Old and odd dragon-trees (*Dracaena draco*) in Auckland City — what's going on?

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Dragon-trees (*Dracaena draco*) are in the same monocot family as cabbage trees (*Cordyline* spp.): Asparagaceae. They are native to the Canary Is., Madeira Is., Cape Verde Is., and SW Morocco (Anti-Atlas Mtns) (Mabberley 2008). However, they are rare in the wild and all plants I saw in the Canary Islands appeared to have been planted. Although they have been cultivated in Auckland for over a century, they have only become popular landscaping plants in the last 20 years or so. Mike Wilcox (2012: p.105) in his Auckland Urban Forest book aptly includes it as one of his "trendy newcomers" (Fig. 1). Cameron (2015a,b) recorded that they are starting to naturalise in northern New Zealand from Mount Maunganui northwards.

The glaucous sword-like leaves 55-62 cm long, with their wide (10-12 cm) orange bases, are diagnostic (Fig. 2). Juvenile plants have fat, unbranched trunks (Fig. 1) and Mabberley (2008) records branching occurring every ten years, probably after flowering. Multiple-branched trees form the more typical tight umbrella shape of the older dragon-trees which I was fortunate enough to see in the Canary Islands (Figs. 3-5). This dense branching is also the main form of the current younger plants in New Zealand (Figs. 1 and 6). One of the tallest recent plants that I have seen is a 4 m. × 6 m across well-branched tree, 45.0 cm diameter at 1.2 m, on the side of a steep driveway at 36 Kowhai Road, Mairangi Bay. This tree was c. 3.5 m tall in 1997 (AK 222640).

The six oldest and largest dragon-trees in Auckland that I'm aware of are atypical; four of them haven't branched at all and two have only sparingly

branched (Figs. 7-11, Table 1). They occur at three locations: Remuera (4), Parnell (1) and Devonport (1). The three unbranched trees at 7 St Vincent Ave are all close to the footpath in a retirement village that contains some other remarkable trees, especially some very tall pohutukawa (*Metrosideros excelsa*) in immaculately kept grounds. All six of these old Auckland trees stand out as different when compared with what I saw in the Canary Islands, and they are also different from the more recent plantings around Auckland.

While pondering why these trees are so different from the norm I considered that they may be hybrids, or perhaps they are a different species? Discussing this question with Peter Bellingham, he suggested that I ask his botanical friend in the Canary Islands: José María Fernández-Palacios. I sent José María images of the odd Auckland trees and he immediately replied that the bizarre branching or even the lack of branching is because of an excess of water and that such trees do not flower. He said this form also occurred in the Canary Islands when they over-irrigated the gardens or when they were planted beyond their distribution limits. The average rainfall of Tenerife is less than a quarter of the rainfall of Auckland: Auckland (Albert Park) is 1254 mm/year, and Tenerife is 293 mm year (http://www.holidayweather.com/tenerife/averages/).

I suspect that all six of Auckland's historic dragon-trees were probably planted around the same time. Based on the planting date of the Parnell tree of c.1898 (Cameron et al. 2008) these trees will all be around 117 years old. It will be interesting to see what happens to the modern, well-branched,

Figs. 1-6: 1. A modern house entrance lined by 8 youngish dragon-trees. 40 Woodside Ave, Mt Eden, 18 Sep 2015. All images are by the author. 2. The leaves are diagnostic in shape. Dead leaves collected from under the unbranched pair of trees at St Stephens Ave, 12 Sep 2015. 3. Reputed to be the world's largest (17 m tall; trunk >2 m diameter) and oldest dragon-tree, called "El Drago Milenario". (Note the people under it.) Estimated in 1971 to be ≤365 years old, not several thousand as had previously been claimed (Mabberley 2008). Icod de los Vinos, NW Tenerife, Canary Is., 5 May 2011. 4. A town full of dragon-trees! La Orotava, N Tenerife, Canary Is., 4 May 2011. 5. Dragon-tree with the typical dense branching of the adults. La Orotava, 4 May 2011. 6. One of the bigger modern Auckland dragon-trees, Auckland Botanic Gardens planted in 1989, c.2.5 m tall and 31.4 cm dbh, has the typical tight umbrella head of the species, 26 Sep 2015.















Table 1: Locations and dimensions of Auckland's old and odd dragon-trees.

Heights estimated and dbh measured by the author in September 2015.

Location:	9 St Stephens Ave, Parnell	42 King Edward Pde, Devonport	7 St Vincent Ave, Remuera (northern) tag 0180	7 St Vincent Ave, Remuera (mid)	7 St Vincent Ave, Remuera (southern)	21a St Vincent Ave, Remuera
Fig. No.	7	6	9	8	8	10
Approx. height (m)	11	15	14	12	10	11
Dbh (cm)	86.9	35.0	54.3	31.8	41.6	84.7
No. of heads	>26	1	1	1	1	7

successfully fruiting dragon-tree plantings around Auckland (Figs. 1 & 12). I can't explain why these modern plantings flower and fruit so well when the earlier plantings have not. I suspect that they are a different genetic stock, or is it because nurseries haven't overwatered them? Time will tell.

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References

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Figs. 7-12: 7. At 15 m tall, this totally-unbranded dragon-tree is possibly the tallest in New Zealand. 42 King Edward Parade, Devonport, 30 Aug 2015. **8.** Planted c.1898, and with a 86.9 cm dbh, this tree has possibly the largest girth of any dragon-tree in New Zealand. 9 St Stephens Ave, Parnell, 2 Jul 2012. **9.** Two unbranched dragon-trees growing only 2m apart at 7 St Vincent Ave, Remuera. Photo: 12 Sep 2015. **10.** The most northern of the dragon-trees at 7 St Vincent Ave, c. 40 m N of the previous pair, 12 Sep 2015. **11.** An oddly branched individual down a long driveway, at 21a St Vincent Ave, Remuera (ignore the two cabbage trees in front), 12 Sep 2015. **12.** A fruiting modern specimen from a roundabout in Newmarket, Auckland, 15 Nov 2015.