

A Brief History of the Coconut Palm in Australia

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1. Cultivated coconuts and John Dowe amid the coconut sculptures, The Strand, Townsville, Australia. Photo by Andi Cairns.



Coconut palms form a dominant part of the coastal vegetation throughout much of tropical Australia. Historically, the species has been considered to be non-indigenous, although some documentary evidence suggests that there were indeed extant populations at the time of European settlement in the mid 1800s.



2. Coconuts on the Frankland Islands as sketched by O. W. Brierly in his diary of the voyage of H.M.S. Rattlesnake in 1848, reproduced with permission of the Mitchell Library, State Library of New South Wales.

There has been considerable debate as to whether the now ubiquitous coconut palm, *Cocos nucifera* L., is indigenous to Australia. Today, coconuts are extensively cultivated throughout tropical Australia, having been introduced in many areas during European settlement. For example, coconuts were listed among the first plants grown in the 'Acclimatisation Gardens' that were to eventually become regional botanical gardens in many northern Australian cities and towns during the late 1800s. The origin of the coconut cultivated

in urban settings (Fig. 1) is fairly well understood; however, the naturalness of some populations in Australia is unresolved. This paper provides a brief history of the coconut palm in Australia.

Early reports of coconuts in Australia

Although Europeans first began to visit the tropical coasts of Australia in the early 1600s (Dampier 1703, Drake-Brockman 1963, Cornell 1974, Henderson 1999), it was not until the voyage of the *Endeavour* along Australia's east coast in 1770

that coconuts were first reported. However, these reports were not of palm trees swaying in the tropical breeze, but merely of coconut fruits, either washed up on shore or floating in coastal waters. Banks described coconuts as part of the flotsam that he found on the banks of the Endeavour River (Beaglehole 1962):

[1 July 1770]: . . . *our second lieutenant found the husk of a cocoa nut full of barnacles cast up on the beach; probably it had come from some island to windward, from Terra del Espirito Santo possibly as we are now in its latitude. . . .*

[5 July]: . . . *walked along a sandy beach open to the trade wind. Here I found innumerable fruits many of plants I had not seen in this country, among them were some Cocoa nuts that had been open'd (as Tupia told us) by a kind of crab called by the Dutch Beurs Krabbe (Cancer latro) that feeds upon them . . . all these fruits were encrusted with sea productions and many of them covered with Barnacles.*

During the voyage of the Endeavour, coconuts were indeed sought after as a welcome supplement to an otherwise dull and inadequate diet endured as part of shipboard life. An indication of how much they were sought after was noted by Cook (1771) in his diary:

In the PM we saw several large smooks on the main, some people, canoes and as we thought Cocoa-nutt trees upon one of the islands, and as a few of these nutts would have been acceptable to us at this time I sent Lieutt. Hicks a shore with whom went Mr. Banks and Dr. Solander to see what was to be got . . . they returned on board having met with nothing worth observing, the trees we saw were a small kind of Cabbage Palm.

Similarly, Banks also wrote of this same event (Beaglehole, 1962):

. . . an appearance very much like cocoanut trees tempted us to hoist out a boat. . . where we found our supposed cocoanut trees to be no more than bad cabbage trees. . . .

Incidentally, the location of these accounts was the Palm Islands, just north of Townsville, and 'the bad cabbage tree,' *Livistona drudei*.

Further exploration of the Australian coast was undertaken during the early 1800s (Flinders 1814), but still there were no reports of coconut palms. King (1828), in his voyage of 1818, recorded a recently opened coconut on a beach on the east coast, assuming that Aborigines had opened and consumed the flesh. During King's third voyage in

the Mermaid in 1820, the botanist Allan Cunningham noted:

. . . I landed on Cook's Lizard Island (where a whaler's ton butt and several cocoanuts - one quite sound and perfect - were found on the beach). . . (Lee 1925).

It was not until the mid 1800s, during the voyage of the Rattlensake (1846–1850) along the east coast of Australia, that a report verifying the occurrence of a small population of coconuts was provided. On that expedition, both the naturalist, John MacGillivray (1852), and the artist, Oswald Brierly (1848), included an account of a group of coconut palms that were observed on one of the Frankland Islands, to the southeast of Cairns. The MacGillivray diary account was as follows:

The southernmost island . . . Two small clumps of cocoa-nut trees, loaded with fruit, were found on the eastern side of the island, within reach of the spray, in a place where they might have originated from a floating nut or two thrown upon the beach. This is the only instance in which I have seen this useful plant growing wild in any part of Australia, or the islands strictly belonging to it.

In his diary, Brierly (1848) described the same grove of coconuts. This was accompanied by a sketch of two mature fruit-bearing palms and a younger trunkless palm growing among boulders near the water's edge (Fig. 2). This same population was to be described later by Hill (1873):

Frankland Island, No. 4 . . . on the extreme end of the island we found two clumps of cocoanut-trees, extending for about fifty yards inland, but within reach of the sea spray. They were twenty-eight in number; thirteen of them were bearing, and the others will bear in the course of two or three years. Three or four of them were about fifty feet in height. The trunks, in some cases, were much cut: and two trees had been felled, no doubt for the purpose of obtaining the nuts.

Mueller (1867) and Thozet (1869), both of whom described coconut palms from locations on the Queensland coast provided other reports. These reports were summarised by Bentham (1878) in *Flora Australiensis*, where he described plants as having "stunted and crooked growth in the open sandy flats of Keppel Bay and about 30 ft high." By the early 1900s, the widespread introduction of coconuts had begun to obscure the palm's status in Australia as being either indigenous or non-indigenous, with Bailey (1902) in his *Queensland Flora*, providing the summary, "*Common on the tropical coast; but I have some doubts of it being truly indigenous.*"

The current debate

Despite the early accounts, and some evidence of pre-European-contact Aboriginal use (Hynes & Chase 1982, Tucker 1988), there has since been an active debate on the natural status of coconuts in Australia, with general consensus that they are non-indigenous, and that the coconut "*owes its presence here to people rather than to the ability of its fruit to float across oceans*" (Cribb & Cribb 1985). The debate in some areas has even seen local authorities instigating policies to ban the continued planting of coconuts, and to encourage the removal of coconuts from both public and private locations on the premise that the species is not indigenous, and therefore contravened their "Australian plants only" landscape policy. [If this policy were to be extended to other non-indigenous things, such as resorts, Europeans and sugar cane, northern Australia would indeed be a very 'natural' place!]

Research on Australian coconuts

The problem of the origin of coconuts in Australia was taken up by a number of researchers. Buckley and Harries (1984) hypothesised that a population of coconuts occurring on Lizard Island was of a wild type, known as *niu kafa*. They differentiated wild coconuts from cultivated coconuts, known as *niu vai*, on the basis of the former having long angular fruit, thick husks, and representing the putative ancestral condition best adapted to dissemination by floating, while the *niu vai* type, of cultivar origin, has spherical fruits, thin husks and disseminated by humans (Harries 1978). The location of this particular population suggested that it was self-sown rather than a result of cultivation. This was considered to be evidence for the natural establishment of wild coconuts on the Australian coast. Tucker (1988) recognised some populations that may have been established due to currents that act as dissemination agents for plant propagules. These populations were of various types of coconut, including wild types with small spindle-shaped seeds similar to Harries' *niu kafa* type.

Extending the time-frame

So far we have discussed the coconut in a relatively short time-frame. The coconut, of course, has taken millions of years to evolve, and the most logical place of origin is in the arc of oceanic islands stretching from the Indian Ocean through to Melanesia. This is argued on the basis of the species' morphological diversity, symbiotic relationships, and ethnobotanical importance in that region (Harries 1978). Harries (1995, 2001), however, further investigated the distinction between 'place of origin' and 'centre of diversity'

of the coconut, but could not fully resolve this question. The fossil record for plants resembling coconuts is relatively meagre, though specimens have been located in India from Eocene deposits, about 40 mya (Sahni 1946), and New Zealand, with a small *Cocos*-like fruit from Pliocene deposits, about 4 mya (Berry 1926). Similarly, in Australia, there is compelling evidence in the fossil record for the previous occurrence of coconuts on the continent. Rigby (1995) described a silicified coconut fruit from the Chinchilla sands in southern Queensland and dated it to the late Pliocene, about 2 mya. Chinchilla is situated about 250 km west of Brisbane, and the area is otherwise rich in fossils of semi-aquatic animals such as crocodiles and tortoises, thus suggesting a previously more tropical and humid climate than at present.

Conclusion

So where does this lead to in the debate about the naturalness of coconuts in Australia? Fossil evidence indicates an occurrence dated to millions of years ago. Did climate change cause a decline or even eradication of the species from continental Australia? And then there is evidence that at least a few small populations were present at the time that Europeans first explored and settled the continent. Were these populations the remnants of a once widespread population, or were they the result of chance establishment by coconuts that drifted from areas such as Melanesia where the coconut was indeed well established, and thus possibly represents outliers of those populations? In either case they are natural and not introduced. Coastal coconuts have been regular natural visitors to Australian beaches since the earliest times and should be welcomed and encouraged.

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LITERATURE CITED

- BAILEY, F. M. 1902. The Queensland Flora. Vol 5. Diddams, Brisbane.
- BEAGLEHOLE, J. C. (ed.). 1962. The Endeavour journal of Joseph Banks 1768–1771. Angus & Robertson, Sydney.

- BENTHAM, G. 1878. *Flora Australiensis: a description of the plants of the Australian territory*. Vol. 7. Reeve & Co., London.
- BERRY, E. W. 1926. *Cocos* and *Phymatocaryon* in the Pleiocene of New Zealand. *American Journal of Science* 212: 181–184.
- BRIERLY, O. W. (1848). *Journal on HMS Rattlesnake*. Unpublished manuscript (ZA505), Mitchell Library, Sydney.
- BUCKLEY, R. AND H. HARRIES. 1984. Self-sown wild-type coconuts from Australia. *Biotropica* 16: 148–151.
- COOK, J. 1771. *A journal of a voyage round the world in His Majesty's Ship Endeavour, in the years 1768, 1769, 1770 and 1771*. Becket and P. A. De Hondt, London.
- CORNELL, C. (ed.). 1974. *The journal of Post Captain Nicolas Baudin, commander-in-chief of the corvettes Géographe and Naturaliste*. Library Boards of South Australia, Adelaide.
- CRIBB, A. B. AND J. W. CRIBB (1985). *Plant life of the Great Barrier Reef and adjacent shores*. University of Queensland Press, St Lucia.
- DAMPIER, W. 1703. *A voyage to New Holland in the year 1699*. James Knapton, London.
- DRAKE-BROCKMAN, H. 1963. *Voyage to disaster: the life of Francisco Pelsaert*. Angus & Robertson, Sydney.
- FLINDERS, M. 1814. *A voyage to Terra australis; undertaken for the purpose of completing the discovery of that vast country, and prosecuted in the years 1801, 1802, and 1803, in His Majesty's Ship the Investigator*. Two volumes. G. and W. Nicol, London.
- HARRIES, H. C. 1978. The evolution, dissemination and classification of *Cocos nucifera* L. *The Botanical Review* 44: 265–319.
- HARRIES, H. C. 1995. Coconut. In: J. Smartt and N. W. Simmonds (eds), *Evolution of crop plants*. London: Longman.
- HARRIES, H. C. 2001. Coconut. In: F. Last (ed.), *Tree crop ecosystems*. Elsevier.
- HENDERSON, J. 1999. *Sent forth a dove: discovery of the Duyfken*. University of Western Australia, Nedlands.
- HILL, W. 1873. Report. In: G. E. Dalrymple (ed.), *Reports and narratives of the north-east coast expedition 1873*, 48–53. Brisbane: James C. Beal, Government Printer.
- HYNES, R. A. AND A. K. CHASE. 1982. Plants, sites and domiculture: Aboriginal influence upon plant communities in Cape York Peninsula. *Archaeology in Oceania* 17: 38–50.
- KING, P. P. 1828. *Narrative of a survey of the intertropical and western coasts of Australia performed between the years 1818 and 1822*. London.
- LEE, I. 1925. *Early explorers in Australia: from the log-books and journals*. London.
- MACGILLIVRAY, J. 1852. *Narrative of the voyage of H. M. S. Rattlesnake*. T. & W. Boone, London.
- MUELLER, F. VON. 1867. Australian vegetation, indigenous and introduced, considered especially in its bearings on the occupation of the Territory, and with a view of unfolding its resources. *Journal of Botany, British and Foreign* 5: 160–174.
- RIGBY, J. F. 1995. A fossil *Cocos nucifera* L. fruit from the latest Pliocene of Queensland, Australia. *Birbal Sahni Centenary Volume* 379–381.
- SAHNI, B. 1946. A silicified *Cocos*-like palm stem, *Palmoxylon (Cocos) sundaram*, from the Deccan Intertrappean Beds. *Journal of the Indian Botanical Society* 26: 361–374.
- THOZET, A. 1869. The coco-nut in Australia. *Journal of Botany, British and Foreign* 7: 213–214.
- TUCKER, R. 1988. *Palms of subequatorial Queensland*. Palm & Cycad Societies of Australia, Milton.