

# The Coconut Palm in East Africa

## 2. The Pemba Dwarf in Zanzibar

E. KRAIN, J. A. ISSA, A. KULLAYA, AND H. C. HARRIES

*National Coconut Development Programme, P.O. Box 6226, Dar es Salaam, Tanzania*

### Occurrence of the Pemba Dwarf

In East Africa, coconuts grow predominantly along the shores and islands of the Indian Ocean. They occur in a narrow coastal belt from Somalia, through Kenya, widening to about 150 km in Tanzania and more in Mozambique until the southerly limit of the Tropic of Cancer is reached. Further inland, coconut palms grow along the shores of Lake Nyasa and Lake Victoria and at places like Mbeya and Tabora.

The Pemba Dwarf occurs everywhere along the Tanzanian and Kenyan coastal coconut growing area. Especially, many grow in Zanzibar, and again many more in Pemba (Zanzibar proper comprises the islands of Unguja, commonly called Zanzibar, and Pemba). Introduced dwarf varieties also occur, for instance the yellow, red, and green forms of the Malayan Dwarf. In Zanzibar, some may have been imported earlier, but many can be traced to one major importation under the Ministry of Agriculture in the 1950s and successive plantings (Herz-Schweizer 1986) as well as from recent introductions, largely from the Ivory Coast, made by the National Coconut Development Programme. These included the Malayan Dwarf forms, the Cameroon Red Dwarf, as well as tall varieties and dwarf x tall hybrids. The originals are located on NCDP breeding sites and their progenies on farmers' land.

It seems that Pemba has been the primary source of local dwarf palms for the coast of Tanzania and Kenya. This is clearly reflected in the name of the dwarf, which is "Kipemba" everywhere except in Zanzibar (Unguja) and Pemba where it is called "Kitamli." On Zanzibar the name "Kipemba" may be applied to another type of coconut which is a yellow colored tall, rather than a red colored dwarf (see below). Color and plant habit are frequently used to identify coconut varieties. These are usually subjective descriptions, not based on any measured or standardized criteria.

The large number of local dwarf palms in Zan-

zibar could be due to the location of the original introduction and the greater agricultural and economic importance of coconuts there. The climate and growing conditions of the islands, particularly Pemba, are also more suitable for coconut cultivation than on the mainland.

### Names for Coconut Palms in Zanzibar

People in Zanzibar distinguish between local tall palms ("mnazi mrefu") and dwarf palms ("mnazi mfupi"). The tall are often further differentiated according to the color of the nut into: "mnazi mweusi" (the green coconut, although mweusi literally means black), the "mnazi mwekundu" (the brown or red coconut), and the "mnazi mweupe" (the white coconut). The "mnazi mweupe" is often also called "kipemba" or the "mnazi wa Pemba," but this only in Zanzibar. There are persistent reports that a King Coconut variety occurs in Zanzibar (see below) and that it is supposedly either identical, or looks similar, to the "mnazi mweupe."

The Pemba Dwarf is called "Kitamli" in Zanzibar and "Kipemba" on the Tanzanian mainland.

The terms "Mnazi wa Unguja" or "Mnazi wa Bahari," as mentioned by Voeltzkow (1920), or "African Nut" and "Indian Nut," mentioned by Craster (1913), are not in current use.

### History of Dwarf Coconuts in Zanzibar

Coconut palms are likely to have been cultivated for thousands of years in these same coastal regions of East Africa (Schuiling and Harries 1992). The earliest written source, dating back to the first century AD (Sheriff, 1981, p. 565), mentions coconuts (or coconut oil) being traded from Raphta, an ancient town at the mouth of the Pangani River on the coast of northeast Tanzania.

Coconut palms are mentioned by later travellers to the east coast of Africa, but few mention any dwarf coconut palms specifically. Attempts to find historical evidence has yielded the following:

Baumann, a geographer, reported that coconuts were perhaps introduced by the Wadebuli from Dabnal, formerly Dabul, a port on the west coast of India (Baumann 1896). Dabul was a trading center from the 10th to 16th centuries, connecting Persia, the Red Sea, and the coast of East Africa (Mohammed 1986). Writing at a time when copra had recently become the most important product of the palm, Baumann discounted the Pemba dwarf, saying, "This variety has no value as a copra palm . . . and is cultivated for drinking nut production only" (Baumann 1896, p. 17). Baumann also reported that he had seen the Pemba coconut palms in Mafia (Baumann 1897). Baumann summarized his findings:

"The coconut palm is planted in large numbers and provides a high yield of copra. There is one special variety on Pemba, which has been disseminated from this island to Zanzibar and the mainland, it is called 'Nazi ya Pemba' a short variety with short leaves and yellow-red nuts containing a very delicious juice" (Baumann 1899, p. 12).

Craster, a land surveyor on service in Pemba, recorded that "The natives recognize three different kinds of coconut: the Pemba nut, the African nut, and the Indian nut. The Pemba coconut palm grows to a height of sixty or eighty feet, and bears nuts with light brown, oblong-shaped husks. The African palm grows to one hundred feet or more, and the nuts have very thick, green, oblong-shaped husks. The kernel and milk of the African nut are not so sweet as those of the other two. The Indian palm does not grow as tall as the others, and begins to bear much earlier—after about six years: the husk of the nut is round in shape, yellow and thin, and the kernel is very sweet" (Craster 1913).

Voeltzkow, a botanist and zoologist, stated that "The natives differentiate between three different types of coconut palm; the common Zanzibar Palm, 'Mnazi wa Unguja', with bright yellow inflorescences and nuts of the same colour; the 'Mnazi wa Bahari' (the sea palm) with very big green nuts and inflorescences, and finally the 'Mnazi wa Pemba' which can be recognized by its short growth, the very yellow midribs of the leaves, many dark yellow inflorescences with egg-shaped beautiful orange-yellow nuts, which very often mature only three to four meters from the ground. This type is often cultivated near the homes and

along the roads. It bears nuts after only five years, but which normally are only used as drinking nuts. This type can be found not only in Pemba but also in Zanzibar (Unguja) and along the coast. Occasionally it is also called 'Indian Coconut' and might perhaps, as Stuhlmann (1909) thinks, be identical with a variety grown in Ceylon which is called 'Tembili' or 'King Coconut'. Also according to Stuhlmann there is a special dwarf type which is called 'Mnazi wa Kitamli'" (Voeltzkow (1920)).

Pearce, who was British Resident to Zanzibar considered that "There are two varieties of coconut palms grown in Zanzibar. The first is the ordinary species, while the second is a diminutive variety known as the Pemba coco-nut. This latter palm is very much smaller than the ordinary species, and with its clusters of gold-coloured nuts has a most pleasing and graceful appearance. It is planted to mark boundaries, and its milk is esteemed for drinking" (Pearce 1920).

Williams, Director of Agriculture, Zanzibar illustrated his book on the useful and ornamental plants of Zanzibar and Pemba with a photograph of local tall and dwarf coconut palms. From the picture, the dwarf can clearly be identified as a Pemba Dwarf (Williams 1949).

None of the above authors were coconut specialists so their unbiased descriptions are very helpful but have to be used with some care. There are some apparent contradictions which will be dealt with in discussion.

### Contemporary Sources

Herz-Schweizer assumed that the local dwarf "arrived during the increased trade movements between Zanzibar and India, Sri Lanka and the Far East—after the Oman Arabs declared Zanzibar a Sultanate of their own in 1848" (Herz-Schweizer 1986, p. 4) but did not provide any supporting reference. She described the Pemba Dwarf as closely resembling the Cameroon Red Dwarf (Herz-Schweizer 1986, p. 6). According to recent observations in the Pemba Dwarf germplasm plot at Selem, the resemblance between the two can be confirmed for most of the palms. Nevertheless there are about 5–10 percent which look quite different and more like the Malayan Dwarf (Krain and Issa 1991). It is also interesting to note one quotation of Herz-Schweizer's report "In the very variable EAT [East African Tall] population, a few palms can be found with light yellow fruit colour (Kipemba or Kineupe) and a few palms with red fruit colour. The nuts are pear-shaped

and small, the growth in height of the palm is slower than others. It could be that this palm is a King Coconut" (Herz-Schweizer 1986, p. 2).

Until recently it was thought that the word "Kitamli" had no particular meaning, other than just being a name for the local coconut variety. However, in a personal communication Ghassan conjectured that the word "tamli" is a corruption of "tambili," having learned from Mr. R. K. Trimlet, senior agricultural officer in the colonial service, Zanzibar, that "tamli" was a word coming from Sri Lanka (Ceylon) and that the 'King Coconut' (Tambili in Sinhalese) is a distinct variety. The King Coconut is said "to have originated in Ceylon, bearing a yellow, ovoid fruit, distinguished by its sweet juice and esteemed for culinary purposes, but it is of little commercial value for copra" (MacMillan 1934, p. 376). This identification, which may be based on Stuhlmann (1909), matches that of Voeltzkow (1920) and is supported by Jacob (personal communication) on the basis of visual observations in Sri Lanka and Zanzibar.

According to Purseglove (1972, p. 452) the "King Coconut" of Sri Lanka is known as "Rath Thembili," *Cocos nucifera* var. *aurantiaca*, a semi-tall cultivar described as "late flowering, self-pollinating, heavy-setting, with fruits of medium size, but little endosperm, and of little use for copra, but providing a popular drinking nut in India and Sri Lanka."

On Pemba there is a village with the name Mtambile. However, inquiries there did not yield a connection between "tambili" and "Mtambile."

Recent efforts to locate specimen palms of the "King Coconut" on Zanzibar did not result in clear-cut success. The examples found were not really convincing. They could have been yellow-fruited tall or hybrid varieties.

### Discussion and Conclusions

The most important local palm variety is the East African Tall. It is a variety which is indigenous to East Africa for some thousands of years (Schuiling and Harries 1992). This variety is called in Kiswahili "Mnazi Mrefu." According to its color it includes "Mnazi Mweusi," "Mnazi Mwekundu" and perhaps most of those called "Mnazi Mweupe." It is assumed that it is the same as "Mnazi wa Unguja" and "Mnazi wa Bahari" by Voeltzkow and "African Nut" by Craster.

At first sight, it appears to be difficult to reach a conclusion about the Pemba Dwarf. Baumann

describes the "Nazi ya Pemba" as a dwarf, Voltzkow describes the "Mnazi wa Pemba" also as a dwarf, but says that there is another dwarf variety called "Mnazi wa Kitamli" ("Kitamli" would be understood as the Pemba Dwarf today), Craster describes the "Indian Palm" as the shortest and the "Pemba Cocoa Nut Palm" as in between it and the typical tall "African Nut." Pearce only describes two local varieties and so does Williams. From their descriptions the local dwarf seems to be identical with the Pemba Dwarf. According to Herz-Schweizer's description the "Kipemba" is a bit shorter than the tall and the Pemba Dwarf is rather similar to the Cameroon Red Dwarf. The King Coconut has apparently been absorbed into the local palm population to such an extent that it is no longer possible to clearly identify individual palms. However, the clue may lie in the name, if this is a transliteration from Indonesian "kalapa raja" or royal coconut. A variety of that name, with a description matching the King Coconut, the Thembili or the "kitamli," has been known for at least 250 years (Rumphius 1740; Ohler et al., in preparation).

A "Pemba Coconut" was described from Philippines in 1912 as "a prolific variety, tree comparatively small, husk pale-yellow and thin, kernel of the usual thickness" (Barrett 1912). At time it must have been well established though it is not apparently known today (Santos, personal communication).

There is no specific mention in the literature about an early introduction of dwarf palms to Pemba, but Pemba is well accepted as the place from where dwarf palms were distributed to elsewhere in East Africa.

The close resemblance with the Cameroon Red Dwarf is not likely to be a coincidence. In this case the link appears to be the German colonial period about 100 years ago. Red dwarf coconuts have been found in other territories with a similar colonial history—Papua New Guinea, the Caroline Islands, Samoa, and elsewhere in the Pacific.

### Summary

The tall coconut variety is likely to have been on the coasts and offshore islands of East Africa for a thousand years or more. The yellow fruited form, "mnazi mweupe," may be called "kipemba" on Zanzibar but on the mainland the name "kipemba" is used for a red fruited dwarf known as "kitamli" on Zanzibar. The name "King Coco-

nut" is also recorded and, in the absence of any positive identification, has possibly been applied to the "mnazi mweupe" and the "kitamli" types.

A likely explanation is that the King Coconut or Rath Thembili was introduced to Pemba as the "Tambili" (from either Sri Lanka or India) and the name became corrupted to "kitamli." When taken from Pemba to Unguja (Zanzibar) that name was retained but on the mainland the name "kipemba" was adopted. The introduction may have been comparatively recent, maybe 150 to 250 years ago, and from India since the name "Indian Coconut" is still well established in the source references and in the memories of a few people. Once established in Pemba it then became a source for other parts of East Africa.

A red dwarf coconut that has been identified in countries in West Africa and the Pacific could share similar origins. One hundred years ago, under colonial influence, these could even have originated from Pemba, in which case, the recent introduction of Cameroon Dwarf to Tanzania might be a reintroduction.

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### LITERATURE CITED

- BARRETT, O. W. 1912. Varieties of coconut. *Philippine Agriculture* 5: 251-253.
- BAUMANN, O. 1896. *Sansibar—Archipel*, 1. Heft: die Insel Mafia und ihre kleineren Nachbarinseln, Denker und Humboldt, Leipzig.
- . 1897. *Sansibar—Archipel*, 2. Heft: die Insel Sansibar und ihre kleineren Nachbarinseln, Denker und Humboldt, Leipzig.
- . 1899. *Sansibar—Archipel*, 3. Heft: die Insel Pemba und ihre kleineren Nachbarinseln, Denker und Humboldt, Leipzig.
- CRASTER, J. E. E. 1913. Pemba, the spice island of Zanzibar. T. Fisher Unwin, London, Leipsic.
- HERZ-SCHWEIZER, M. 1986. Breeding research, Zanzibar. Final Report, National Coconut Development Programme, Tanzania.
- KRAIN, E. AND J. A. ISSA. 1991. Report on first observations in the variability of the Pemba Dwarf. Contribution to the Annual Report of NCDP 1990/91, NCDP Zanzibar, Zanzibar.
- MACMILLAN, H. F. 1934. A handbook for tropical planting and gardening. Reprinted 5th edition, Jodhpur, India 1984.
- MOHAMMED, A. MN. 1986. A short history of Zanzibar. Al-Khayria Press, Zanzibar.
- OHLER, J., A. MOGEA, AND H. C. HARRIES. (in preparation). *Palma Indica*.
- PEARCE, F. B. 1920. Zanzibar, the island metropolis of Eastern Africa. T. Fisher Unwin, London.
- PURSEGLOVE, J. W. 1972. Tropical crops, Monocotyledons. Longman, London.
- RUMPHIUS, G. 1740. *Herabrium Amboinense*. Chapter 1, Volume 1. Amsterdam.
- SCHUILING, M. AND H. C. HARRIES. 1992. The coconut palm in East Africa. I. East African Tall. *Palm Enthusiast* 9(3): 22-35.
- SHERIFF, A. M. H. 1981. The East African Coast and its role in maritime trade. In: G. Mokhtar (ed.). General history of Africa, ancient civilizations of Africa, Vol. II. UNESCO, Heinemann, London.
- STUHLMANN, F. 1909. Beiträge zur Kulturgeschichte von Ostafrika. In: *Deutsch-Ostafrika*. Wissenschaftliche Forschungsergebnisse über Land und Leute unseres ostafrikanischen Schutzgebietes und der angrenzenden Länder. Dietrich Reimer, Berlin, pp. 21-24.
- VOELTZKOW, A. 1920. Reise in Ostafrika in den Jahren 1903-1905. Stuttgart.
- WILLIAMS, R. O. 1949. The useful and ornamental plants in Zanzibar and Pemba. Zanzibar.

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