BOTANISTS AT MOUNT COOK

BY THE PARTICIPANTS IN THE SUMMER CAMP

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The New Zealand Alpine Club's Unwin Hut was a good strategic base for the Society's 2001 Summer Camp. Not least of its advantages are the spectacular, beautiful views of the high central Southern Alps. We enjoyed rainless weather for all but one of the days.

The Mount Cook National Park venue posed some problems for hard-line botanists. Collecting plants from the Park to pore over (except introduced species) was not possible. However, we had the benefit of being able to walk about with Hugh Wilson's splendid, illustrated field guide in hand. Identification of most plants could be done immediately. Hugh's description of vegetation (containing checklists of mosses, liverworts and lichens) was also available. Almost all attempts to one-up Hugh by "new" finds proved futile – his lists are really comprehensive. The exceptions were a little sedge *Eleocharis gracilis,* found by Peter Wardle at Red Tarn (a new record for the Park); and additional records of rata, *Metrosideros umbellata,* visible in this good flowering year in several places on the southern Mount Cook Range (Fig. 1). These are not shown on Hugh's (1976) map.

Opportunities for more intensive identification efforts were afforded by a foray outside the bounds of the Park; some of the species found are not represented in the Park.

On most days we saw a considerable range of vegetation types: forest, scrub, grasslands and wetlands of the montane and subalpine zones; as well as large areas with more open vegetation (recent glacial moraines, stream and river floodplains, cliffs, rock outcrops, screes and avalanche paths). On some days at least some of us saw alpine grasslands, high rock ridges, and fellfields.

What follows is an attempt to summarise, briefly, the excursions, day-by-day, and to note the more outstanding plants observed. Common, well-known native plants and introduced species are usually not mentioned.

Monday 12 February. Sawyers Stm and lower slopes of Mt Sebastopol (just beside Unwin Hut).
From a narrow gorge with waterfalls the stream emerges onto a gravelly fan, with extensive grass and matagouri (*Discaria toumatou*). Small patches of silver beech *Nothofagus menziesii,* with adjacent cover of shrubs (*Coprosma* spp., shrub wineberry, *Aristotelia fruticosa,* mountain toa toa *Phyllocladus alpinus* etc.) and mountain ribbonwood *Hoheria glabrata,* clothe the steep slopes on either side. A few rata grow on high cliffs on the south side and on the Sebastopol bluffs.

Interesting discoveries were: patches of the introduced stem parasite, dodder, *Cuscuta epithymum* in full flower; several bidibids, *Acaena caesiiglauca, A. dumicola, A. fissistipula, A. inermis* and *A. saccaticupula*; tutu species, large *Coriaria sarmentosa,* small *C. angustissima* and hybrids between them. Beside a silver beech patch stood several 3 to 6 m. high, much-branched hybrids between mountain totara, *Podocarpus hallii* and snow totara, *P. nivalis.* A few single-stemmed, tall mountain totara occur in the forest, while prostrate snow totara is present above it, in mixed scrub on boulder slides. Also on this slope, beneath the black, forbidding bluffs of Sebastopol, are extensive, dense patches of mountain hardfern, *Blechnum montanum.* Find of the day (by Joy Talbot) was the small, stiff-leaved *Celmisia vespertina,* not often seen east of the Main Divide.

Tuesday 13 February. Mueller moraines, Lower Hooker Valley and slopes near Te Wae Wae (Stocking) Glacier.

In the cool, clear morning we spent some time on the bouldery, partly scrub-covered moraines of the lower Mueller Glacier. Here we found extensive patches of golden spearleaf, *Aciphylla aurea* and, among the shrubs the super-divaricate *Pittosporum anomalum,* mountain wineberry with fruit colours ranging from white through pink and red to near-black, *Hebe buchananii,* sweet-scented *Carmichaelia grandiflora* and much mountain toa toa. Numerous rata blazed on the bluffs on the lower flanks of Mt Wakefield between the two Hooker River footbridges.

Many treasures flowered on the cliff face gallery near the second footbridge: *Celmisia angustifolia, C. petiolata, Dolichoglottis (Senecio) scorzoneroides; Geum parviflorum; Poa novae-zelandiae;* edelweiss, *Leucogenes grandiceps. Parahebe linifolia* and *Celmisia bellidioides* were not in bloom. The prize of the day was lovely, greenish-yellow-flowered *Myosotis macrantha.*

In the lower Hooker Valley one team made a gradual traverse through continuous dense, tall, stiff snow tussock, *Chionochloa rigida,* to the bouldery bed of the Te Wae Wae Stream, passing big, flowering *Aciphylla scott-thomsonii, Dracophyllum kirkii, Gentiana corymbifera, Coriaria* cf. *plumosa, Olearia moschata* and, in wet places, *Celmisia glandulosa* and *Gonocarpus aggregatus.* A beautiful reward (in addition to the magnificent views of Mounts Sefton and Cook that we had on this cloudless day) was our find of a patch of Mt Cook buttercup, *Ranunculus lyallii,* in full bloom. Its late flowering was the result of the burial of the area near the stream, during the winter and spring, by deep avalanche snow, which still covered the ground nearby. As the snow melted, a short time before our visit, the buttercups came out of their enforced dormancy and were quickly getting through their vegetative and reproductive cycles. In the valley below most of these buttercups were shedding fruit, and their older leaves were already beginning to die down.

The most energetic team climbed up an old avalanche chute towards the Te Wae Wae (Stocking) Glacier. There they saw many other alpine plants, among them *Celmisia semicordata, C. laricifolia, C. walkeri, Ourisia caespitosa, Euphrasia revoluta, Schizeilema haastii, Luzula colensoi, Gentiana divisa* and abundant *Myosotis macrantha.*

Returning past the muddy Mueller Lake, a sign of recent, rapid glacier melt-back, there was time for some more botanising on the topsy-turvey landscape of the old

Mueller terminal moraines. At the White Horse Hill camping area we weeded out some heather, *Calluna vulgaris,* a remnant of a misguided attempt to introduce a bit of Scotland to the area.

Wednesday 14 February. Sebastopol, Red Tarn, Governor's Bush.
On a grey day, with a blustery west wind we headed for the Sebastopol track, a steep, well-constructed stairway, of thousands of steps. The lower slopes support small silver beech stands and scrub with much bog pine, *Halocarpus bidwillii,* snow totara, mountain toa toa, *Coprosma ciliata,* occasional *Exocarpos bidwillii*, and, in the gullies, bush snow tussock, *Chionochloa conspicua.* Open areas on higher slopes have a range of herbaceous species including eyebrights, *Euphrasia laingii, E. zelandica* and *E.* sp. cf. *revoluta. Brachyglottis (Senecio) haastii* was also present, as were the turfy cushions *Celmisia sessiliflora* and *Oreobolus pectinatus.*

Red Tarn, and the adjoining hummocks lie on the surface of a gigantic landslide. The small tarn, named because of its floating cover of *Potamogeton cheesemanii,* has an interesting array of marginal species, including sundew, *Drosera arcturi, Oreomyrrhis colensoi, Microseris scapigera, Plantago triandra, P.* sp. cf. *uniflora, Microtis* sp. cf. *oligantha, Carpha alpina, Carex echinata, C. sinclairii, C. gaudichaudiana, Ranunculus glabrifolius, R. gracilipes, Gonocarpus montanus* and *Bulbinella gibbsii. Eleocharis gracilis* was also present, as noted earlier – the find of the day.

A walk through the big silver beeches of Governor's Bush completed the day's botanising. Of special note were *Brachyglottis (Senecio) bennettii,* a few large mountain totara, *Rytidosperma gracile, Mentha cunninghamii, Oreomyrrhis ramosa,* the orchid *Aporostylis bifolia,* and one straight, but fallen rata. As Hugh Wilson says, most rata in Mount Cook National Park are bushy shrubs.

Thursday 15 February. Pukaki Reserve and Birch Hill tarns.
Threatening weather on the Main Divide sent us down-valley, to near the southern end of Lake Pukaki. Here we visited a reserve on the ancient latero-terminal moraines formed during the Otira Glaciation, perhaps about 16,000 years ago. Here there are open, grassy areas, some small, partly infilled tarns, and areas of dense scrub. In the scrub are common species such as matagouri; *Coprosma propinqua;* korokio, *Corokia cotoneaster*, and shrub wineberry. Less common are *Carmichaelia petriei, Coprosma intertexta, Clematis marata* and *Parsonsia capsularis.* Scattered in the scrub, tall *Hebe cupressoides* bushes project above the canopy – the highlight plant of this location. Pest plants include the sweet brier, *Rosa rubiginosa, Cotoneaster simonsii,* beginning to be a serious problem, and, in grassy areas, *Pinus nigra.* Our group pulled or grubbed out many of the latter.

In and near the wetlands were *Sphagnum cristatum* (a fascinating find in such a dry region), *Hierochloe redolens, Gaultheria (Pernettya) nana, Carex flaviformis, Herpolirion novae-zelandiae,* bladderwort, *Utricularia monanthos* and some *Dracophyllum uniflorum* x *pronum,* and *Gaultheria depressa* x *nana* hybrids. *Nardus stricta,* a harsh-leaved weed grass from Europe, is becoming well-established in the area. Much patient work will be needed to control it.

Some of us stopped, in rain, at Birch Hill, to visit tarns there. Our rewards included the large amounts of flowering *Gratiola sexdentata* and *Elatine gratioloides* in a wet tarn. On tarn margins and in a dried-up tarn were *Glossostigma elatinoides* (rather incestuous nomenclature here!), *Hypsela rivalis, Limosella lineata, Hypericum japonicum* and *Isoetes alpinus* (quillwort, a Pteridophyte with swollen basal sporangia).

Friday 16 February. Tasman moraines, Blue Lakes, Wakefield Waterfall Creek and Tasman River Floodplain.
Light showers in the Hooker Valley and a cool southerly prompted us to head for the Tasman Glacier moraines at the Blue Lakes area, past the scrub and forest-clad slopes of the southern Mt Cook Range, with its series of deep-cut creeks and avalanche-swept screes.

Our first fascinating find, one of the prizes of the day, was very abundant pygmy mistletoe, *Korthalsella clavata,* on matagouri. Miles Giller also found it on mountain wineberry, *Olearia nummularifolia, Coprosma propinqua, C. ciliata, C. rigida* and *C. rugosa.*

From the 1890 moraine crest the view over the large Tasman Lake, with icebergs lining its southern end, was impressive; a small boat provided the scale. We saw much *Asplenium trichomanes, A. richardii, Blechnum penna marina* and, a strange occurrence, *Pyrrosia eleagnifolia* (between two boulders). Other finds included *Pimelea traversii, Helichrysum depressum* and *Myrsine nummularia*, with purple berries.

In the scrub around Blue Lakes were *Myrsine divaricata, Pittosporum anomalum,* and the beginnings of forest: patches of *Griselinia littoralis, Hoheria glabrata,* and a few young mountain totara. Miles Giller found some *Olearia fimbriata* (once known as *O. odorata*) and *Arthropodium candidum.* On the dried-up floors of the shallower tarns was abundant *Neopaxia* cf. *linearifolia.*

Some of us explored a rather dense shrubby area beside Wakefield Waterfall Creek; its cover was low mountain totara and mountain toa toa, with various shrubs, including much *Pseudopanax colensoi.* Rata grows on cliffs near the waterfall and in the next creek further south, always on the most northerly-facing aspects.

A search on the Tasman River flats for *Myosotis uniflora* was rewarded when, at last, Bryony Macmillan found a patch, quite near the road. Its habitat, on open, fine gravel is circumscribed. Once we had the right search image, more of it was evident. This was the second important find of the day. On these river flats shaggy moss, *Racomitrium lanuginosum,* is the dominant cover, tending to limit the growth of other species. An unnamed *Pimelea* of the *prostrata* group and a puzzling *Raoulia,* resembling *R. haastii,* were quite numerous here.

Saturday 27 February. Kea Point, Mueller moraines and Tasman Valley; Sealy Lake and Sealy Range.
A brilliant day dawned. The party divided into "low" and "high" groups. While the latter climbed up to Sealy Lake and beyond, the former went to Kea Point, gaining magnificent views of the ice-clad flanks of Mt Sefton, across the Mueller Glacier, and

the more distant, towering Aoraki and other peaks of the Mt Cook Range, above the Hooker Valley. This party botanised in the area for a while, then spent some time near the lower Hooker River footbridge before going again to the Tasman River flats. Escape from the blazing sun in this desert-like landscape was found under a small road bridge – a good haven for a cup of tea! Some of the group explored the silver beech forest at the base of Mt Wakefield.

The high altitude group had splendid views, and a great day's botanising. The track climbs first through subalpine scrub (with broadleaved snow tussock, *Chionochloa flavescens, Ranunculus lyallii,* snow totara, *Dracophyllum uniflorum* and other shrub species. Then it passes into alpine grassland, where midribbed snow tussock *Chionochloa pallens* and curly grass *C. crassiuscula* become dominant. In late snow areas the short, snow patch grass, *C. oreophila* forms a turf. Among the many botanical treasures were: *Celmisia hectori, C. durietzii, Forstera tenella, Lobelia linnaeoides, Oreobolus impar* and, on rock outcrops, *Chionohebe (Pygmea) ciliolata* and *Rytidosperma setifolia.* On the ridge-top near the Mueller Hut, recently released from snow cover, were *Phyllachne colensoi,* and highlights for the day, abundantly-flowering *Hectorella caespitosa* and sheets of flowering *Ranunculus sericophyllus.*

The participants were very satisfied with the botany and the pleasant social life of the camp. For much of the trip we shared the hut with young climbers; the discourse was lively at times! Thanks to the Alpine Club for allowing us to stay there and to the warden, Eileen Jackson for her help.

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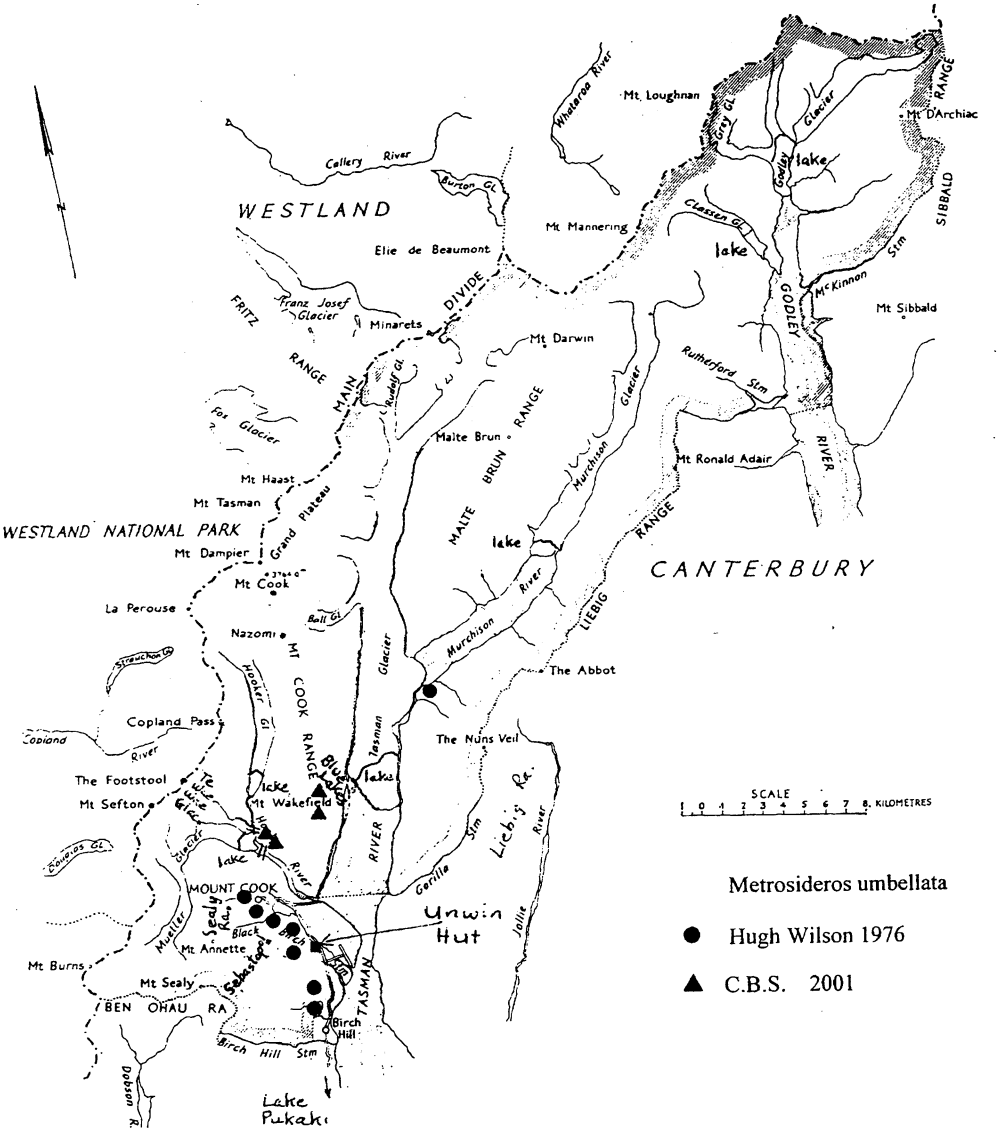

Fig. 1. Locations of *Metrosideros umbellata* in Mount Cook National Park.