

Dark red loamy soils over purplish red rocks occur in some narrow strips of hill country east of the Hutt Valley and may be seen in cuttings on the Rimutaka Hill road. These soils are derived from lenses of volcanic lava injected into the greywacke bedrock and are rich in plant nutrients.

The correlation of soil pattern with climate described above is also expressed in a similar manner between the native vegetation and the soils: coastal broad-leaved forest on the Paremata-Terawhiti soils, broadleaved and podocarp forest on the Korokoro-Makara soils, podocarp and beech forest on the Akatarawa-Ruahine soils, beech and podocarp forest on the Taita-Tawai soils, beech and kamahi forest on the Renata-Rimutaka soils. Under broadleaved trees such as kohekohe and tawa, the rapid decomposition of litter assisted the maintenance of nutrients and promoted aggregation in the soils; whereas under the podocarps, rimu and miro, or the hard beech, silver beech or kamahi, the slow decomposition of litter led to rapid depletion of nutrients and to weak development of structure in the topsoil.

Curious Growth of Tawa

Frances Duguid¹

A tawa tree in the Papaitonga bush on a low sandstone bank was seen to have fallen over to an angle of about 30° below horizontal, with the roots still clinging to the bank, at a point c. 1.5 m above the level of the swamp in the gully beside it. Since it had been thrown, the tree had grown six new vertical trunks, having the following circumferences, commencing with the new trunk nearest the roots: 95 cm, 73 cm, 66 cm, 62 cm, 21 cm, and 27 cm. It will be seen by the foregoing that instead of progressively decreasing in size, the last trunk was larger than the preceding one. It was noted that the original trunk had fallen into a shallow drain at the edge of the swamp, and the increased size of the new upright trunk beyond this suggests that roots had grown from the underside of the prone trunk, giving the new trunk the benefit of additional moisture and nutrient. The tip of the old trunk extended further, and was not traceable through the thick undergrowth, but there did not seem to be any further vertical growth. (Seen 14 July 1973.)

Tawa beside Lake Kopureherehe (seen July 1972) looked as if two trees had become grafted together by their roots above ground. Autografts of tawa branches are by no means uncommon in the Arapaepae hills (seen c. 1970).

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