Southern Rata in the Tararuas

A. P. Druce, Wellington

THE distribution of southern rata *(Metrosideros umbellata)* in the North Island is given by Cheesman in the 'Manual of the New Zealand Flora' as 'North Island: In hilly or mountain districts from Whangarei Heads and the Great and Little Barrier Islands southwards, but often local and absent from wide districts'. The only records in the North Island south of the Barrier Islands that I have been able to trace are from Moehau, Pirongia and the Tararua Mts. It would appear, then, that this tree has a very disjunct distribution in the North Island, being unknown between latitude 38° and latitude 40°30′.

In Zotov, Elder and Beddie's account of the distribution of plants in the Tararua Mountains (1938: *Trans. Roy. Soc. N.Z. 68:* 290-310) southern rata is listed as *'M. umbellata* Cav. (?) var.' and its distribution given as lower warm temperate belt, northern, eastern and southern Tararua areas, rare; all three authors are recorded as having seen it. Mr. Beddie in his article on root behaviour in *Metrosideros* (1953: *Well. Bot. Soc. Bull. 26*) says *'M. umbellata* is extremely rare in the Tararuas, the only representatives known to the writer being this tree [growing in a small clearing at about 600 metres elevation near Mt. Renata on Francis Ridge, in the Southern Tararuas] and a few smaller plants near the edge of the same clearing. The leaves are larger than is usual in *M. umbellata* and it seems to be a rather distinct form'. Mr. Elder has told me the only place he saw southern rata was on the Maymorn ridge (southern Tararuas, approx. grid. ref. 26701540). He has also shown me a photograph of a plant from this locality. Mr. Zotov has informed me that the plants he recorded as southern rata were actually terrestrial northern rata. It appears, therefore, that southern rata had really only been seen in the southern Tararua area.

The first time I saw southern rata in the Tararuas—recognized by the leaves on the ground—was in July, 1958, when Mr. Atkinson and I were coming down Renata ridge. At about 1,900 ft. in silver beech-rimu forest (grid. ref. 27291568) there was a solitary tree with a tall straight trunk about 15 in. diam. It was growing close beside a northern rata and was terrestrial, whereas the latter was attached to a large red beech.

The next time was in November of the same year when we again recognized leaves on the ground—this time at about 1,800 ft. in hard beech-silver beech forest on the track half a mile from Dobson's hut (grid. ref. 27751507). Seven trees were seen, one of which I clearly remembered having passed on a previous occasion. Many

botanists and a host of trampers must have seen this tree, though without recognizing it, for it has a diameter of over 4 ft. and from a short trunk many thick branches reach upwards to an estimated height of 55 ft.

Then in January, 1959, I saw another solitary tree when Piers Hunt and I were going along an unmapped ridge, north of Pukeruru and south-west of Renata (approx. grid. ref. 27001575). The tree was growing in silver beech forest at about 1,900 ft. Shortly afterwards Mr. Elder reported seeing southern rata west of Ngapuketurua in the northern Tararuas (grid. ref. 29841982), and Mr. D. A. Franklyn reported seeing it in the Tokomaru V. (approx. grid. ref. 30302110).

As the Dobson's track locality is easily reached I decided it would be worth having a good look there for more southern rata. So one day recently Geoffrey Park, John and Michael Christeller, Alison Druce and I combed the area and between us found 29 trees. Ten of these were dead but still standing. The diameter of each tree was measured and its height estimated with the following results:

	10 DEAD TREES		19 LIVING TREES	
diam.	*no.*	*height*	*no.*	*height*
Under 4 in	0	—	1	20 ft.
4-12 in.	3	25-30 ft.	4	20-40 ft.
12-20 in	6	40-65 ft.	5	40-50 ft.
20-30 in.	1	35 ft.	6	40-60 ft.
Over 30 in.	0	—	3	55-60 ft.

No seedlings were seen and only the one sapling (diam. 2 in). Of the 29 trees all but three were on the exposed north-western side of the ridge where they were grouped in an area about 200 yds across th slope by 100 yds down the slope, with only a very few trees outside that area. The canopy of the forest here appears to have more gaps in it and to be more irregular in height than adjacent areas without southern rata. The commonest canopy trees are hard beech and silver beech; amongst these are scattered the rata, several rimu and a very few thin-barked or Hall's totara. The most abundant second-layer tree is kamahi and the main shrubs are *Leucopogon fasciculatus, Coprosma colensoi* and *C. banksii.* The forest floor is well covered with tussocks of *Danthonia flavescens* var. *cheesemanii* and *Astelia solandri,* patches of *Sticherus (Gleichenia) cunninghamii* and *Blechnum discolor,* and carpets of kidney fern, other filmy ferns and *Blechnum minus.*

While we were searching for southern rata in this forest it became apparent that the width of the leaves varied from tree to tree, the narrowest (narrow lanceolate) being only about half as wide as the broadest (broadly lanceolate). In addition some of the leaves on shoots arising from near the base of several trees were different from the canopy leaves, sometimes resembling in shape those of northern

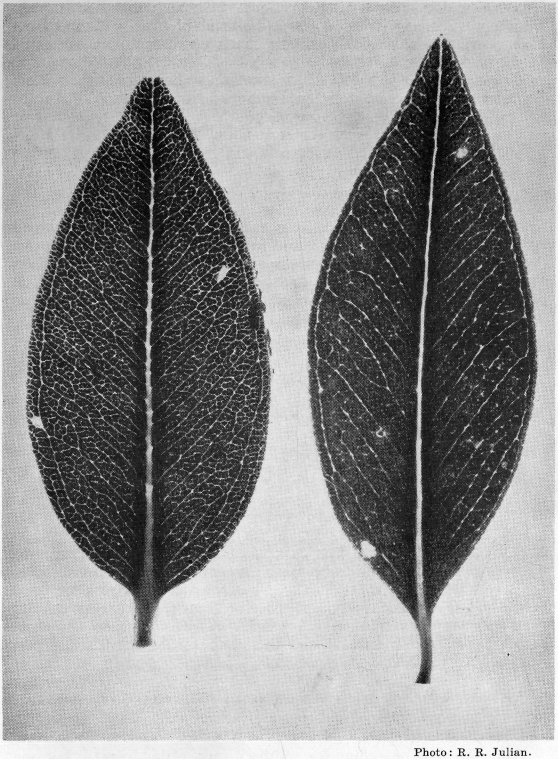

Photo: R. R. Julian.

The under-surfaces of leaves of northern rata (left) and southern rata (right) viewed by transmitted light to show the difference in venation. Note also the difference in the leaf tips, the slight notch being characteristic of northern rata. Both leaves were collected beside the track to Dobson's hut, southern Tararua Mountains. (2½ times actual size).

rata growing in similar positions, i.e., partial shade. In view of this variation in shape it is safest, and easiest for that matter, to distinguish southern rata from northern rata by the difference in venation seen on the under-surface of the leaf. For the most part in southern rata only the main veins are seen, whereas in northern rata copious net veins are visible. I have to thank Mr. R. R. Julian of the Soil Bureau for the photograph reproduced opposite which shows the striking difference in venation in the two species.

No doubt southern rata will be found elsewhere in the Tararuas and it may even turn out to be not as rare as it appears to be at present. On the other hand the large proportion of dead trees and the near absence of juveniles on Dobson's ridge suggests that the species may soon become extinct locally. The distribution as known at present may be summarized as follows: upper warm (not lower) temperate belt, i.e. 1,000-2,000 ft; northern Tararuas—Takomaru V. and near Ngapuketurua, southern Tararus—near Dobson's hut and in four localities in the catchment of the Renata Stream (a tributary of the Hutt R.). Specimens in the Botany Division herbarium: Beddie, 65567, 69381; Druce, 86414.

Hard Beech in the Tararuas

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HARD beech *(Nothofagus truncata)* was not recorded from the northern and western parts of the Tararua Mountains by Zotov, Elder and Beddie, but is now known to occur in a few places. A short distance upstream from the hut in the south branch of the Ohau R. towards Girdlestone Saddle, where the track goes up to avoid a waterfall, there is a stand. The trees are growing on a sunny slope with a rather thin covering of soil on rock. This is the only occurrence of hard beech known to the writer in the Ohau V. The species occurs in the Otaki V. near the Waitewaewae forks and may occur further up this valley. It has not been seen by the writer in the Mangahao V. or elsewhere in the northern Tararuas, though Mr. Poole found a few trees associated with black beech *(Nothofagus solandri* var. *solandri)* a few miles south of the Manawatu Gorge. Can any reader supply further information on the occurrence of hard beach in the area?

[Ed. note: Mrs. F. C. Duguid some years ago found hard beech on a steep river cliff in Kimberley Reserve not far from Levin.]

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