

☞ Freehold Creek, 3 Jan – Allison Knight

On this moist but mild day the trip began behind the Glen Mary Ski Club, where we picked up the track to Freehold Creek. *Hieracium* dominated amongst the short grazed tussocks, while the monospecific endemic, dandelion-like *Kirkianella novae-zelandiae* was spotted on the track. A little further on, in the turf beside a pond, we marvelled over the tiny fern, *Ophioglossum coriaceum*.

At the forest edge, identification of mountain beech, *Nothofagus solandri* var *cliffortioides*, was debated, as some of the leaf-tips were rounded like black beech, *Nothofagus solandri* var *solandri*. Bright patches of forest floor were carpeted by petals of the red mistletoe, *Peraxilla tetrapetala*. A few buds were left to tweak open as the birds do for pollination. Also in flower were the orchids, *Chiloglottis cornuta* and *Microtis oligantha*.

Above bushline *Hieracium* was still evident, but there was much else of interest: - *Myrsine nummularia* with purple berries that lizards like to eat; two whipcord *Hebes*, *H. hectorii* and *H. lycopodioides*; yellow swathes of *Bulbinella*; many woolly-headed *Craspedia*; two *Aciphylla* - the golden *A. aurea* and the creamy-flowered *A. 'Lomond'*, spiky false spaniard, *Celmisia lyallii*, with its tips nibbled by hares; and the yellow daisy *Dolichoglottis lyallii* crossing with the white *D. scorzonerooides* to give a cream-flowered hybrid.

Any lack of diversity in the vascular plants was more than made up for by the richness of the lichen flora on soil, rock and bark, inside the forest and out. The white paint-like splashes of *Lecanora farinacea* stood out on the wet rocks above bushline.

☞ Mackenzie Basin and Tekapo River Valley, 6 Jan – Val Smith

Following his interesting talk the previous evening as part of the DoC Summer Programme, Geoff Rogers not only made suggestions for our last day, but also offered to show us something different – four very dry, degraded areas with shrubland restoration possibilities.

First, a terminal moraine site in the Pukaki Conservation Area, with a mixture of indigenous and exotic grasses still being grazed, and six species of shrubs: *Carmichaelia petriei*, *Coprosma propinqua*, *Discaria toumatou*, *Melicytus alpinus*, *Muehlenbeckia complexa* and, growing in its shelter and tightly interlaced with it, *Sophora prostrata*. Seeing the prostrate kowhai *in situ*, with flower and seed, was a real highlight. The shrubs all show resilience to the desiccating winds and low rainfall, and Geoff said the reserve is expected to recover.

We drove on to the featureless flats of the Mackenzie basin, to an example of the ecological variability of the Tekapo dendritic (like the branches of a tree) drainage system. With a fall of only 1-1.5 °, the land is a series of dry interfluves and shallow, slightly damper channels. Within the rabbit-infested *Hieracium* and hard tussock “pasture” have been found several rare and endangered plants.

Dedicated searching of the channels eventually located a few tiny spreading plants of *Leptinella* "Clutha", previously known only from Pisa Flat in Central Otago. An earlier find of the slightly larger, denser, silkier and generally more attractive *L. serrulata* probably helped get an eye in for the smaller plant. Other plants of interest in the arid conditions were *Acaena buchananii*, with variable green or glaucous foliage and red sessile fruiting heads, small bronze mounds of *Scleranthus uniflorus*, *Pimelea pulvinaris* and three species of *Raoulia* – *R. parkii*, *R. australis* and *R. tenuicaulis*. The finding of a *Helichrysum* species not seen there before created a minor flurry of excitement and resulted in a GPS reading being taken of its location.

A little further along the road on the same property, we were shown an exclusion plot, one of ten set up ten years ago by DoC in different parts of the Mackenzie basin. Regular monitoring has seen little noticeable difference in plant recovery within the plot so far. However, Graeme did note within it, three shrub species not seen on the still grazed area outside.

The last study site was along the Bullock Wagon Trail and the hydro canal to the terraces and bed of the Tekapo River. The braided riverbed yielded mainly exotics, but amongst them were brilliant reddish-purple berries of *Coprosma atropurpurea*. The dry, stony slope above was probably disturbed by hydro works in the past, and was sparsely vegetated, but keen eyes found tough and resilient *Carmichaelia nana* and *C. vexillata*, *Muehlenbeckia ephedroides*, grey rosettes of *Convolvulus verecundus* subsp *verecundus*, woolly-looking *Pimelea sericovillosa*, muddy brownish-grey *Lepidium sisymbrioides* subsp *sisymbrioides* and more *L. "Clutha"*.

An interesting and thought-provoking day to end this year's New Year Field Trip.

More reports – look forward to reading these further summer trip reports in the next newsletter: Sealy Tarns/Mueller Hut - Rick Jackson, Temple View Walk – Neill Simpson, Ohau Skifield – Barbara Clark and Ohau Kettle Holes/Bendhu Bog Pine Reserve – Bastow Wilson.

REVIEWS

Book review – by John Steel

Williston, P. (2001) *The Botrychiaceae of Alberta.*

57 pp. Softcover. Alberta Natural Heritage Information Centre, Edmonton. \$CDN20 + \$CDN6 p&p.

This interesting little book summarises much of what is known about a fascinating plant group. *Botrychia* are eusporangiate ferns (having sporangia developed from several cells) and therefore regarded as primitive and possibly more closely related to the cycads and early gymnosperms than the leptosporangiate ferns (having sporangia developed from a single cell).

Alberta is something of a centre of *Botrychium* diversity having seventeen species, fifteen of which are regarded as rare. New Zealand has three species, only one of