharp point |
| *chartaceous* | papery |
| *coriaceous* | firm, like leather |
| *cupulate* | shaped like a cup |
| *decumbent* | lying along the ground, but with its tip pointing upwards |
| *distichous* | arranged in two rows 180° apart |
| *divaricate* | interlacing branches spreading at wide angles |
| *glabrescent* | becoming hairless |
| *glabrous* | without hairs |
| *globose* | spherical like a ball or globe |
| *hypanthium* | swollen enlargement of the receptacle at the base of the flower |
| *infundibulate* | shaped like a funnel |
| *ligulate* | strap-shaped |
| *obovoid* | egg-shaped with its broad end near the tip |
| *obtuse* | blunt |
| *pendent* | hanging down |
| *pilose* | bearing soft hairs |
| *prostrate* | lying flat |
| *spathulate* | shaped like a spatula |
| *strigose* | bristly with stiff hairs |
| *sub-* | a prefix here meaning not quite, almost |
| *tomentose* | densely covered by small hairs |
| *truncate* | ending abruptly as if cut across |
| *undulate* | with a margin waving up and down |
| *verruculose* | having small, wart-like projections |
| *villous* | covered with long, shaggy hair |

## *Crassula alata*—first record for this naturalized annual herb in the South Island

*John Barkla*

In June 2009 I collected a diminutive herb from the edge of a foot path along Beach Road in Waikouaiti, North Otago. Although it had the appearance of a *Crassula*, I did not recognize it as any on the native species I am familiar with and so collected a few plants to grow on over the winter. By spring I could see the developing flowers were 3-merous and noted the similarity to the drawing of *Crassula alata* on the front cover of the *New Zealand Botanical Society Newsletter* Number 94 (December 2008). In September 2009 I sent some of my cultivated material to Dr Peter de Lange in Auckland who quickly confirmed it as *C. alata*.

In the NZBS Newsletter Number 94 Colin Ogle reported on the recognition and distribution of *Crassula alata* and concluded that it is "now widely established in the south-western North Island, at least, and perhaps elsewhere." Ogle (2008) stated that this European species was first recognized in New Zealand from material sent live from him to Dr Peter de Lange, who lodged it in the herbarium at the Auckland Museum (AK). Subsequently however Dr de Lange has been through other material in AK and found a specimen of *C. alata*, filed as *C. sieberiana,* that he collected in Hamilton in 1998 (Colin Ogle pers. comm). That, therefore, becomes the first NZ collection of *C. alata*.


Cultivated plants of *Crassula alata* collected from Waikouaiti

Ogle (2008) concluded that it is likely that *C. alata* "has expanded its range and abundance quite recently in New Zealand". As the plant is easily overlooked on account of its small size it seems reasonable to expect that it will be present at other sites in the South Island.

**Acknowledgements:** Thanks to Colin Ogle for discussion on this species and to Dr Peter de Lange for confirming the identification of my specimen.

*Reference*

Ogle C 2008. *Crassula alata* is a fully naturalized species in New Zealand. *New Zealand Botanical Society Newsletter* **94**, 14–16

**Vascular plant survey of 'The Clears', Tautuku Forest.**

*Jaz Morris*

'The Clears' are a series of four clearings in the Tautuku Forest near the Tautuku Bivouac (Clears Hut) in the Catlins Coast, Otago. The clearings display vegetation more in keeping with subalpine environments and as such form scrubby 'islands' amongst the surrounding mature, podocarp forest. They are found on two tributaries of the Tautuku River, and appear from observation to lack forest due to swampy conditions, rather than fire, flood, logging or any other disturbance. The scientific literature provides little help in divining a reason for the presence of these clearings. Despite the low altitude (~250 m), they show a combination of swampy and sub-alpine scrub species, and form a sharp contrast with the forest surrounding the clearings.

The Clears provide habitat in manuka scrub for fernbirds, *Bowdleria punctata*, which would otherwise be absent from the immediate area. They also provide sufficient small ponds and slow waterways to allow sandflies and mosquitoes to breed and dominate. These feed on botanists but are in turn fed upon by avian insectivores, such as fantail, *Rhipidura fuliginosa*, and brown creeper, *Mohoua novaseelandiae*.

On the true left of the Tautuku River, there is the first clearing in an area surrounding Tautuku Hut (of approximately two hectares). This I have surveyed. This clearing is not shown on NZMS260 G47 (2004), but can be found at NZMS260 G47 277998.

I first visited the area on a tramping trip where it was apparent that the variety of habitats created by The Clears and their margins would lead to a wider range of plant species than would occur in pure forest stands. For this reason I undertook a survey of the area on the 23rd of August 2009, with a friend, Max Olsen, as my able field assistant.

Six distinct community types were surveyed from one of the clearings. The first was the tussock grass and low scrub community which forms the centre of the clearing on the true left of the river. Dominated by *Chionochloa rubra* with occasional *Coprosma* spp. and *Cassinia leptophyllus*, this community dominates the western end of the clearing. The second community is at the southern end and is similar to the first, but with a distinct, *Olearia lineata* canopy. The third is a low *Leptospermum scoparium* canopied shrubland which forms the margin of the eastern portion of the clearing. Fourthly, a high, *L. scoparium* canopied forest forms the northern, western and southern margin of the clearing. A damp, *Elaeocarpus hookerianus* and

*Griselinia littoralis* forest with abundant lianes and thick understorey forms the fifth community, and the sixth is the drier mature forest. Here the canopy is almost exclusively *Dacrydium cupressinum, Weinmannia racemosa* or *Metrosideros umbellata*.

Only vascular plants, but excluding ferns, were surveyed on this occasion. There is ample scope for a survey of ferns, lichens and fungi in this area, as it appears to have a high degree of biodiversity due to the variety of habitat.

*Species list*

**Gymnosperms:**

*Dacrydium cupressinum*
*Podocarpus totara*
*Prumnopitys ferruginea*

**Monocotyledons:**

*Agrostis capillaris*
*Astelia nervosa*
*Carex coriacea*
*Chionochloa rigida*
*Chionochloa rubra*
*Cortaderia richardii*
*Earina autumnalis*
*Earina mucronata*
*Festuca novae-zelandiae*
*Holcus lanatus*
*Lepidosperma australe*
*Microlaena avenacea*
*Phormium tenax*
*Poa annua*
*Poa pratensis*
*Uncinia ferruginea*
*Uncinia filiformis*
*Uncinia rubra*
*Uncinia uncinata*
*Winika cunninghamii*

**Dicotyledons:**

*Acaena* sp.
*Aristotelia fruticosa*
*Aristotelia serrata*
*Carmichaelia petriei*
*Carpodetus serratus*
*Cassinia leptophyllus*
*Clematis paniculata*
*Coprosma ciliata*
*Coprosma cuneata*
*Coprosma foetidissima*
*Coprosma propinqua*
*Coprosma rhamnoides*
*Coprosma rigida*
*Coprosma rotundifolia*
*Coprosma* sp. aff. *intertexta*
*Dracophyllum longifolium*
*Elaeocarpus hookerianus*
*Gaultheria macrostigma*
*Geranium microphyllum*
*Griselinia littoralis*
*Hydrocotyle novae-zelandiae*
*Hydrocotyle* sp.
*Leptospermum scoparium*
*Lophomyrtus bullata*
*Metrosideros diffusa*
*Metrosideros umbellata*
*Muehlenbeckia australis*
*Myrsine divaricata*
*Nertera depressa*
*Nertera* sp.
*Olearia ilicifolia*
*Olearia lineata*
*Olearia virgata* var. *implicita*
*Parsonsia heterophylla*
*Pittosporum tenuifolium*
*Plagianthus regius*
*Pseudopanax colensoi*
*Pseudopanax crassifolius*
*Pseudowintera colorata*
*Ranunculus kirkii*
*Ranunculus repens*
*Raukaua edgerleyi*
*Raukaua simplex*
*Rubus cissoides*
*Rubus schmidelioides*
*Rubus squarrosus*
*Veronica salicifolia*
*Weinmannia racemosa*

This brief and non-exhaustive survey yielded 71 species from 26 plant families. The clearings have a significantly greater total floral diversity compared to that seen in the dominant, rata/kamahi/rimu forest. 71 species were found in The Clears, clearing margins and adjacent forest, as compared to 31 in the forest. As previously mentioned, The Clears also provide habitat and food for a variety of birds and thus must be considered valuable conservation land for their contribution to the flora and fauna of the Tautuku Forest as a whole.

The clearing surveyed is situated just south of the limit of the natural range of *Nothofagus*. However, the clearing north of that surveyed has, what I believe to be, the southernmost, naturally occurring *Nothofagus* in New Zealand, a single mature *Nothofagus menziesii* at NZMS260 G47 284003.

A distinct lack of *Veronica* species with only one *Veronica* in the survey is harder to explain. They may be present in other clearings, but were conspicuous in their absence from the Tautuku Hut area. Nothing I could find in the scientific literature explains my findings and I would appreciate correspondence on the matter.

Orchidaceae was present only in the form of the perennial, epiphytic genera, *Earina* and *Winika*. Surveying throughout the year would no doubt pick up annual species from this family as to my knowledge, none would be expected to be seen flowering in late winter. Other annuals that would be expected in the area were not identified for the same reason.

Disappointingly, no species found were considered particularly unusual for the site. Some small eudicot herbs were unable to be identified. I am confident, however, that The Clears, if surveyed comprehensively, would yield some findings of interest due to their isolation from similar habitats and varied conditions.

The Clears evidently add to the total species richness of the area and are therefore valuable to the Tautuku Ecological Area. For this reason, I believe this site is worthy of considerable botanical interest. The remarkable variety of grasslands, scrub and forest zones in such an accessible area means high floral diversity and abundant birds are sure to interest botanists who visit the area. Those with a penchant for moisture and *Coprosma* scrub may wish to take up the challenge to conclusively identify the southernmost naturally occurring *Nothofagus*, while others less inclined will delight in the variety of flora present in a very small area. It was a pleasure to survey this site.

*Acknowledgments*.

Thanks to John Steel of the Otago University Botany Dept for facilitating this survey and supervising its completion; Vickey Tomlinson who provided equipment; Maia Mistral who assisted with some identification; and in particular to Catlins local and field assistant, Max Olsen, whose keenness to make tea, plundered from the *Leptospermum* whilst I counted plants,

was appreciated. He is to be commended also for his dedication to finding interminably endless varieties of raukawa, *Raukaua edgerleyi*, and *Elaeocarpus hookerianus*, to test my identification skills.

## Meeting and trip reports

**Talk report: 24 Feb 2010.** ***Incorporating the Burn and Bite of Vegetation Disturbances into Climate Change Science***

*Gretchen Brownstein*

On Wednesday, 24th of February Dr Brent Ewers gave a talk titled, "Incorporating the Burn and Bite of Vegetation Disturbances into Climate Change Science", to members of the Botanical Society. A rather fitting subject as the smoke from the Mt Allen fires was filling the air. Dr Ewers is an Assistant Professor of Botany at the University of Wyoming and is on sabbatical in the Botany Department for 8 months. Dr Ewers' talk covered some of the work he and his colleagues have been doing on the connections between large-scale vegetation disturbance and climatic change. He gave two examples of the effects of burning and one example of insect/pathogen disturbance on carbon sequestration. His field sites ranged from the boreal forests of Manitoba in the far north of the Canada to the Sagebrush steppe and subalpine forests of southeast Wyoming, USA. In the boreal forests they have a feedback loop where, as climate warms melting the permafrost, there is an increase in the fire cycle. This in turn creates younger stands of trees, which use more water creating more dry sites and more burning, hence more $CO_2$ is released into the atmosphere. In the Sagebrush steppe, more $CO_2$ is taken up at higher soil moisture. As most of the soil moisture is from the winter snowpack, a decrease in the snowpack will mean less soil moisture and less $CO_2$ taken up. In the subalpine forests of the Rocky Mountains, there is massive increase in mortality in lodgepole pine caused by the bark beetle and blue-stain fungi. Dr Ewers' and his colleagues' results show that, due to the lodgepole pines dying, there is a decrease in the greenhouse gases being released, expect for nitrous oxide which is stimulated by more available nitrogen. Also of concern in these forest is (1) how well the regenerating forests will take up $CO_2$ and (2) the possibility that the lodgepole forests will be replaced by another vegetation type. Mixed in amongst these rather disturbing results, Dr Ewers managed cheer up the audience with stories of napalm use by the BLM, pictures of beautiful glow moss (*Aulacomnium palustre*) and sagebrush landscapes and hints on how to find good volunteers (promise them guns and helicopter rides).

## Highlights of Some Summer Excursions.

*David Lyttle*

***Waituna Wetlands** 12th December*

This trip was organised by the Otago Alpine Garden Group to the Waituna wetlands near Invercargill. At 9:00 a.m. I was sitting in McDonalds car park with David Orlovich drinking coffee with the rain pouring down outside. David had come with me on the promise of seeing lots of insectivorous plants and it seemed all we were going to get for our pains was a wet hide. When we reached the site, which was on reverting pasture, it was still raining but the plants were there in flower. Most notable were the *Donatia novae-zelandiae* cushions a subalpine plant growing here at sea level. *Utricularia monanthus* was abundant and in full flower as was *Oreostylidium subulatum*. *Gentianella lineata* and *Herpolirion novae-zelandiae*. The sundews *Drosera binata, Drosera spathulata* and *Drosera pygmaea* were all present.

*Oreostylidium subulatum* Waituna wetlands. Photo by David Lyttle.

***Old Man Range** 27th December*

The day was clear and calm on the crest of the range, which is unusual for this location. *Psychrophila obtusa* and *Ranunculus pachyrrhizus* were emerging from the snowbanks and flowering. *Chionohebe densifolia* was in full flower with many of the emerging flowers showing a delicate mauve colouring. On the dryer ridge crests the cushions of *Chionohebe thomsonii* were in flower. The related species *Chionohebe glabra*, which grows in damper places at the base of tors, was not yet flowering. The cushion forget-me-not *Myosotis pulvinaris* was also flowering. This plant appears to be short-lived and in good years the flowers can entirely obscure the foliage.

*Myosotis pulvinaris*, Old Man Range. Photo by David Lyttle.

I found another two species *Myosotis* growing in bogs; *Myosotis pygmaea* var. *drucei* and *Myosotis tenericaulis*. Bogs proved a happy hunting ground yielding two species of *Cardamine* differing in flower size, *Anisotome imbricata* var. *prostrata* (as illustrated in Mark and Adams though others consider it not to be this taxon) and an *Oreomyrrhis* known prosaically as *Oreomyrrhis* 'bog'.

*Myosotis pygmaea* var. *drucei*, Old Man Range. Photo by David Lyttle.

Further down the range on the eastern side I found some plants of *Pachycladon novae-zealandiae* growing in the gravel by the side of the road an unusual habitat for this species, which is usually grows in crevices in rock tors. The foliage of these plants was very dark almost black. There is a large population of *Celmisia brevifolia* growing close to the road, which seems to mass flower every year and is always a spectacular sight.

***Sutton Salt Lake*** *9th January*

The Taieri pet was home so visiting the Ida Range en route to the Auckland Botanical Society camp at Bannockburn was deemed imprudent. There is a good population of *Aciphylla subflabellata* in this reserve. This species is not particularly common and does not reach the subalpine zone. The historical Hayes Engineering works (home of the Hayes wire strainer) at Oturehua provided an interesting diversion.

***Cromwell Chafer Reserve*** *9th January*

Visited in the gathering dusk with the Auckland Botanical Society. Amongst the rabbit droppings we found the tiny sedge *Luzula celata* growing in a cushion of *Raoulia australis*. Besides this there were a few plants of *Raoulia parkii* and very little else in the way of indigenous vegetation. The Cromwell chafers will have to subsist on a diet of exotic food.

***Carrick Range and Nevis Valley*** *10th January Auckland Botanical Society*.

We had two stops on the Carrick Range crossing over to the Nevis Valley to botanise round tors. The only photograph I took at this stage was of a specimen of *Melicytus alpinus* that Neill Simpson assured me was the typical Central Otago form. By this time the weather was beginning to deteriorate but we continued down into the Nevis Valley where we found *Acaena buchananii, Gaultheria parvula* and the tiny orchid *Microtis oligantha*. Further up the Nevis Valley Neill took us to some old gold mining tailings to show us *Carmichaelia vexillata* and *Myosotis pygmaea* var *glauca*. By this time everyone was becoming wet and cold and photography in the rain was next to impossible so we all retreated back to Bannockburn.

***Flat Top Hill and Chapman Road*** *11th January Auckland Botanical Society*

The wind blew, the rain came down and through the gaps in the clouds we could see fresh snow on Cairnmuir Mountains above Bannockburn. With misplaced optimism we headed out to the Old Man Range. We got as far as the Flat Top Hill Reserve. The vegetation in the lower part of the reserve is mainly exotic so my camera did not even come out of the bag. I saw one nice specimen

of *Hebe pimeleoides* subsp. *faucicola* growing in an inaccessible position. Following lunch in Alexandra we headed out to the reserve on Chapman Road to look for plants growing on the saline soils there. I did not get particularly excited scrabbling round amongst the rabbit droppings looking for the desiccated remains of *Lepidium kirkii* (which eluded us) and *Myosurus minimus* subsp *novae-zelandiae* which happily turned up. The find of the day was a specimen of *Pleurosorus rutifolius* growing in a rock crevice on the riverbank walk near the Alexandra bridge. Despite it's withered, unprepossessing appearance it attracted a queue of photographers. (I am tempted to enter my own picture in the photographic competition just to hear the judge's comments.)

***Remarkables*** *12th January Auckland Botanical Society*

A bonny day but there was a foot of fresh snow down to the ski base so if the proposed BSO trip originally planned for the weekend of the 9th and 10th had gone ahead it is unlikely we would have even set foot on the mountain. Below the ski base where there was no snow lying we found plants of the massive *Aciphylla* aff *horrida* 'Lomond' This un-named species is found throughout the Wakatipu basin and replaces *Aciphylla aurea* at higher altitudes. On the way up to Lake Alta from the ski base complex there were very few plants visible but by the time we had eaten lunch and were on the way down the snow had begun to melt and the characteristic suite of Central Otago cushion plants were appearing. We were not able to get high enough to see the real alpine specialists. *Leptinella goyenii*, *Anisotome imbricata* *Leptinella pectinata* subsp *villosa*, *Kellaria childii*, *Myosotis pulvinaris* and *Abrotanella inconspicua* were all present. *Aciphylla kirkii* and *Aciphylla lecomtei* were found just above the ski base *Aciphylla lecomtei* is local endemic found on Remarkables, Hector Mountains and Garvie Mountains.

A highlight of the day was a visit to Neill and Barbara Simpson's garden in Queenstown, which is packed with native species. As well as their own garden they have planted out the road reserve opposite their property with natives including many rare and endangered species. It was very gratifying to see their plantings rather than the exotic weeds that blight most of the road reserves throughout most of the country.

***Old Man Range*** *13th January*

The day the Auckland Botanical Society attained the summit of the Old Man Range. I was not with the main party when they held the celebration for this milestone but there is a video available. I was elsewhere busy searching for specimens of a small *Cardamine* I had found on my previous visit to send to Peter Heenan who is revising the genus. I was not having much luck finding the original plants and in the process found a different species. Peter has found enough new species of *Cardamine* to satisfy the most avid taxonomist and I am not sure if we need to collect any more for him to describe. Eventually I found the species I was looking for and was able

*Myosotis pygamea* var. *minutiflora*, Old Man Range. Photo by David Lyttle.

to make the collection. On this visit I found another *Myosotis*, *Myosotis pygmaea* var *minutiflora*, which as its name suggests is a tiny plant with inconspicuous flowers. It was growing in the exposed cushion field rather then in the wet sites favoured by *Myosotis pygamea* var. *drucei*. *Celmisia sessiliflora* was in flower as was *Kelleria childii*.

***Pisa Range*** *14th January Auckland Botanical Society*

After route finding through the snow farm we headed down into a wetland. Here we found *Coprosma atropurpurea*, *Euphrasia dyeri*, *Abrotanella caespitosa*, *Gaultheria parvula*, *Drosera arcturi* and *Kelleria paludosa*. Three small buttercups were also present, *Ranunculus royi*, *Ranunculus maculatus* and *Ranunculus cheesemanii*. I had seen the first two before but *Ranunculus cheesemanii* was unfamiliar to me. The plant I had always considered to be *Pimelea sericeovillosa* was not that species according to Mike Thorsen who had joined us at that stage but something else. It is quite a beautiful plant so I hope it gets a name worthy of it. Further up the Range in the cushion field we found *Schizeilema exiguum* a tiny plant that I had not seen before and some specimens of *Anisotome lanuginosa* which Mike was trying to convince himself and others was different from the typical species. By this time our

Auckland friends had absorbed all the botanical names they could cope with and as the wind was beginning to pick up the decision was made to head back down the mountain. I left with regret as it was still daylight and my camera flash card was not yet full.

***Ida Range*** *15th January Botanical Society of Otago*

We took advantage of the settled weather to visit this area with some of our Auckland Bot Soc friends on our way back to Dunedin after the Bannockburn camp ended. The northeast part of Otago is distinct from the rest of Central Otago geologically and botanically. *Pimelea traversii* was abundant and flowering profusely. *Raoulia petriensis* a distinctive species found only in North Otago and South Canterbury was also flowering.

*Raoulia petriensis*, Ida Range. Photo by David Lyttle.

*Raoulia eximia* which reaches it southern most limit on the Ida Range was there growing on rock outcrops in association with *Helichrysum intermedium*. Mike spotted a patch of the cryptic buttercup *Ranunculus crithmifolius* that four other people had walked over and failed to notice.

*Ranunculus crithmifolius*, Ida Range. Photo by David Lyttle.

Mike also found *Myosotis pygamea* var *glauca*, which we had seen previously in the Nevis Valley by sitting on it at lunch time. My favourite *Melicytus*, *Melicytus* aff. *alpinus* 'Ida'. It seems to be a distinctive form adapted to a scree habitat. *Colobanthus acicularis* looking very much like a vegetable hedgehog was growing in the scree along with scattered plants of *Senecio glaucophyllus* subsp. *discoideus*.

*Aciphylla* aff. *horrida* Lomond North Marvora Lake. Photo by David Lyttle

***North Marvora Lake** 18th January*

An afternoon of quiet botanising before going into the Eyre Mountains. This is a spectacular location with views down the lake and across to the Livingstone Mountains. *Aciphylla* aff. *horrida* 'Lomond' was a conspicuous component of the mixed tussock shrubland vegetation. We also found the rare native dandelion *Kirkianella novae-zelandiae* and the orchid *Thelymitra cyanea* at this locality.

*Ranunculus scrithalis*, Hummock Peak. Eyre Mountains. Photo by David Lyttle.

***Hummock Peak**, Eyre Mountains 19th January*

After approaching via the Gorge Burn we headed up the hill in the general direction of Hummock Peak, which was not visible due to low cloud cover. We climbed up through some depleted tussock grassland with *Aciphylla* aff. *horrida* 'Lomond' prominent. Again we found *Kirkianella novae-zelandiae* growing in eroding patches of soil quite low down. We dropped off a leading spur and skirted round the base of a line of bluffs *Gaultheria crassa* was growing in profusion al over the bluffs and was in flower. Other plants present were *Raoulia buchananii*, *Anemone teuicaulis*, *Ourisia sessiliflora, Ourisia spathulata, Ourisa caespitosa,* and *Anisotome capillifolia*. We found *Pachycladon wallii* and *Myosotis macrantha,* both spectacular plants

growing in rock crevices out of reach of browsing animals and photographers. We eventually got to a scree and found the plants we came to see. *Ranunculus scrithalis* is an Eyre mountain endemic. It is a very curious plant; the leaves are covered in conspicuous white hairs and appear almost black. The flowers are lemon-yellow and tucked down in the foliage.

Hummock Peak Eyre Mountains showing habitat of *Ranunculus scrithalis*. Photo by David Lyttle.

We found one plant of what appeared to be *Myosotis glabrescens* a rare species known only from a few plants on Hector Mountains but it had been eaten down and was not in flower. Other plants common on the scree were *Stellaria roughii* and *Haastia sinclairii* var *fulvida*. This form of *Stellaria roughii* seems to be different from the form found further north in Canterbury. We found two small plants of the endemic Eyre mountains spear grass *Aciphylla spedenii*, which has glaucous foliage with red tipped spines. In the upper basin on the colder shade slopes plants typical of Fiordland began to appear. We found *Celmisia verbascifolia*, *Geum uniflorum* *Aciphylla pinnatifida* and *Chionohebe ciliolata* subsp. *fiordensis*. On the way down I found *Parahebe decora* growing in gravel in eroding gully. The Eyre Mountains have some marvellous plants but are not a place for the faint-hearted as the terrain is steep and bony. A week after our visit, a friend from Invercargill who was following in our footsteps dropped has camera bag containing his cell phone and car keys over a bluff. After a fairly anxious 40 min search he retrieved it from the middle of a large *Aciphylla*.

*Celmisia philocremna*, Mt Bee, Eyre Mountains. Photo by David Lyttle.

***Mt Bee, Eyre Mountains*** *20th January*

Mt Bee is essentially an open ridge between the Cromel and Irthing Streams on the eastern side of the Eyre Mountains. It was originally known by another name that reflected the difficulty of mustering stock off it but the National Geographic Board chose not to use that particular name and called it Mt Bee instead. Mid morning found us up at the Mt Bee huts looking out on the Southland plain, which was entirely covered by fog. The vegetation along the ridge is mixed tussock shrubland with *Aciphylla* aff *horrida*' Lomond' and *Aciphylla glaucescens* prominent. There is a lovely silver-grey

*Aciphylla glaucescens*, Mt Bee Eyre Mountains. Photo by David Lyttle.

form of *Celmisia semicordata* subsp. *stricta* present but this year very few plants were flowering. The aim for the day was to find *Celmisia philocremna*, which is found only in the Eyre Mountains and grows on steep inaccessible crags. This entailed a 7 km walk along the ridge to some rock outcrops above the Cromel, which was eventually accomplished and some flowering plants located along with *Raoulia buchananii*, *Leucogenes grandiceps*, and *Stellaria roughii*. As a bonus we found two plants of *Pimelea poppelwellii* a rare species that is also found on the Hector and Garvie Mountains and can easily be mistaken for *Hebe odora* when it is not in flower. All that then remained was to walk 7 km back along the ridge and leave the mountain. Not many photographs were taken on the return leg of the journey.

I would like to acknowledge the assistance and companionship of various people who participated in these trips. Dave Toole, John Fitzgerald and David Orlovich for the Waituna wetlands, Maureen Young and the members of the Auckland Botanical Society who hosted us at Bannockburn. Neill and Barbara Simpson who lead the field trips at Bannockburn, Mike Thorsen, Allison and John Knight, Barbara Hammond and finally Graeme Jane and Gael Donaghy for two strenuous days botanising in days in the Eyre Mountains.

Gorge Creek, Eyre Mts. Photo by David Lyttle.

*Pachycladon wallii*, Hummock peak, Eyre Mountains. Photo by David Lyttle.

*Myosotis tenericaulis* Old Man Range. Photo by David Lyttle.

*Myosotis macrantha*, Hummock peak, Eyre Mountains. Photo by David Lyttle.

## Botanical Society of Otago: PO Box 6214, North Dunedin 9059, NZ

Patron: Audrey Eagle http://www.botany.otago.ac.nz/bso/

### Committee 2009–2010



Please submit copy for next newsletter to David Orlovich by 31 May 2010

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