ACIPHYLLA : AN INTRODUCTION

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

Aciphylla, wild Spaniard, speargrass - call it what you will - there can be no doubt the genus is one of the most interesting and spectacular in our flora. Where would you find anything quite so uniquely magnificent as the hundreds of flowering *Aciphylla aurea* seen on the tussocky slopes of the Pisa Range, Summer Camp 1993?

Early explorers were not so lavish in their praise of *Aciphylla* - "Well-armed opponents, impassable to man and beast". It seems both Polynesian and European alike torched vast tracts of these tussocklands to kill the *Aciphylla* and gain access to the back country. However, the Maori people prized, as an emollient, the aromatic gum taramea, which is extracted from the leaves of some *Aciphylla* species.

Formidable though they are, *Aciphylla* species have always been a source of interest to botanists and naturalists. There are about 40 species in New Zealand ranging in size from the giant *A. scott-thomsonii* to the diminutive *A. monroi*. The New Zealand species are all endemic. There are 2 to 3 species in Australia.

As a member of the carrot family, Apiaceae, the overall layout of *Aciphylla* is that of a stout rootstock, crowned with one or more rosettes of leaves. The leaves of most species are reduced to stout leathery spines; some more so than others. *A. dieffenbachii* of the Chatham Islands is soft and may be handled with impunity. This suggests that an ancestral *Aciphylla* may have had "normal" leaves similar to those of other members of the family, e.g. *Anisotome* and *Gingidia*. In fact some hybrids of *Aciphylla* spp. with *Anisotome* spp. are known:

A. crenulata x *Anisotome haastii* Mt Cook (H.D. Wilson)
A. dissecta x *Anisotome aromatica* Mt Hector (A.P. Druce)
A. divisa x *Anisotome haastii* Mt Cook (H.D. Wilson)

Early botanists proposed that the bayonet-like leaves and spiny flower stems were a protection against moa browsing and this may be correct. However, we have all seen how *Aciphylla* is often extensively browsed by hares, deer, sheep and rabbits. In fact, introduced animals have drastically reduced some populations to the point of near extinction. Another possibility is that *Aciphylla* developed spininess as a protection against drought. To prove that its xeromorphic leaves are truly xerophytic, however, experiments on their rate of water loss would be needed.

The leaves, mostly all compound, have broad-sheathing bases, often surmounted by leaf-like stipules and one- to three- pinnate leaves (Fig 1.). Stipules, where present, are an important aid to identification. They may be absent, very much reduced as in *A. ferox* or large and leafy as in *A. aurea*. Where plants grow in harsh dry conditions the overall colour tends toward orange-bronze; those favouring a moister, more sheltered habitat often have glaucous foliage.

Flowers are borne on stout stems arising from the centre of the rosettes. The many small umbels of flowers are either carried on broad spreading branchlets or on tall spires. On this basis the genus can be separated into two sections: (a) Paniculatae, in which inflorescences have broad, compound umbels with spreading stems, e.g. *A. similis*,; (b) Elongatae. These are the plants with tall spires also bearing umbels of flowers, e.g. *A. ferox*. These divisions may assist with identification.

The yellowish flowers are protected by spiny bracts that look very similar to the leaves. Like so many of our native plants, male and female flowers are usually found on separate plants (i.e. they are dioecious). The most spectacular are the bright yellow male flowers which soon wither and die as the pollen is shed. After fertilisation, the female flower stems continue to grow as the brown winged fruits ripen.

As we mentioned earlier there are about 40 species of *Aciphylla*. Allan (1961) recognises 39 species. Since then researchers have been busy in the field.

1. New species have been described, e.g. *A. lecomtei.*

2. Some species have been included with others. *A. hectorii* now includes *A. poppelwellii.*

3. A few are, or may be, hybrids. *A. latibracteata* is thought to be *A. horrida* x *A. similis.*

4. Others have been raised to specific rank. *A. cartilaginea* from *A. traillii* var. *cartilaginea.*

5. *A. gracilis* has been reduced to varietal status to become *A. montana* var. *gracilis.*

In a future article we intend to discuss some of the more common *Aciphylla* species in our region, with notes on identification, distribution and habitat of species in this interesting genus.

REFERENCES

Allan, H.H. 1961. *Flora of New Zealand*, Vol 1. Government Printer, Wellington

Mark, A.F., Adams, N.N. 1973. *New Zealand Alpine Plants*. A.H. & A.W. Reed, Wellington

Laing, R.M., Blackwell, E.W. 1964; *Plants of New Zealand*, 7th edition (revised), Whitcombe & Tombs, Christchurch.

Moore, L.B., Irwin, J.B. 1978. *The Oxford Book of New Zealand Plants*. Oxford University Press

Dawson, J.W., Le Comte, J.R. 1978. Research on Aciphylla - A Progress Report. *Tuatara* 23(2)

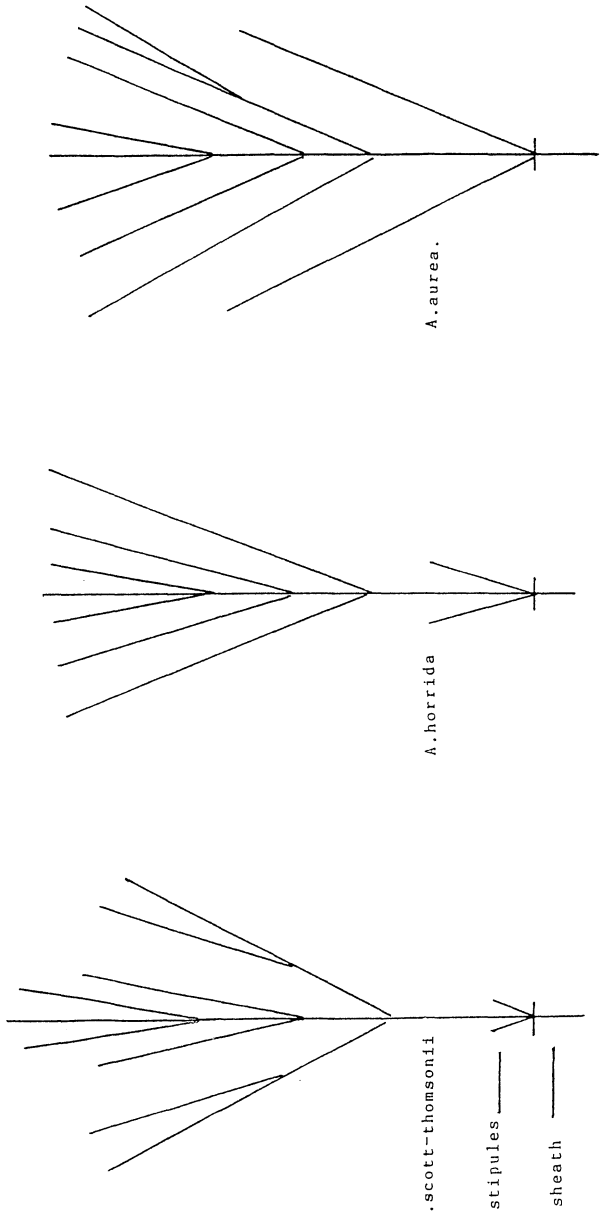

Fig. 1. Diagrammatic plan of leaves of three large *Aciphylla* species. Note the comparative lengths of the stipules, which are diagnostic features for identification. The pinnae above the stipules are ordinary leaflets.