Cordyline indivisa in the Hamilton Basin

Peter de Lange

Toi/mountain cabbage tree (*Cordyline indivisa*) is usually equated with montane conditions in the northern half of the North Island. Certainly, from about Hamilton north it is - as a rule - only to be in the higher mountain ranges, such as Mt Pirongia, Karioi, Te Aroha, Moehau, and on Kohukohunui - the local high point of the Hunua Ranges (McCraith & Carlaw (2001) and references therein). On these peaks and local high points it is most usually found in situations above 500 m. There are some exceptions to this pattern though. For example, in the Awaroa Valley, just south of the Kawhia Harbour, *C. indivisa* is a local component of the vegetation associated with the karst topography of that area. A habitat it occupies along with other (in the Waikato at least) species more typical of "montane" areas such as *Ixerba brexioides*, *Pseudowintera axillaris*, *P. colorata*, and *Quintina serrata* because I suspect, the various dolines (tomo), uvala, and polje provide the necessary relief to induce the cool conditions these species flourish under. Accordingly within these karst habitats *C. indivisa* can sometimes grow at altitudes between 100 and 300 m a.s.l. (e.g., AK 222937) -much lower elevations than is usual at this latitude for the species.

The same is also true further east within the Hamilton Basin. Here during 1985 I discovered a single 3 m tall *C. indivisa* growing within a deep gully system under crack willow (*Salix fragilis*), grey willow (*S. cinerea*), kahikatea (*Dacrycarpus dacrydioides*), in association with a single *Pseudowintera colorata*, scattered *P. axillaris*, and *Polystichum vestitum*. This site at 15 m a.s.l., must surely rate as one of the lowest altitudes occupied by this species within the northern half of the North Island. As no herbarium voucher was gathered at the time I set out in 1987 to obtain a suitable specimen. However, this proved impossible, for the specimen had apparently died, and no further plants were to be seen. Nevertheless 13 years later by chance I visited the same location and was delighted to see that the "dead" tree had resprouted, thus providing the necessary voucher to confirm my earlier observation (AK 252118, P.J. de Lange 4356).

Although it could be argued that the tree I found had been planted, I doubt this, as the species is widely acknowledged as hard to cultivate in the warm and humid climate of the basin (J.D. McCraw pers. comm.). Therefore I am inclined to view the occurrence as indigenous. Other factors behind my reasoning include the remoteness of the gully habitat from gardens and people and, like similar occurrences in the karst country, the fact that the tree occupies a site prone to temperature inversions. In addition the associated assemblage of plant species typical of the montane vegetation of the main ranges bordering the Waikato lowlands, and all common bedfellows of *C. indivisa* in those parts, as further strong evidence that the occurrence is natural. Herbarium confirmation of this discovery adds to the list of "montane" species, which I have previously identified from the Hamilton Basin (de Lange 1986, 1987, 1989).

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Threat to dune habitats at Whatipu from major coastal erosion

Andrew Pegman

Whatipu Beach, North Manukau Head, Auckland has an interesting history of progradation (building out of the coast in a seaward direction): in the mid-nineteenth century and again in the 1930s no beach was present at all. Subsequently the beach has steadily prograded and natural vegetation succession has occurred, until the sand reached its greatest known width of more than 1 km in the 1980s (NZAM 1987).

However, some startling changes have occurred at Whatipu recently. Considerable coastal erosion has taken place as of October 2001, with the loss of approximately 340 metres of beach front sand