

# Queensland bottle-tree (*Brachychiton rupestris*) – a sad loss from the Auckland Domain

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## Introduction

The genus *Brachychiton* (Malvaceae) of trees and large shrubs is almost endemic to Australia; there are 31 species with two occurring in New Guinea (one endemic) (Mabberly 2008). Fossils of *Brachychiton* from New South Wales and New Zealand are estimated to be 50 million years old (<http://en.wikipedia.org/wiki/Brachychiton>). The name *Brachychiton* is derived from the Greek *brachys* = short, and *chiton* = tunic, referring to its loose seed coats. The famous baobab trees of Africa (1 sp.), Madagascar (6 spp.) and NW Australia (1 sp.) with their characteristic swollen trunks are in the same family but a separate genus (*Adansonia*).



**Fig. 1.** This Queensland bottle-tree in the Auckland Domain, on top of the bank south of the Duck Pond, was dead in Feb 2013. Photo: Oct 2005. All photos except Fig. 2 taken by EKC, or with EKC's camera.

Several species of *Brachychiton* (though not all) are pachycaul plants (Greek *pachy* = thick or stout, and Latin *caulis* = stem), where the stem is used to store water during periods of drought. All species are monoecious, and the flowers have a bell-shaped perianth consisting of a single series of fused lobes which is regarded as a calyx despite being usually brightly coloured. The female flowers have five separate carpels that can each form a woody fruit containing several seeds. Eastern Australian forest

species drop their foliage before flowering but those of the drier regions carry the flowers while in leaf (<http://en.wikipedia.org/wiki/Brachychiton>).

At least five species are cultivated in New Zealand, and until recently all five occurred in the Auckland Domain: flame kurrajong or flame tree (*Brachychiton acerifolius*), *B. bidwillii* (only in the nursery), scrub bottle-tree (*B. discolor*), kurrajong (*B. populneus*) and Queensland bottle-tree (*B. rupestris*).

## Queensland bottle-tree

Queensland bottle-tree (*Brachychiton rupestris*) is endemic to Queensland, occurring naturally in depauperate closed forests or woodlands in drier parts of Queensland where it can be a large tree, typically with a swollen, bottle-shaped trunk (Stanley & Ross 1986). It is semi-deciduous with inconspicuous yellow, spring-summer flowers and commonly reaches 8–10 m tall in cultivation (Ryan 2003). It is cultivated for ornament and shade, and in eastern Australia for cattle fodder (Mabberly 2008).

## Queensland bottle-trees in New Zealand

Because of its unusual-shaped trunk one of my favourite cultivated trees in the Auckland Domain was a Queensland bottle-tree (Fig. 1). I made a herbarium specimen of it in 1991 (Fig. 2). The tree was then c. 2.5 m tall, having been planted about 1970 by Bob Laingholm, who brought it in from Australia (Colin Bradshaw pers. comm.). Sadly, it died last year. The tree was blown over, the root plate being moribund and decayed (Simon Cook pers. comm.). When it died it was less than 4 m tall and possessed the typical swollen, bottle-shaped trunk. In February 2013 only a rotten base of the trunk remained.

Thanks to Hugo Baynes (pers. comm.) there are five in public areas at the Auckland Zoo: the biggest one is c.3 m tall, nearly 25 years old (ex *Bottle Trees NZ* nursery), planted in 2012 at 'The Watering Hole' adjacent to the flamingos; there are two in the alligator enclosure, planted in April 2010 (ex *Black Bridge Nurseries*); and two in the new Australian area of the Tasmanian devil precinct (ex *Bottle Trees NZ*), planted April 2014, probably 15 to 20 years old.

Others have been planted out in Auckland by Auckland Council but none have done particularly well and most have died (Simon Cook pers. comm.). A tree at Kelston, brought to my attention by a herbarium specimen at Scion (NZFRI 24419, *Les Renney*, 15 Nov 2001), had not been present on the property for at least the last seven years (present owner, pers. comm.). Mike Wilcox doesn't include Queensland bottle-tree in his Auckland Forest book (Wilcox 2012) – inadvertently missed out?

Apart from these few bottle-trees in Auckland, herbarium specimens record only two other trees in New Zealand: NZFRI 14957, *F.B. Knowles & C.E. Ecroyd*, 6 Nov 1984, a small tree at McLaren Falls, near Tauranga; and NZFRI 22405, *T. Irvine*, Mar 1997, a small plant in a Gisborne garden. However, Daniel Steele of *Black Bridge Nurseries* informed me that they have sold 20-30 bottle-trees over the last 15 years, and there is a nursery specialising in bottle-trees (*Bottle Trees*

NZ) based at Hahei in the Coromandel and run by Brian Keucke. According to their website they have 1500 trees on site, and have been growing them for the last 20 years ([http://www.landscapedesign.co.nz/landscapedetails\\_miniex.asp?id=7184](http://www.landscapedesign.co.nz/landscapedetails_miniex.asp?id=7184)). There are some great bottle-tree images and interesting facts on this website and the nursery looks well worth a visit. With specialist nurseries like this there are likely to be more bottle-trees planted out in the warmer parts of New Zealand. However, New Zealand, with rainfall throughout most of the year in most parts, is perhaps not optimum for this drought-tolerant specialist.

### Queensland bottle-trees in Australia

Since the death of the Auckland Domain bottle-tree tree I've been fortunate to see a few in Australia, which has made me appreciate the species even more. There are several spectacular cultivated ones as part of a memorial planting in central Brisbane (Fig. 3) and others in Sydney Botanic Gardens (Fig. 4). During a holiday in southern Queensland I managed to photograph some natural ones from the road (Fig. 5), but was unsure at the time whether they were kurrajong (*B. populneus*) or Queensland bottle-trees (*B. rupestris*). Fortunately Cameron Kilgour (ex Auckland Bot Soc member) has lived for some time in Queensland and showed my photo to Paul Forster, who knows the locality and confirmed that they are Queensland bottle-trees. The trees survived the 1980s scrub clearance because farmers utilised them to graze cows. Their trunks are narrower than those of the bulbous cultivated ones in Figs. 3 and 4 – is this genetic variability or a reflection that these wild ones frequently suffer drought conditions unlike the cultivated specimens receiving more water? Gordon Guymer replied to this query: "*Brachychiton rupestris* in nature occurs in vine thickets / vine forests or brigalow (*Acacia harpophylla*) forests. It has to compete for light with other tree species hence it is usually taller (up to 25 m) than individual plants grown from seed in cultivation, which are shorter and squatter. Invariably, soil type and available water also influence tree height and bottle shape. The species hybridises with *B. populneus* throughout its distributional range, and these hybrids (*B. × turgidulus*) have intermediately bulbous trunks."

Evidently bottle-trees transplant easily at any age and the last ones to be permitted to be exported



**Fig. 2. Herbarium specimen of the Queensland bottle-tree from the Auckland Domain shows the palmatisect leaves with narrow leaflets; evidently these may reduce to a single leaflet in the adult. 10 May 1991 (AK 210553).**



**Fig. 3.** This group of wonderful Queensland bottle-trees in ANZAC Square, central Brisbane, commemorates the Queensland Light Horse Regiments, which served in South Africa's Boer War (1899–1902). The square is a state memorial to those who participated in overseas armed service and is named in honour of the Australian and New Zealand Army Corps. Photo: 14 Apr 2013.



**Fig. 4.** Queensland bottle-tree in the Sydney Botanic Gardens with the same scale as Fig. 3. Note – no two trees are the same shape. Photo: 3 Nov 2013.



**Fig. 5.** Wild Queensland bottle-trees from the Bunya Highway, between Murgon and Wondai, southern Queensland. Evidently the scrub was cleared from here in the 1980s. Virtually only the bottle-trees remain. Photo: 23 Apr 2013.

from the wild in Australia went to China for the Beijing Olympic Games in 2008. I hope Auckland Council will try again to establish a Queensland bottle-tree in the Auckland Domain, perhaps this time in a bed of well-drained scoria.

#### **Acknowledgements**

I thank: Hugo Baynes of the Auckland Zoo for the information about the Zoo trees; Gordon Guymer of the Queensland Herbarium (BRI), for information on *Brachychiton*; Paul Forster via Cameron Kilgour for confirming my wild Queensland bottle-tree image; Colin Bradshaw, Simon Cook and David Millward of Auckland Council for information of the Domain tree and also Simon for some other Council plantings; Daniel Steele of *Black Bridge Nursery* for information; and staff at NZFRI, CHR and WELT herbaria for checking for New Zealand records of Queensland bottle-tree.

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