

The Mpapindi Palm (*Chrysalidocarpus pembanus*) of Pemba Island, Tanzania

DENNIS V. JOHNSON

605 Ray Drive, Silver Spring, MD 20910

The mpapindi palm is one of about twenty species of the genus *Chrysalidocarpus*. Geographic distribution of the genus is limited to the Indian Ocean and includes Madagascar, the Comoro Islands and Pemba Island. Two species are known only in cultivation: *C. glaucescens* and *C. cabadae*. The ecology of *Chrysalidocarpus* spp. is quite varied. They occur from sea level to elevations of 2,000 m in littoral forests, lowlands and montane forests, including rocky and mossy surfaces. The so-called "areca" palm (*C. lutescens*) occurs wild in Madagascar on sand dunes and along streams. It is one of the most widely and easily cultivated ornamental palms. The natural history of the genus is poorly known and is in need of taxonomic study (Uhl and Dransfield 1987).

Williams (1949) included the mpapindi palm in his book on useful and ornamental plants in Zanzibar and Pemba, but did not provide a name for the species. *Chrysalidocarpus pembanus* was formally described by Moore (1962a, b), using herbarium materials. Later, Moore (1965) visited Pemba and was able to collect flowers and immature fruits. There is general agreement that the palm is endemic to Pemba Island, specifically to the Ngezi Forest Reserve in the northwestern portion of the island. Williams (1949) mentions the mpapindi palm being in cultivation in Zanzibar. I have been unable to find any record of it having been brought into cultivation elsewhere in botanic gardens, although it is in a private garden on the southern coast of Kenya (J. Dransfield, pers. comm.)

Moore (1962a) provided a complete botanical description of the palm. In it he stated that the species is a clustering palm up to 18 m in height, with a green trunk and bright red fruits.

During a trip to Tanzania in January 1990, I visited both Zanzibar and Pemba Island and gathered information on the current conservation status of the mpapindi palm.

Zanzibar

As reported by Williams (1949), the mpapindi palm is cultivated in and around Zanzibar Town. The largest stand is in a small garden beside the House of Wonders on the waterfront. There are 95 palms in that garden, representing various age classes; the largest palm is about 10 m tall. It was noticed that not all of the trunks were producing basal suckers. In more recent years, mpapindi palms have been planted along the driveway (Fig. 1) and on the grounds of the Bwawani Hotel, as well as beside the parking lot at Zanzibar airport. In all three locations, the palms looked healthy, growth appeared to be vigorous and some specimens were fruiting heavily. It appears that the mpapindi is as suitable an ornamental palm for other parts of the tropics as *Chrysalidocarpus lutescens*.

Pemba

Pemba Island has undergone significant deforestation due to the establishment of clove plantations beginning in the 1830s,



1. The mpapindi palm (*Chrysalidocarpus pmbanus*) under cultivation at the Bwawani Hotel, Zanzibar Town, Tanzania. 2. A cluster of native mpapindi palms (*Chrysalidocarpus pmbanus*) in the western coastal strip of Ngezi Forest Reserve, Pemba Island, Tanzania.

as well as other forms of agriculture. The sole remnant of the original forest is the Ngezi Forest Reserve, in the northwestern part of the island. It covers 1,456 ha. As Rodgers et al. (1986) and Beentje (1990) report, the forest is still largely intact, but with some areas replanted with exotics and native species. Selective logging of valuable timber species has taken place within the reserve.

Personal observations of the status of *Chrysalidocarpus pmbanus* were made along the east-west road through the Ngezi Forest. The palm is fairly common in the understory of the moist evergreen forest which is characterized by sandy soils. Populations are reproducing and palms of various sizes and ages were seen. Rodgers et al. (1986) state that the palm has "healthy and extensive populations with abundant

regeneration." Beentje (1990) found the mpapindi palm occurring in 32 of the 84 plots into which the forest has been divided, and estimated that the entire forest contains about 3,000 individuals. I did not see any fruiting palms in the moist evergreen forest, but it was early in the season. Mpapindi palms occur in the reserve with and without basal suckers. The growth habit is apparently variable.

The westernmost portion of the Ngezi Forest Reserve is a dry semi-evergreen forest atop poorly developed, rocky, coral soils. The habitat is much more open than the moist evergreen forest. In this area, the mpapindi palm is emergent and forms a part of the canopy (Fig. 2). Several palms were found to be in fruit. Again, the same pattern of solitary palms and those with basal suckers was noted.

Conservation Status

Currently, *Chrysalidocarpus pembanus* is classified as an Endangered species. Beentje (1990) describes it as being vulnerable. Based on my observations of the *in situ* status of this palm, I concur with Beentje and recommend that it be changed formally to Vulnerable. Native populations have been seriously reduced because of forest clearing and there remains the threat of further degradation of the Ngezi Forest; therefore, the ultimate security of the palm is not guaranteed. Of primary concern to its *in situ* survival is a proposal to use the western coastal strip of the Ngezi Forest for development of a sport fishing and beach resort. Such a facility and the added transportation infrastructure it would require would not only reduce the already small area of the reserve, but would likewise threaten the nearby moister evergreen core of the forest where the mpapindi palm occurs in greatest numbers.

Fortunately, the mpapindi palm is not under much pressure from local people for useful products. Beentje (pers. comm.) observed one instance of mpapindi palm trunks being used as goal posts (two uprights and a horizontal bar) at the Bandarikuu football field southeast of Ngezi Forest. The leaves appear not to be harvested, and the fruits are not eaten by humans. Beentje encountered a stand of fruiting trees where monkeys were eating the fruits.

Fresh mpapindi seed were collected from cultivated palms in Zanzibar and native palms in the western coastal strip of the Ngezi Forest. About 375 seeds were car-

ried back to the United States. A dozen I kept for myself to germinate, and turned the remainder over to the Palm Society Seed Bank for distribution. If these seed are successfully germinated, *Chrysalidocarpus pembanus* will have been brought into cultivation outside East Africa, greatly improving its *ex situ* conservation status. I believe the mpapindi palm has strong potential as a new ornamental, given its arching pinnate leaves, smooth green trunk and crimson fruits.

Acknowledgments

I wish to thank LeRoy Duvall, Chief Advisor, FINNIDA Zanzibar Forestry Development Project for making it possible for me to visit Pemba Island, and Henk Beentje for generously sharing with me his field observations.

LITERATURE CITED

- BEENTJE, H. J. 1990. Botanical assessment of Ngezi Forest, Pemba. Consultancy report for the Zanzibar Forestry Development Project, FINNIDA.
- MOORE, H. E., JR. 1962a. Two new species of *Chrysalidocarpus*. *Principes* 6(3): 106-110.
- . 1962b. Some corrected epithets for palm species. *Principes* 6(3): 121.
- . 1965. Palm hunting around the world. *Principes* 9(1): 13-29.
- RODGERS, W. A., J. HALL, L. MWASUMBI, I. SWAI, AND J. VOLLESEN. 1986. The conservation status and values of Ngezi Reserve, Pemba Island, Tanzania. Report.
- WILLIAMS, R. O. 1949. The useful and ornamental plants in Zanzibar and Pemba. Zanzibar.
- UHL, N. W. AND J. DRANSFIELD. 1987. *Genera palmarum*. International Palm Society, Lawrence, Kansas.