

The present site is a circle of wire netting enclosing a few square metres of rough grass through which grew several dozen large, fat, deepblue buds. This patch was in full sun, more or less left alone and the plants appeared to be perpetuating themselves within the wire circle.

Outside the wire was a mown area of grass, cut twice per year, in November and February. A close search revealed about a dozen G. acaulis seedlings within 1.5 m of the wire.

The Gentians had been in the present site for 20 or so years and in another enclosed area a few metres away for at least 50 years.

This original site had several plants but only one flower and was shaded by shrubs. A third and smaller site had several plants but no flowers and was also in some shade.

Mr. Brittan said he had never seen a flower outside the netting. Any escapes would almost certainly be noticed.

Another plant in the netting enclosure was Pulsatilla vulgaris. This consisted of five large plants covered with silky seed heads. There were no seedlings.

This plant would also appear to be in an ideal situation of limestone grassland. Perhaps it is too dry for these plants in the summer, the seedlings may perish. If Pulsatilla seed dries out too much it will not germinate. The wind may not scatter the seeds beyond the reach of the lawnmower, or perhaps they are evolving, generation after generation and getting used to their new mountains so that one day they may travel out from their wire cage and dot the hillsides with deep blue cups of Gentiana acaulis and nodding sky blue flowers and silky seed heads of Pulsatilla vulgaris.

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#### FLORISTIC RECORDS FOR CANTERBURY

B.P.J. Molloy

Some interesting plant records for 1978-79 are as follows :-

Coprosma sp. (aff. C. parviflora): Damp places in milled bush, Clarke Flat, Peel Forest Park, South Canterbury. This is the southernmost extension to date of an uncommon, undescribed, small-leaved species which forms tall, slender, leaning trees on wet alluvial sites. This species was first recorded in the South Island at Coopers Creek by A.P. Druce in 1978 (Molloy 1978) and has probably been confused in the past with another coprosma, also aff. C. parviflora - the "C. parviflora" of most authors, but not the true C. parviflora of North Auckland. This coprosma could be included in the register of rare and endangered New Zealand plants (see Given 1979).

Hymenanthera angustifolia (sens. lat.): Milled bush, Clarke Flat, Peel Forest Park, South Canterbury. A plant seldom seen in

Canterbury, here forming a few, leafless, slender trees with inter-lacing branches amidst other trees and shrubs in light bush. Included in the register of rare and endangered New Zealand plants by Given (1979).

Carmichaelia kirkii: Dry, Hall's totara (Podocarpus hallii) woodland relic on boulder field surrounded by snow-tussock grassland; Coal Creek, Totara Peak, Benmore Range, Mackenzie basin. Forming tall, straggling shrubs among others such as Aristotelia fruticosa, Coprosma propinqua, C. ciliata, Olearia odorata and Hebe rakaiensis. This record supports earlier ones reported for the Mackenzie basin (Macmillan 1979), but the growth form and habitat are in sharp contrast to the slender lianes found in a wet, alluvial, kahikatea (Dacrycarpus dacrydioides) forest remnant near View Hill, on the high Canterbury Plains (Molloy 1978). A species included in the register of rare and endangered New Zealand plants by Given (1979).

Pachystegia insignis (sens. lat.): The so-called Marlborough rock daisy is said to reach its southern limit "abruptly along the bluffs just on the Canterbury side of the lower Conway bridge" (Moore and Irwin 1978), on State Highway 1. However, small forms of this variable species, together with a common companion - Hebe hulkeana occur further south on the bluffs of the Leader and Castaly rivers. These pachystegias are similar to those found north of Waiiau along the inland Kaikoura route on State Highway 70. South of the Waiiau River, on the steep bluffs of Mt. Palm and the Wart, there are extensive populations of a large form reminiscent of coastal pachystegias found north of Kaikoura, while even further south there is a colony of smaller plants in a bend of the Leamington Stream, almost due west of Cheviot. Thus Pachystegia nearly reaches the Hurunui River, Cockayne's boundary between his North-Eastern and Eastern Botanical Districts. We are growing plants of these and other populations of Pachystegia at Botany Division for further comparison, and are interested in additional distribution records.

The following records are concerned with the front ranges of South Canterbury visited at different times with D.J. Galloway, B.H. Macmillan, D.R. Given and A.D. Campbell.

Hebe allanii/amplexicaulis complex: Glabrous and hairy, glaucous hebes with amplexicaul leaves form an unresolved complex in the rocky gorges and on ridge-crest rock outcrops on the Mt. Somers, Mt. Peel and Four Peaks ranges, and on the Hunters Hills. Included in this complex are the so-called varieties erecta and suberecta of H. amplexicaulis, and a wide range of small to very robust plants. Hairy plants fitting the description of H. allanii occur on the rocky ridges of Little Mt. Peel and Mt. Catherine, and are especially abundant on Fiery Peak and Devils Peak, Four Peaks Range. H. allanii is included in the register of rare and endangered New Zealand plants (Given 1979). We are growing specimens of this complex at Botany Division for further comparison.

Leucogenes sp. (aff. L. leontopodium): A few plants of this undescribed species occur near the summit of Middle Mt. Peel, but the main population seems to be confined to the southern slopes of Mt. Peel. This species - the Mt. Peel edelweiss - does not appear to grow on surrounding mountains and should be included in the register of rare and endangered New Zealand plants. Specimens are being cultivated at Botany Division, along with other Leucogenes entities.

Celmisia ramulosa var. tuberculata: An excellent colony of this erstwhile Otago plant (e.g. Rock and Pillar and Old Man ranges) occurs on the sheltered southern and eastern slopes near the summit of Tripps Peak, Four Peaks Range. Associated celmisias include C. viscosa, C. laricifolia, C. angustifolia, and a range of plants from an unresolved complex involving C. angustifolia and C. du-rietzii. Formerly, the northern limit (and only Canterbury occurrence) of C. ramulosa was believed to be Mount Nimrod in the Hunters Hills. In March, this year, it was recollected from there and from a site between Mount Nimrod and Mount Nething by D.R. Given and J.A. Anderson. As far as we know the Tripps Peak colony is the northernmost extension of C. ramulosa var. tuberculata.

Celmisia incana complex: A large, spectacular and variable population of this species complex grows on the steep, sheltered, eastern slopes of Devils Peak, Four Peaks Range. Associated celmisias are C. viscosa, C. laricifolia, C. angustifolia, C. haastii and C. spectabilis var. magnifica. The Celmisia incana complex is usually encountered in the mountains north of the Waiiau River, North Canterbury.

Helichrysum plumeum: A large and superb population of this distinctive rock everlasting grows on the rock bastions, outcrops, screes and soil banks on the sunny, northern slopes of Devils Peak, Four Peaks Range. Associated species include another rock everlasting, Helichrysum selago var. selago, and the Hebe allanii/amplexicaulis complex mentioned above. The two rock everlastings occur side-by-side, often growing out of the same rock fissure, and there are no apparent hybrids. H. selago var. selago is also common on sheltered rocks on the eastern slopes of Devils Peak. H. plumeum is included in the register of rare and endangered New Zealand plants (Given 1979), and it seems to reach its northernmost limit and highest frequency on Devils Peak. Elsewhere, including its type locality - Mt. Dobson - this species is rather uncommon.

Anisotome capillifolia: A small colony of this robust, feathery anisotome occurs on the very steep, sheltered eastern slopes of Devils Peak. Mark and Adams (1973) describe (page 84) and illustrate (plate 30) this species and give its distribution as "western Otago and northern Southland, with occasional plants in Fiordland". Their description of its habitat "On shady ledges and crevices of rock outcrops, usually in fellfield" adequately describes its station on Devils Peak. This is probably the first record of this species for Canterbury.

These South Canterbury records, together with other floristic and climatic and landscape features, strongly suggest that this region was a major refugium for species, protecting them from the environmental extremes of the last glaciation. Specimens of the species listed have been collected and will be deposited in the Botany Division herbarium.

#### References

- Given, D.R. 1979: Threatened plants in New Zealand. In "A Vanishing heritage: the problem of endangered species and their habitat". The Nature Conservation Council, Wellington 22-45.

