

CUSHION PLANTS OF TASMANIA

M.J.A. Simpson

Curtis (1969) recognises five cushion plants (or bolster plants as they are known there) for Tasmania. Abrotanella forsteroides and Pterygopappus lawrencei both belong to the Compositae, Dracophyllum minimum (Epacridaceae), Phyllachne colensoi (Stylidaceae) and Donatia novae-zelandiae (Donatiaceae). The discovery about three years ago of a Pygmea, said to be conspecific with P. ciliolata var. fiordense added one more (Ratkowsky, D. & A. 1974). Three of these Pygmea, Phyllachne and Donatia are shared with New Zealand and Dracophyllum minimum is closely related to our D. muscoides. Cushion plant communities of Tasmania have been likened to those found in similar habitats in New Zealand.

Abrotanella forsteroides is apparently able to grow at lower altitudes and in drier situations than other Tasmanian cushion plants (Curtis 1969; Jackson 1973). It is the only cushion plant on Mt. Wellington near Hobart, where the large bright green cushions were conspicuous along water channels on what Dr. Winifred Curtis referred to as "the back of the mountain". Elsewhere we were to see A. forsteroides as an integral part of the cushion community.

On Mt. Mawson, Mt. Field National Park at c. 1200 m, the principal cushion species were Dracophyllum minimum and Pterygopappus lawrencei associated with the herbs, Mitrasacme montana, Drosera arcturi, Oreobolus pumilio, Brachycome sp., Astelia montana, Celmisia saxifraga, and the small shrub Sprengelia incarnata. Here the first stages of the pattern of development of cushion plant communities in Tasmania as described by Jackson (1973) were evident. He says "... By maintaining a diffuse and shifting surface movement of water the bolster community maintains a cycle of bog and heath. ... Growth of plants is fastest where the supply of water at or near the surface is permanent and the plants tend to colonise and invade small streams and soaks, growing along the margins of the water courses. Active growth of cushions dams the flow of water forming small pools and tarns." At this altitude on Mt. Mawson some small tarns were present.

As cushions grow and coalesce and the central part of the plant raised up and removed from the water supply small areas may die to become a seed bed for a variety of small plants. One Tasmanian endemic, Plantago gunnii is said to be restricted to this cushion plant habitat (Curtis 1967). Eventually the centre of overgrown cushions dies out and larger shrubs, often Epacrids or conifers, become established.

On the extensive high level plateau leading to Cradle Mt. in the Lake St. Clair National Park all stages of this cycle could be seen. Over this vast area integrated cushions formed an attractive mosaic with bright green Abrotanella forsteroides, dark green Dracophyllum and Donatia (rather hard to distinguish unless plants were in flower) soft, sage green Pterygopappus lawrencei and pale grey Ewartia meridithae. Some Dracophyllum cushions had an epiphytic flora of Senecio pectinatus, Drosera spp., Mitrasacme spp., Oreobolus sp., Poa gunnii and small plants of Pterygopappus, Ewartia and the conifer Diselma archeri. I was reminded of the large vegetable sheep, Haastia pulvinaris growing in a drier climate and more arid conditions at c. 2000 m in Nelson and Marlborough. Here cushions of Haastia also support an epiphytic flora

of such herbs as Epilobium tasmanicum, Poa colensoi, Poa novae-zelandiae, Colobanthus buchanani, Raoulia grandiflora, various mosses and sometimes another cushion species, Raoulia bryoides or the shrub Hebe haastii.

On the Cradle Mountain plateau a conifer shrubland, mainly of Diselma archeri but with some Microcachrys tetragona and Microstrobos niphophilus, replaced the drying cushions. Remnants of once large cushions of Dracophyllum remained like a fairy ring around groups of well grown Diselma alongside the main track and nearby new waterways were formed to begin the cycle once more.

On Mt. Rufus in the southern part of Lake St. Clair National Park we saw an old friend, Phyllachne colensoi. The large healthy cushions dotted about a dry slope leading to the saddle below the summit were flowering profusely. The habitat of rather open vegetation, predominantly poor grassland reminded me of an induced cushion plant community described by Cockayne (1928, p.369). He describes a flat saddle connecting Mount Judah and Stone Peak in the Richardson Mountains at 1300 m altitude where "the primitive tall tussock-grassland has been burnt and is now replaced by a most unexpected type of vegetation. Dotted about everywhere are yellowish-green cushions of Phyllachne colensoi, warm brown mats of Dracophyllum uniflorum and straw coloured tussock of Festuca novae-zelandiae. In the adjacent unburnt grassland there is no trace of the Phyllachne ..." Elsewhere in Tasmania Phyllachne is reported from only two localities where apparently it does not form an essential part of any cushion plant association.

Pygmaea ciliolata var. fiordense to date only known from a small area of Hamilton Crags in the Ben Lomond Range grows in a much drier situation than even Abrotanella can tolerate. Again the cushions did not form part of any cushion community but occupied rather awkward niches in rock crevices and even in almost perpendicular rock faces - habitats not already used by other plants. The large soft cushions, in flower at the time of our visit, were in fact growing in places where we might expect to find cushion Raoulia species.

Of the three species common to New Zealand and Tasmania probably only Donatia grows extensively in similar situations in both countries.

References

- Cockayne, L. 1928: The Vegetation of New Zealand. 2nd ed.
Curtis, W.M. 1967: "The Students Flora of Tasmania" Part 3.
Curtis, W.M. 1969: The vegetation of Tasmania. In Lakin, R. (ed.) "Tasmanian Year Book", Government Printer, Hobart.
Jackson, W.D. 1973: Vegetation of the Central Plateau. In Banks, M.R. (ed.) "The lake country of Tasmania" Royal Society of Tasmania, Hobart.
Ratkowsky, D. & A. 1974: New plant discoveries in Tasmania. Australian Plants 7: 384-6.

ALIEN PLANTS IN TASMANIA

by R. Mason

The roadsides and waste places of Tasmania, especially in farming districts, have a very familiar look because so many of the introduced weeds are also introduced weeds in New Zealand :- grasses such as cocksfoot, rye-grass, and couch; legumes such as various clovers, vetches, Lotus spp., and medicks; composites such as thistles, ragwort, dandelion, catsear and yarrow; crucifers such as watercress, wartcress and twin cress, wild radish, shepherds purse and sea rocket; chickweed, mouse-eared chickweed, and sandwort; several buttercups, rib-grass, docks, Himalaya honeysuckle, and many others. In the "Students Flora of Tasmania" Winifred Curtis includes about 385 adventive dicotylous species, and of these about 310 are also known as adventives in New Zealand. For the monocotyledons the only information readily available was Rodway's "Tasmanian Flora" of 1903, which gives 30 grasses as introduced and nearly all of them are also found here. Thus the Tasmanian adventive flora is very like that of New Zealand, although certainly not as rich.

Tasmania fortunately has not the worst of our nuisance water weeds - Egeria densa, Lagarosiphon major and Ceratophyllum demersum - and although musk, Mimulus moschatus is there, monkey musk, M. guttatus is not. However, there is one widespread, conspicuous adventive water plant, a Typha which attracted attention on the way from the airport into Hobart. It was obviously not our raupo, Typha orientalis, for the heads were black. It is T. latifolia, a Northern Hemisphere species which seems to be a fairly recent arrival. We saw it commonly in the Derwent Valley, in the Huonville district and again in the north, and so far as one could judge from the bus it is far commoner than the two native Tasmanian species T. domingensis and T. orientalis.

Several of our weedy adventives are in fact native to Tasmania e.g. Cotula australis, Acaena ovina, Vittadinia triloba and Alternanthera denticulata. There are also a few species of the Northern Hemisphere that are adventive in New Zealand which we would be inclined to regard as also adventive to Tasmania, but which in fact are native there, for instance water pepper (Polygonum hydropiper), and loosestrife (Lythrum hyssopifolia) and purple loosestrife (L. salicaria). We found four rushes, Juncus bufonius, J. effusus, J. articulatus and J. bulbosus, that are Northern Hemisphere species adventive in New Zealand. There seems some difference of opinion as to whether J. bufonius and J. effusus are native in the Australian region, but J. articulatus and J. bulbosus are certainly adventives there.

Several very familiar New Zealanders were noticed in gardens, perhaps mostly in older places in the country: flax bushes, cabbage trees, the lemonwood (Pittosporum eugenioides) and Hebes.
