

RECORDS OF MIRO (*PODOCARPUS FERRUGINEUS*) AND OTHER SPECIES
FROM INLAND CANTERBURY, NEW ZEALAND (NOTE)

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ABSTRACT

A small stand of miro (*Podocarpus ferrugineus*) is recorded near the confluence of the Rakaia and Wilberforce rivers, inland Canterbury, New Zealand. Locations of matai (*Podocarpus spicatus*) and southern rata (*Metrosideros umbellata*) in the Wilberforce valley are noted. Implications of these finds are outlined with respect to past climates and forests of inland Canterbury.

The only published accounts to date of living miro (*Podocarpus ferrugineus*) trees in Canterbury are from Wandle Bush near Waiiau (Lintott and Burrows 1973) and several sites on Banks Peninsula (Molloy 1976). In June 1978, a small stand of miro was found at Mt. Algidus, near the confluence of the Wilberforce and Rakaia rivers (NZMS 1 S65/9, 878907) (Table 1, Fig. 1). This stand covers an area of approximately 5-6 ha, and contains 34 mature, living trees plus an additional 7 dead trees that were probably miro. The dbh of most of the trees is greater than 0.40 m, the exception being a pole of 0.18 m. In addition a seedling about 1.5 m high was recorded, and a total of 40 small seedlings less than 0.1 m high were seen. The miro stand is on an east-facing slope, 650-750 m a.s.l. and is situated toward the edge of a mountain beech (*Nothofagus solandri*, var. *cliffortioides*) forest. Miro is sub-dominant to mountain beech, its crowns being below the mountain beech canopy. Other trees and shrubs present include mountain totara (*Podocarpus hallii*), lancewood (*Pseudopanax crassifolius*), marble leaf (*Carpodetus serratus*), wineberry (*Aristotelia serrata*), pepper-leaf (*Pseudowintera colorata*), mapou (*Myrsine australis*), itself a new recording for the area, and two matai (*Podocarpus spicatus*) trees.

The existing stands in Canterbury are probably relics of former, more extensive forest containing miro as miro is believed to be an important indicator of moist, mild climate (Lintott and Burrows 1973). Its presence at Mt.

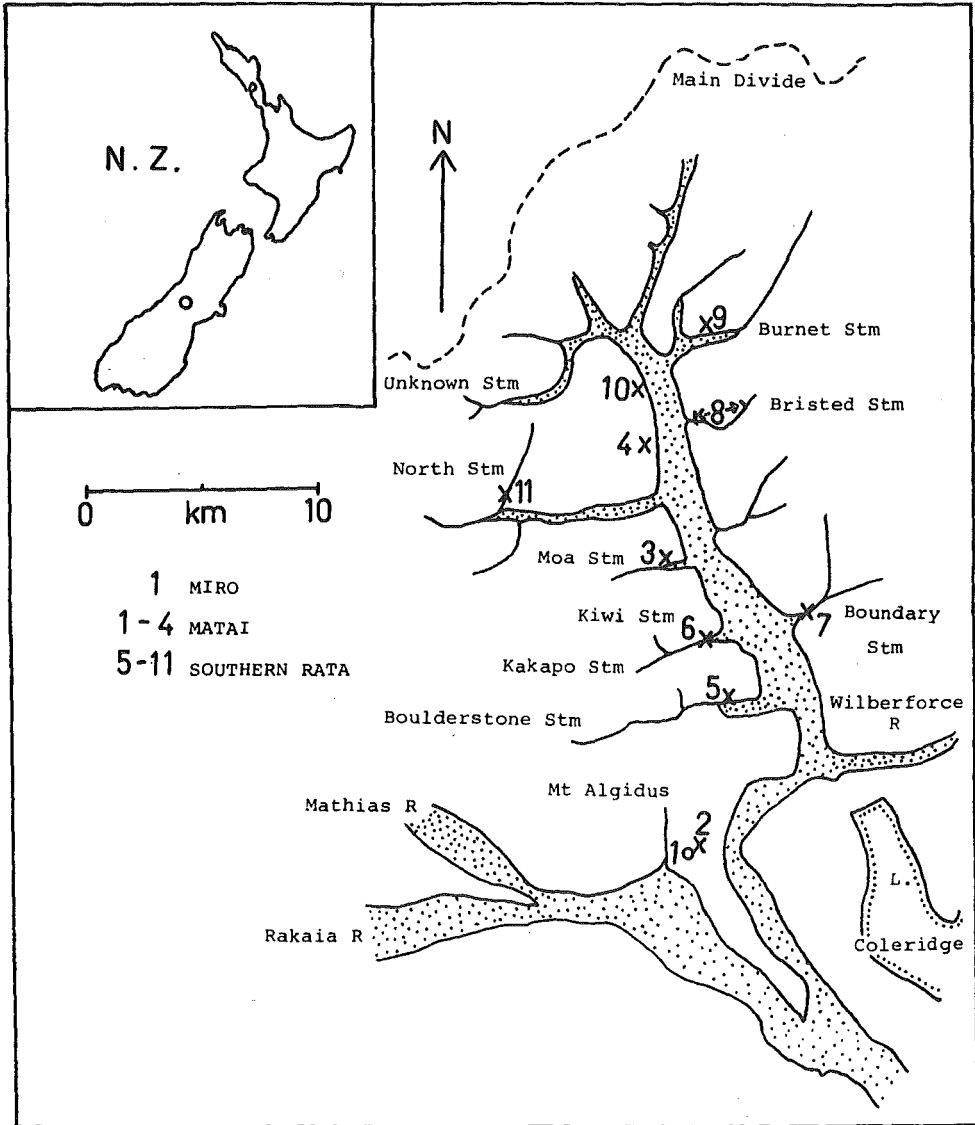


Fig. 1 Localities of miro, matai and southern rata in the Wilberforce Valley, Inland Canterbury.

Algidus suggests that not long ago climates of inland Canterbury were milder than at present. It is interesting to note that a single miro tree has recently been discovered near Mt. Oxford, at approximately 550 m a.s.l. (New Zealand

Forest Service 1978). The upper altitudinal limit of miro in North Westland is about 450-525 m a.s.l., varying with aspect and soil type (S. June, pers. comm.), and those at Wandle Bush are at 450 m (Lintott and Burrows 1973). The miro at Mt. Algidus and Oxford exceed these altitudes.

Matai has been known at Mt. Algidus for many years, a single "veteran" tree being noted there by Holloway (1954). In addition to the two matai trees in the miro stand, five further matais were located about 1 km away (Fig. 1, Table 1). The mountain beech forest surrounding these matai has been disturbed by logging, and in places is largely taken over by broom (*Cytisus scoparius*), blackberry (*Rubus fruticosus*), and wineberry. None of the additional matai trees recorded here could be regarded as "veteran". Other single matai trees were found at two locations in the Wilberforce Valley nearer the main divide (Fig. 1, Table 1), and further finds could be predicted in neighbouring areas.

The only previously published account of the flora of the Wilberforce Valley is that of Burrows (1977). He recorded the presence of southern rata (*Metrosideros umbellata*) with kamahi (*Weinmannia racemosa*) (associated with mountain beech, C.J. Burrows, pers. comm.) in the Kiwi and Moa streams. However, other small disjunct stands of southern rata are also present throughout the Wilberforce Valley (see Fig. 1 and Table 1 for details). Most of these sites are on rocky outcrops or bluffs, which suggests that southern rata is largely confined to such sites by competition with mountain beech. The New Zealand Forest Service (1978) also found southern rata on four similar disjunct sites in mountain beech forests near Mt. Oxford (see Table 1 for details). These scattered recordings of southern rata in Canterbury along with those noted by Burrows (1969, 1977) also suggest that this species was once more widespread in inland Canterbury.

Further forest and scrub species in the Wilberforce Valley not recorded by Burrows (1977) include: *Clematis australis*, *Elytranthe flavida*, *Gastrodia cunninghamii*, *Myrsine australis*, *Nertera dichondraefolia*, *Podocarpus ferrugineus* in the mountain beech forest, and *Cassinia fulvida* in all the forest types of the valley.

Voucher specimens of miro and matai from the area have been deposited in the herbarium of the Botany Department, University of Canterbury.

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TABLE 1. THE DISTRIBUTION OF MIRO, MATAI AND SOUTHERN RATA IN THE WILBERFORCE VALLEY, WITH SOME ADDITIONAL LOCALITIES IN THE MT. OXFORD AREA.

SPECIES	SITE NUMBER (see Fig. 1)	LOCATION	MAP REFERENCE (NZMS 1)	NOTES
miro	1	Mt. Algidus	S 65/9 878907	5-6 ha
"	-	West Coopers Ck. Mt. Oxford	S 67/7 491907	single tree*
matai	1	Mt. Algidus	S 65/9 878907	2 trees
"	2	Mt. Algidus	S 65/9 886908	several trees
"	3	Kiwi Stm.	S 65/6 859041	single veteran tree **
"	4	Between Moa Stm. and Logans Mistake	S 65/5 841099	single veteran tree
southern rata	5	Boulderstone Stm.	S 65/9 883974	several trees and shrubs on rocky bluff
"	6	Kakapo Stm.	S 65/6 873001	numerous trees and shrubs on rocky face
"	7	Boundary Stm.	S 65/6 925018	several trees and shrubs on rocky bluff**
"	8	Bristed Stm.	-	common throughout
"	9	Burnet Stm.	S 65/3 863151	several trees and shrubs on bouldery slope
"	10	Logans Mistake	S 65/2 839120	several trees and shrubs on bouldery slope
"	11	North Stm.	S 65/5 773063	on rock faces along the river
"	-	Eyre River, Mt. Oxford	S 67/7 469921	several trees and shrubs on rocky outcrop*
"	-	West Coopers Ck. Mt. Oxford	S 67/7 498919	numerous trees and shrubs on rocky outcrops
"	-	West Coopers Ck. Mt. Oxford	S 67/7 506917	about 100 trees and shrubs on rocky bluffs
"	-	East Coopers Ck. Mt. Oxford	S 67/7 521913	few shrubs on rock faces above river*

* from New Zealand Forest Service (1978)

** pers. comm. S. Begg, L. Crozier, A. Evison.

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