PALMS OF KENYA.

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The palms, together with the *Euphorbias*, Screw Pines (*Pandanus* spp.) and some of the *Dracaenas* (the " palms " of S.W. England) are, owing to their massive nature, seldom collected botanically, and the object in writing this article is not to produce an exhaustive botanical treatise, but to exhibit the gaps in my knowledge of the Kenya palms. Information as to the Palmae may be found in any book on the Monocotyledons and an account of the separate species is most easily obtainable in the " Flora of Tropical Africa." A few general facts of common interest, however, may not be amiss here.

Contrary to the belief of many English people (and novelists in particular) palms do not indicate lush tropical growth. Though they are almost confined to the tropics they usually occupy poor secondary sites, e.g. swamps, and are seldom found in " high forest." Though palms from the evidence of their inflorescences formerly branched, the modern species are now nearly all one stemmed, and the large size of the leaves is an adaptation to this monaxial condition. Palms, unlike Dracaenas, do not increase in girth by the formation of secondary tissues. Any increase in the diameter of the stem is due to the enlargement of the individual cells. This lack of secondary growth must be one of the main reasons for the monaxial habit. Once the growing point has been killed the whole plant usually dies.

The leaves of the palms are peculiar. The vestige of the original leaf may be seen in the scale at the top of the leaf stalk. The present leaf originates at the back of old leaf and as it develops becomes folded. A layer of tissue is cut off either at the top or the bottom (or sometimes on both sides). These strips die and are easily seen in an unfolding leaf. When the leaf is slit down to the base and intercalary growth takes place the pinnate type is formed: when it is only partially split and no intercalary growth is formed the palmate leaf results. The question as to whether the top or bottom layer dies is of some use in classification. If the pinnae are folded in a series of upright Vs they are known as induplicate; if in a series of inverted Vs reduplicate.

There are as far as I know only seven indigenous species of palms in Kenya. They are:—

Phoenix reclinata, Jacq.
Raphia ruffia, Mart.
Raphia monbuttorum, Drude.
Borassus flabellifer var. *aethiopicum*, Warb.
Hyphaene coriacea, Gaertn.
Hyphaene parvula, Becc.
Elaeis guineensis, Jacq.

The following key may be useful.

1.	Leaves fan shaped	2
	Leaves pinnate	3
2.	Stem carrot shaped	*Borassus*
	Stem cylindrical, often branching	*Hyphaene*
3.	Leaves more than 30 feet long	*Raphia*
	Leaves less than 30 feet long	4
4.	Leaflets induplicate, stem slender, leaves green, 3 carpels free	*Phoenix*
	Leaflets reduplicate, stem robust, leaves tend to be greyish green, 3 carpels united	*Elaeis*

Phoenix reclinata, Jacq.

Mkindu (Swa.); Muchindu (Dig.); Mukindu (Kik.); Mchongana (Tav.), Kigangatchi (Tei).

This palm has a wide distribution in the Colony and occurs at sea level and as high as 7,000 feet altitude. It usually occurs in swamps or along river banks, but on the wet tops of the Bura Hills it appears in the scrub, though chiefly round stream sources. The palm forms dense thickets in places near Lake Jipe in the Taveta district.

The leaf midribs are largely used in basket making.

Raphia spp.

The Raphias have a very limited distribution in this country. That there are two species rests largely on assumption.

Raphia ruffia, Mart.

The Swahili and Taveta names of Mwaale may be confused with the Digo name Mwale or Muari (*Bombax rhodophagnolon*). This striking palm, which grows to about 35 feet, has leaves up to 50 feet or more long. The oval fruits are covered with shiny brown scales and look somewhat like a conifer cone. I have only seen this species in the swampy stream bottoms in the Ramisi valley and in the Kitobo and lower Lumi River districts at Taveta.

The raffia fibre is obtained from the unexpanded leaves. The midribs are used for roofing poles, doors, and ladders.

Raphia monbuttorum, Drude.

This species grows in Uganda and is more than probably the species which grows on the banks of the Yala in the Kakamega forest and along the Isiolo River north of Mt. Kenya. I know of no botanical specimens having been collected there. The " Flora of Tropical Africa " is rather vague as to the differences between the two species, and the recorded difference of the shape of the fruits does not read convincingly to me. Probably better material has been collected since the account was written.

Borassus flabellifer var. *aethiopicum*, Warb.

The Palmyra Palm; Mvumo (Swa. Mombasa); Mtappa (Swa. Lamu); Mugumo (Dur.).

This interesting palm with its large palmate leaves and a stem tapering from a bulge two-thirds of its height is not at all common and as far as I am aware is confined in Kenya to a narrow coastal belt. Specimens are most easily seen south of Mombasa, but it occurs in the Witu district and there is one specimen by the Station Road in Mombasa. Probably tappers of palm wine have reduced its numbers. I have not seen the palm between Mombasa and the Tana. It is found in the Eastern Province of Uganda.

Hyphaene spp.

The Doum palms are very confused as " many of the species have been described from imperfect material and are ill defined." Some species have been described mainly on the shape of the fruits which appear to me to be somewhat variable. I have only been able to recognise two species, *Hyphaene coriacea* and *H. parvula*.

Hyphaene coriacea, Mart.

Doum Palm; Mkoma (Swa.); Maramba (San.); Mchumbuli, Medi (Bon.); Irara (Tav.).

This palm, which grows to a height of 50 feet, may branch as many as four times and the branching though apparently dichotomous, is really axillary.

It is a very common palm on the Coast. It occurs occasionally in the Nyika country and is common near Lake Jipe at Taveta. The Doum palm in the Kitui district is probably this species.

Though its original habitat was probably forest and swamp edges it has been spread by elephants and humans, the fruits being edible, and is now widely spread in bush and open country. All the Doum palms are fairly fire resistant and if the upper parts get killed they appear to be able to sucker with ease. Hence the occurrence of extensive areas of Doum palm scrub.

The leaves are used for their fibre and for thatching, but their main use appears to be for palm wine tapping, the resulting drink being considerably stronger than that from the coconut palm.

The fruits of *H. coriacea* are described as turbinate (top-shaped) pyriform (pear-shaped), shallowly furrowed, broadest above the middle and flat at the apex. As would be expected the shape is not wholly constant. That the fruit is a possible source of vegetable ivory has been long known, but it has not been developed in Kenya though there is a large export from the Sudan and it is now being exploited by the Italians.

Hyphaene parvula, Becc.

Kikoko, Mkoko, Mkoma (Swa.).

This is a distinct species. It is a small, normally unbranched, palm growing to about 15 feet. I have only seen it on poor sandy soils south of Mombasa and near the sea shore at Kipini, and also on the burnt over grasslands on the Shimba Hills. Besides its small size and monaxial habit its fruits are distinctive. They are about two inches long and shaped like a cottage loaf.

H. crinata, Gaertn., which is an unbranched palm with oblong or obovate fruits (like a large potato) may occur but I have not seen it.

H. thebaica, Mart., which is a simple or branched palm up to 30 feet having obliquely ovoid and obscurely trigonous (3 angled) fruits, has been collected at Lamu, but I think it is probably an unusual form of *H. coriacea.* Though the argument is not sound, I cannot see from the point of view of habitat any reason for more than two species in the coastal belt. *H. thebaica* may be the species which occurs in Samburu and the Northern Frontier Province.

Elaeis guineensis, Jacq.

Guinea Oil Palm; Mposi (Tav.); Mchi'kichi (Swa.).

The Swahili name may be confused with that of *Bauhinia thonningii,* which is "Mche'keche" or with that of many of the *Papilionaceae,* which have the name " Mcheke'cheke."

This palm has a very limited distribution. It is not uncommon in the Ramisi valley and is scattered through S. Digo. Though often riparian it is not uncommon in drier sites. I have seen it in light forest at Taveta and have heard that it also occurs in the Sabaki valley near Malindi and near the Tana below Embu. If it occurs at Mkunumbi, between Witu and Lamu, its Pokomo name is Mchengwa, but its occurrence needs confirmation.

The palm is chiefly valued in Kenya for the fine strong fibre obtainable from the leaves, but the oil from the fruits is used for various purposes. The fruits compare very unfavourably in oil content with those of the cultivated West African form.

A number of exotic palms are to be seen in the Nairobi Arboretum and there are a few on the old Government Farm at Mazeras. There are only three exotics commonly grown in the country however:

Phoenix dactylifera, L., the Date Palm; Mtende (Swa.);
Areca catechu, L., Mpopoo (Swa.), the Betel Nut Palm; and
Cocus nucifera, L., Mnazi (Swa.), the Coconut Palm.

I shall be glad to receive information as to the occurrence and distribution of indigenous species.