

ACIPHYLLA: SOME SMALLER SPECIES

NEIL O'BRIEN, ANNE ACTON-ADAMS, NEROLI O'BRIEN

During the summer of 1994-95 we sallied forth on several occasions to seek out the often-maligned *Aciphylla*. Although we collected, took notes and photographed all the *Aciphylla* we chanced upon, it was really the smaller species that held our attention.

Over the years we have noticed a tendency for the smaller species to be lumped into either *Aciphylla monroi* or *A. similis*. As both species do look somewhat alike at times, one can be forgiven for confusing them in the field. Nevertheless, there are characters which separate them. However, be warned, there are some characteristics that overlap. Furthermore, other small species, *A. montana*, and a medium-sized species *A. crenulata*, occur in our area.

From our observations in the field, several visits to the Herbarium at Lincoln and from Dawson (1979), we have compiled a table (Table 1) that should help to identify those smaller species in the field; a distribution map is also included (Fig. 1). In some instances, this map may give a clue to the identity of the plants, simply by knowing where you are (e.g. *A. similis* is not likely to be found south of the Rakaia River).

A. monroi

In CBS Journal No 28 1994, we pointed out that the New Zealand species of *Aciphylla* are separated into two groups; those with broad inflorescences (ovate to roundish in outline), and those with narrow inflorescences, (more or less lanceolate in outline). *A. monroi* belongs to the former group. Remember, the flowers of *Aciphylla* are dioecious, that is male and female flowers appear on separate plants. Generally speaking, the outline of the male and female inflorescences of any one species, is much the same. (More about flowers and flowering next time.) Male flowers are usually, visually, more eye-catching.

A. monroi belongs to the broad-headed inflorescence group. Its leaves are usually grey-green with 4-5 pairs of leaflets, which tend to be folded upwards. It is found in the drier eastern mountains of Marlborough, SE Nelson and Canterbury within the range of 1100 - 3000 m, and thrives in the alpine grasslands, herbfields and even on shingle and rock outcrops.

A. similis

As the name implies, this plant is not unlike *A. monroi*. The leaves are yellow-green and the leaflets which lie more or less in one plane have 6-7, sometimes more, pairs of leaflets. The inflorescence is broad. This plant thrives best in the wetter areas along or

close to the main divide, from the Two Thumb Range to north of the Lewis Pass, in alpine grasslands.

A. montana

This species was described as a distinct entity by Dawson (1979). It consists of two distinct varieties: *A. montana* var. *montana*. This form is usually larger than *A. similis* or *A. monroi*. It has yellow-green leaves, not usually in one plane, and these have three or occasionally four pairs of leaflets. The narrow inflorescence readily distinguishes this species from either *A. similis* or *A. monroi*. The bright yellow, elongated male flower heads seen in January (Summer Camp 1995), at Mt Hutt, clearly showed the difference. The central mountains of the South Island, east of the main divide, from Mt Hutt to near Wanaka are the home of *A. montana*. It favours tussock grasslands and sometimes rock outcrops and stabilised screes.

A. montana var. *gracilis* (formerly *A. gracilis*).

A quick glance at Fig. 1 will show that this form is of fairly limited distribution. It is smaller than var. *montana*, usually with two pairs of leaflets. Tall tussock grasslands of the eastern ranges of South Canterbury and North Otago are its habitat.

While searching the Kirkliston Range recently for var. *gracilis* we found hybrids of *A. aurea* and *A. montana*. Apparently, disturbance over the last 100 years or so has encouraged *A. montana* to colonise new habitats at lower altitudes. Likewise, *A. aurea* has extended its range uphill, giving rise to hybrids along the boundary. Hybrids such as these are not uncommon. Similar ones have been noted by Hugh Wilson (pers comm.), in the Mt Cook National Park.

A. crenulata

Another interesting *Aciphylla* inhabiting the wetter mountains from Mt Arthur to Fiordland, is *A. crenulata*. Although it is fairly common, it is easily overlooked among the tussocks. The leaves which are up to 15 cm long and about 5 mm wide, tend to be flaccid. Hares, deer and chamois are inclined to browse them. Some descriptions refer to a red midrib; so far we have seen only yellow-green leaves with bright orange mid-ribs. The flower heads, which appear from December to January, are of the narrow type. The inflorescences, stem and head, are about 40 cm long in males, and up to about 60 cm in females. Some poor specimens were seen in the Kelly Range but those flowering in the upper Otira Valley in mid January were, indeed, handsome plants.

The Otira Valley, in a good flowering year, such as the summer of 1994-95, is a wonderful place to visit. Besides *A. crenulata*, there were large areas of yellow-flowering *A. similis* carpeting the upper valley slopes. Here we also saw massive plants of *A. horrida*, whose very large flower heads stood above the scrub and tussock.

Table 1 Comparison of small Canterbury *Aciphylla* species

<i>A. monroi</i>	<i>A. similis</i>	<i>A. montana</i> var. <i>montana</i>	<i>A. montana</i> var. <i>gracilis</i>	<i>A. crenulata</i>
Rosettes: to 20 cm diameter, groups of 10 or more.	Rosettes: to 20 cm diameter, groups of 10 or more.	Rosettes: to c. 25 cm diameter, in groups of c. 25. per plant.	Rosettes: to c. 5 per plant, usually a smaller plant than var. <i>montana</i> .	Forms lax, slender tufts to 60 cm tall.
Leaves: coriaceous, grey-green (sometimes yellowish) to 18 cm long.	Leaves: coriaceous, yellow-green to 23 cm long	Leaves: coriaceous, yellow-green, to 30 cm long.	Leaves: to 230 mm.	Leaves: long, flexible and flaccid, to 15 cm x 5 mm; midrib, bright orange to red; margins thickened, finely crenulate, sharp-pointed. Sheaths: broad and thin.
Leaflets: usually 4-5 pairs folded upwards.	Leaflets: usually 6-7 pairs or more, more or less in one plane, spine at tip c. 2 mm.	Leaflets: usually 3 (4) pairs, mostly not in one plane.	Leaflets: usually 2 pairs.	Primary Pinnae: usually (1)-2-3-(4) pairs of leaflets, linear 5 - 15 cm x 2 - 5 mm.
Stipules: short to almost as long as petiole, to 30 x 0.6 mm long.	Stipules: to 40 x 1 mm.	Stipules: from very short to as long as petiole ... to 70 x 1 mm.		Stipules: slender spines.
Petiole: to 40 x 2 mm, flat to convex above.	Petiole: to 80 x 4 mm, flat to concave above.	Petiole: 90 x 3 mm, more or less convex above.		
Lamina: more or less rhombic in outline.	Lamina: more or less rhombic in outline.	Lamina: more or less obtriangular in outline.		
Inflorescence: broad type (see O'Brien et al., 1994)	Inflorescence: broad type.	Inflorescence: narrow type.	Inflorescence: to 400 mm high.	Inflorescence: narrow type
Female to 300 mm long: stem 200 mm; head 80 x 40 mm, ovate in outline.	Female to 400 mm long; stem 300 mm x 5.5 mm, yellow-brown; head 100 x 90 mm, obdeltate in outline.	Female to 600 mm long, stem c. 490 x 11 mm, yellow-orange; head to 140 x 30 mm, lanceolate in outline.		Female to 60 cm long, elongated. Male elongated, very slender, more open than female, 10 - 30 - (40) cm long.
Male to 240 mm long: stem 150 mm, green-brown; head 90 mm long, ovate to orbicular in outline.	Male: to 300 mm long, stem 170 x 4 mm, head 130 x 90 mm, ovate in outline.	Male: to 520 mm long, stem 270 x 12 mm, yellow-orange; head to 260 x 10 mm.		
Distribution and Habitat: Marlborough, SE Nelson and Canterbury in drier eastern mountains, 1100 - 3000 m altitude. Alpine grassland, herbfields, shingle and rock outcrops.	Distribution and Habitat: along Main Divide from Two Thumb Range to north of Lewis Pass, 900 - 1100 m in alpine grasslands. Note: Range considerably reduced from that given by authors prior to 1979 (Dawson 1979).	Distribution and Habitat: central South Island mountains near and east of the Main Divide, from Mt Hutt to Mt Cardrona, 1400 - 2000 m, tall tussock grasslands, sometimes rock outcrops and stabilised scree.	Distribution and Habitat: South Canterbury and North Otago, mostly east of var. <i>montana</i> (e.g. Kirkliston Range), tall tussock grasslands.	Distribution and Habitat: widespread in mainly wetter subalpine areas, near or west of the Main Divide, over most of South Island, Mt Arthur to Mt Aspiring. Often hidden among the tussocks.

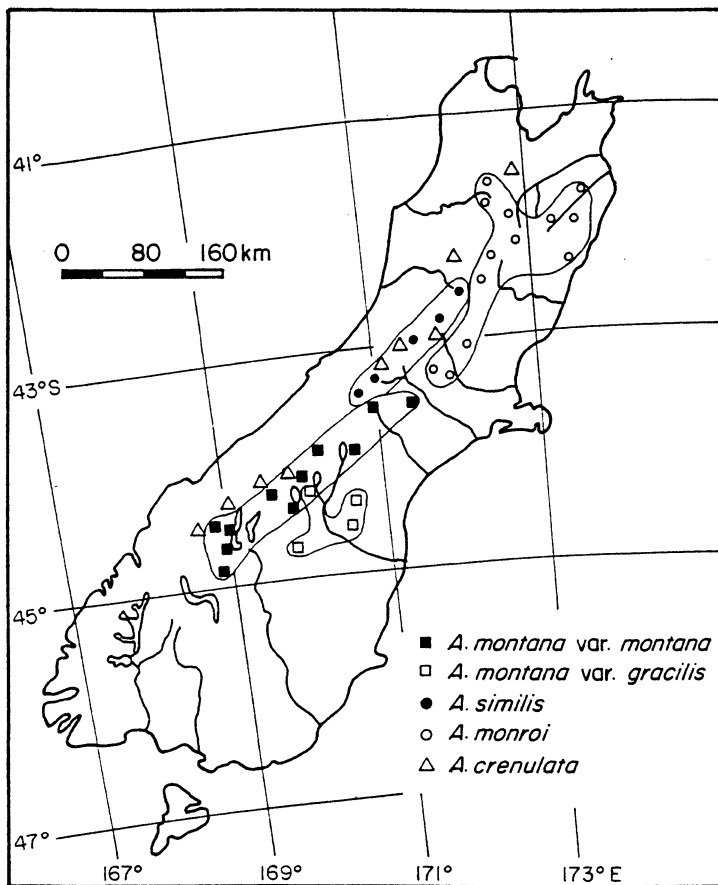


Fig. 1 Localities for *Aciphylla* species considered in the text

This coming summer, 1995-96, we again hope to work among our prickly friends where ever they are to be found. As with other interests, the more we become acquainted with this challenging genus, the more secrets there are to discover. This, of course, may only be a thinly disguised excuse to spend more time in alpine areas. However, we may never see *Aciphylla* as did the early settlers to this country.

1878 ... "on top (Hakataramea Pass) they rested their horses. Alpheus Hayes gazed at ... a land of rolling downs with mile upon mile of golden tussocks and yellow-green sharp thickets of speargrass or taramea ..."

"From the Toss of a Coin"

M. Anna Hayes

(haka = a dance, taramea = Maori name for speargrass, especially *A. aurea*)

ACKNOWLEDGEMENTS

We wish to thank Bryony Macmillan, National Herbarium, Lincoln, Dr J. Dawson, and Hugh Wilson for their help and encouragement.

REFERENCES

- Allan, H.H. 1961. *Flora of New Zealand*. Vol I, Government Printer, Wellington
- Dawson, J.W. 1979. *Aciphylla montana*. Armstrong, *A. lecomtei*, sp. nov. and related species. *N.Z. Journal of Botany* 17: 339-51
- O'Brien, N., Acton-Adams, A., & O'Brien, N. 1994. *Aciphylla*: an introduction. *Canterbury Botanical Society Journal* 28: 29-31
- Wilson, H.D. 1978. *Wild Plants of Mount Cook National Park*. Field Guide Publications, Christchurch