

CLANDESTINE PLANTS AND THEIR GHOSTS

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One of the best-disguised plants in our flora is *Muehlenbeckia ephedroides*. Its grey, sparsely-leaved stems, resembling nothing more than dead twigs, lie flat on shingle or rock, often in coastal sites such as Birdling's Flat and the Rakaia and Rangitata River Mouths. The specific name, meaning "like *Ephedra*" is very appropriate, because it looks just like the strange, small gymnosperm, *Ephedra*, which I have seen in American deserts. Did the cryptic appearance of *M. ephedroides* develop to divert browsing by moas? Of course it is also xeromorphic and reduced leaf size and grey colour could be adaptive in a plant of hot, dry, well-drained habitats to conserve water and screen out radiation. *M. ephedroides* also occurs in some inland sites in Canterbury (Table 1).

One interesting feature is that *M. ephedroides* sometimes hybridizes with the bushy, broader-leaved half-shrub, half-vine, *M. complexa*. The hybrids are upright bushes up to a metre tall with narrow leaves, shaped rather like those of *M. ephedroides* but wider (Fig.1). Although David Lloyd found a hybrid bush near both parents at Amberley Beach, in other places where the hybrids occur I have searched in vain for *M. ephedroides*. After an episode of hybridization some time in the past, it seems to have become locally extinct. so the hybrids are ghosts of its former presence. Some of its genes persist in the hybrids, which are able to maintain themselves by vigorous vegetative growth.

It would be useful to know of other localities for *M. ephedroides* and the hybrid *M. ephedroides* x *M. complexa*.

Table 1

A. Inland locations for *Muehlenbeckia ephedroides* in Canterbury*

	Location	Habitat	Altitude	Collector
CANU Herbarium No. (if available)				
35365	Culverden, North Canterbury	short, open grassland	170m	D.A. Norton
2672	Upper Waipara R., North Canterbury	river flood- plain	c.215m	C.J. Burrows
31180	Okuku R., North Canterbury	shingly grassed area, riverbank	100m	G. Brownlie
24146	Harewood, N. end of airport	dry grassland	30m	A.T. Dobson

	Location	Habitat	Altitude	Collector
35393	Dagnum, Burnt Hill, North Canterbury	dry grassland on low river terrace	190m	D.A. Norton & J.M. Lord
	Poulter R., near bridge to Mount White, Waimakariri R.	river flood-plain	470m	C.J. Burrows
	Rakaia Gorge	basalt rock outcrop	335m	C.J. Burrows
19238	Coleridge Downs, Rakaia R.	greywacke rock outcrop	440m	C.J. Burrows
	Cass R., near Lake Alexandrina, McKenzie Country	river flood-plain	730m	C.J. Burrows

B. Locations for hybrids of *M. ephedroides* x *M. complexa* in Canterbury

10264	Amberley Beach, North Canterbury	gravel (both parents nearby)	c.5m	D.G. Lloyd
	Bush Stream, Mount Binser, Waimakariri R.	dry gravel bank of road cutting	580m	C.J. Burrows
	Near Terrible Gully, Mount Hutt Range, S. side of Rakaia R.	gravel cliff	410m	C.J. Burrows
36428	Potts R. cutting, Rangitata R.	patch of stones beneath gravel cliff	550m	C.J. Burrows
10266	Pukaki R. about 1km below Lake Pukaki, McKenzie Country	river terrace	c.490m	D.G. Lloyd

* the specimens are in the University of Canterbury Plant and Microbial Sciences Department collection.

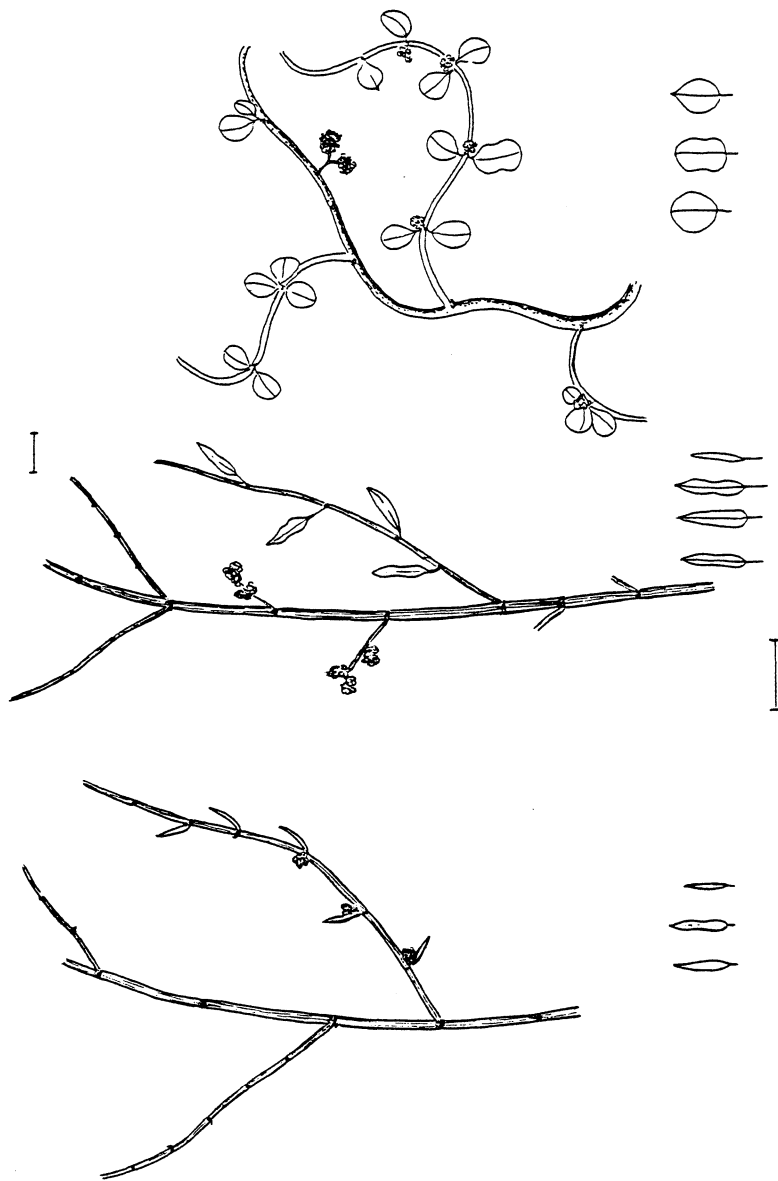


Fig 1. Diagrams of *Muehlenbeckia ephedroides* (left); *M. ephedroides* x *M. complexa* (middle); *M. complexa* (right). The scale bars, 1 cm long, are for the stems with leaves and flower clusters (top) and leaves (bottom).