

A new palm naturalises in Auckland

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On 4 Nov 2002 during an Auckland Regional Council weed surveillance visit on Auckland's North Shore in Long Bay Regional Park unusual palm seedlings were discovered naturalised by Kathryn Whaley and Alistair MacArthur. A few were collected and sent to the Auckland Museum herbarium (voucher: AK 259071 & 259077). On 8 Nov all three authors went to check and photograph this new discovery, which was suspected to be Queen palm, *Syagrus romanzoffiana* (syn. *Arecastrum romanzoffianum*, *Cocos plumosa*).

All seedlings (Fig. 1) were in the small area of native forest by the Nature Walk, due west of Vaughan Homestead (SE-facing slope), above a small stream, some 300 m from the coast. They were either under or on the margin of canopy trees of taraire (*Beilschmedia tarairi*) or puriri (*Vitex lucens*) (map 260 R10 664009, c.10-20 m asl). All seedlings seen were uprooted (total: 71), from an area which roughly covered an area of 50 x 50 m², although most seedlings were concentrated in a much smaller area (c.10 x 15 m²) beneath one taraire. They were frequently associated with seedlings of the native palm, nikau (*Rhopalostylis sapida*).

The Queen palm seedlings ranged from possessing one to several erect leaves (to 1 m tall), which were shiny green above. The first few leaves were undivided (pleated and up to 8 cm across); only the largest seedlings also possessed 1 or 2 pinnately divided fronds (Fig. 2). Keith Boyer, a local palm expert, confirmed the identification as Queen palm seedlings and estimated their ages ranged from 1 (single undivided leaves) to 5 years old (possessing 1 or 2 pinnate leaves). He has also recently observed occasional Queen palm seedlings at Henderson, close to his parent palms.

Despite searching at Long Bay, no suspected adult Queen palms could be seen in the adjacent or wider surrounding area. Neither were any found on the grounds around the entrance and facilities of Long Bay Regional Park, or in the gardens of Vaughan Homestead. The nearest suburbs are (currently) 1 km or more distant from the site, and most of the intervening land is grazed pasture. We briefly searched the nearest streets 1.3 km to the south in Torbay, and found several Queen palms in gardens, but none appeared to be of fruiting size (>5 m tall trunks). It is likely that the parent palm (or palms) of these seedlings is at least 1 km from the site.

We suspect that kereru, or NZ pigeons (*Hemiphys novaeseelandiae*), are responsible for dispersing the seeds to the site, because the seedlings were all under

canopy branches (ideal perch sites for kereru), and among the palm seedlings were a few other exotic seedlings which have large, fleshy-fruit: loquat (*Eriobotrya japonica*) and monkey apple (*Acmena smithii*). The parents of these species were also not observed in the immediate adjacent area. Queen palm fruit ripen February to June (K Boyer pers. comm.) and kereru are known to occur in the area.

Queen palm fruits are within the range of fruit sizes ingested by kereru, but are too large for other local



Fig. 1. The densest area of Queen palm seedlings, beneath one taraire at Long Bay regional Park. Note the single nikau palm seedling to the right for comparison. Nov 2002.



Fig. 2. An assortment of different aged Queen palm seedlings taken from Long Bay Regional Park. Note ballpoint pen for scale (14 cm long). Nov 2002.

bird species. Keith Boyer supplied a sample of Queen palm seed from the previous season, from his Henderson property. They were globose and ranged in size from 14-19 mm diameter (lacking the orange fleshy layer). According to Jones (1996) the typical fruit are fat 20-25 mm long (look like miniature coconuts) and there is a slender variety (var. *australe*) with slender fruit to 30 mm long (diameters not stated). Gibb (1970) closely recorded the plums (*Prunus x domestica*) that kereru ate and didn't eat in his Wellington property and concluded that these pigeons could swallow plums up to 25 mm diameter, which is larger than all the seeds supplied by Boyer, even allowing for the missing 3 mm fleshy covering. In contrast, blackbird (*Turdus merula*) gapes are 9 mm (Clout and Hay 1989), and they typically feed on fruits <8 mm diameter (Burrows 1994). Blackbirds have been reported ingesting fruits of bangalow palms (*Archontophoenix cunninghamiana*) (Cameron 2000) but bangalow seeds are 9-12 mm diameter (Jon Sullivan, unpublished data), substantially smaller than Queen palm seeds. New Zealand's largest naturalised pigeon, the feral rock pigeon (*Columba livia*) does not feed on large fruits, feeding instead on grains, seeds, and assorted crumbs.

Queen palms are native to central and southern Brazil, Paraguay, Uruguay, northern Argentina and possibly Bolivia in forests and woodlands but usually relatively coastal from 20 to c.35° S (Boyer 1992, and pers. comm. Nov 2002). They reach 15(-20) m tall, are monoecious and fruit can be produced from solitary plants (Jones 1996). In New Zealand they are fast growing and genetically variable (probably relating to seed sourced from different provenances): in age of maturity (can fruit as early as 15 years old); fruit size; and amount of fruit set (K. Boyer pers. comm.). Queen palms can hybridize with other species of *Syagrus* and with species of *Butia* and *Jubaea*, palms of the same subtribe, Butiinae (Boyer

1992). Worldwide, they are one of the most widely cultivated palm species in cool to subtropical areas (Boyer 1992). Max Goodey in 1973 recorded Queen palms seeding freely in Auckland, but during the 1980s Queen palms actually decreased to very few adults around Auckland – became unfashionable (EKC pers. ob.). In recent years they are probably the main palm used for landscaping and are now very common in the Auckland region, although most are not yet mature.

Healy and Edgar (1980) recorded the first naturalised palms in New Zealand: *Livistona australis* (on Kawau Id); *Phoenix canariensis* (from Auckland City and Tauranga) and *Trachycarpus fortunei* (from Auckland and Nelson regions). Based on specimens in AK herbarium and pers. ob. *L. australis* seedlings have also been collected in Auckland City; *P. canariensis* seedlings have been collected or observed at Dargaville, The Noises Is (Hauraki Gulf) and Akaroa; and *T. fortunei* seedlings have been collected in Hamilton. Cameron in 2000 recorded bangalow palms naturalising in Auckland and Whangarei Cities, and now we record Queen palm, a fifth palm species, naturalising at a single location in New Zealand.

Of concern is that all five of these palm species have flesh-covered fruit small enough to be swallowed and dispersed by kereru. Another concern is that there is a rapid increase in palm species now being cultivated in northern New Zealand (see Wilcox 2002) with little concern for their weed potential. Bangalow and Queen palms also appear to establish readily in the same niches as our native nikau palm. Unlike bangalow palm seedlings, Queen palm seedlings look quite different from the nikau, and could therefore be more easily removed if found naturalising in native forest. But it did take five years before these Queen palm seedlings growing adjacent to a public track in a Regional Park were noticed. What if they were dispersed to a remote forest area?



Fig. 3. An adult Queen palm c.15 m tall (>20 years old) at Potters Park, by Balmoral Road, Auckland. Note the smaller palm of *Chamaerops humilis*. Nov 2002.

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