

Principes, 29(4), 1985, pp. 151-155

Further Notes on *Livistona carinensis* in Somalia

CHRISTINE BARBIER

Laboratoire de Botanique, Institut Botanique, Montpellier, France

I had the opportunity to visit the Northeastern part of Somalia during the winters of 1982 and 1983 (one month in 1982 and three months in 1983). During the last visit, I devoted a part of my time in the Bosaso region to a closer observation of the little-known palm tree, *Livistona carinensis* (Chiov.) J. Dransfield & N. Uhl, previously known as *Wissmania carinensis* (Chiov.) Burret (1943). As reported by Monod (1955) Chioventa (1929) described the palm in his *Flora Somala*. There are very few references to this palm in the literature; Moore describes and illustrates it in his article "Wednesdays in Africa" (Moore, 1971). Its conservation status is discussed in the "IUCN Plant Red Data Book" (Lucas & Syngue 1978) and Dransfield and Uhl (1983) transferred the species to *Livistona*.

Distribution of *Livistona carinensis* in Northern Somalia

The oasis described by Chioventa and Hemming. Concerning the description of the oasis of Uncud near Carin (Chioventa), I cannot certify its existence because I have not found out where the oasis is. It is probably the better-known oasis of Carin itself.

In 1973, Hemming speaks about 2 oases where *Livistona carinensis* is to be found: Carin and Galgala. He says (p. 21): "Galgala is situated at 900 m and is an oasis in the dry mixed bush. There is a spring of clear sweet water which is used

to irrigate small banded fields. The most characteristic natural vegetation of the oasis is the tall unbranched palm, *W. carinensis*, which attains 30 m. *Wissmannia* palms are also found in the lower oasis at Carin, but it is a rare tree . . ." and p. 24: "In the area of Carin oasis the water table is generally within one meter of the surface, which is stony or gritty, puffed-up and somewhat saline. The oasis, which supports quite dense vegetation, is characterized by the tall unbranched palm *W. carinensis* to 30 m . . . *Wissmannia carinensis* is the tallest palm growing in the region and it has an extremely limited distribution. It can provide timber for building but uncontrolled cutting now threatens the species with extinction and its immediate protection is recommended."

My Observations

Stations visited in 1983, Carin. The first oasis I was able to visit is Carin at 49°13' long./10°59' lat., 40 km from Bosaso on the northern coast, at an altitude of 340 m. The oasis is small, about 500 m long with 300 date palms owned by private farmers. On the plate no. 7 in his article, Hemming (1973) shows a view of the "oasis seen from the edge of the Carin gap." The *Livistona* palms are clearly distinguished and there are about fifty trees. Ten years after, there were no more adult palms; only young trees, not exceeding 1 m, grew along the irrigation ducts.

Galgala. As quoted by Hemming (1973), Galgala is a mountain oasis, at



1. The mountain oasis at Galgala.

49°03' long./10°59' lat. and at an altitude of 875 m, 30 km west from Carin. There are about 3,000 date palms distributed among private gardens and the water comes from a spring. The tall *Livistona* rise above the date palm trees (Figs. 1,2), and as a consequence they are very easy to count: only 15 tall *Livistona* remain. Nevertheless, the regeneration seems to be excellent. In the 30 gardens visited, I counted 120 plants with a minimum height of 20 cm and a maximum of 1.5 m together with hundreds of one-leaved plantlets. Following the information given by the inhabitants of Carin and Galgala, I visited three other oases where *Livistona* still grows, oases that have never been mentioned in literature as far as I know. They are Marajo, Duud Shabeel, and Xamur (pronounced Hamour).

Marajo. Marajo is a little oasis, the same size as Carin, 20 km westward from Galgala at an altitude of 690 m. Thirty adult *Livistona* are still growing among

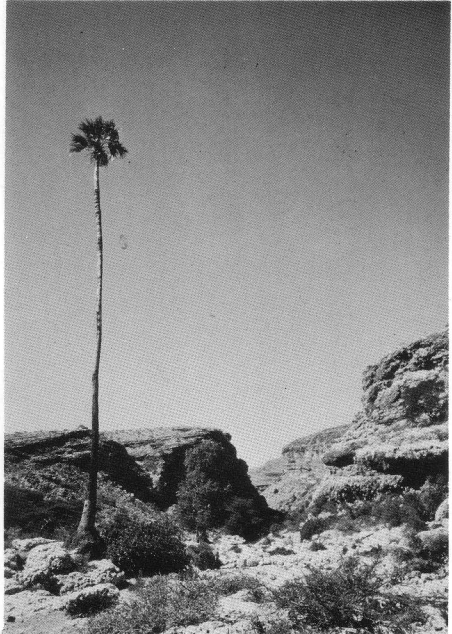
the date palms and a lonely one is dwelling near the spring located in the upper part of the grove (Fig. 3). Many young trees are growing at the foot of the tall ones. Unfortunately, the future of *Livistona* in Marajo is threatened; besides a fire which partly destroyed the oasis some years ago, the water has now settled deeper into the chalk layer and irrigation is no longer possible. The only *Livistona* to survive is the isolated tree just near the water.

Xamur and Duud Shabeel. Xamur, 10 km far from Carin, on the road to Bosaso, 49°06' long./11°06' lat. at an altitude of 210 m is a small oasis with 400 date palms. Duud Shabeel is very close to Xamur and almost deserted. In both oases, *Livistona* can no longer be seen but I have found many young trees, especially in Xamur along the canal ducts.

It seems that there are other oases in the region where *Livistona* grows, according to the Somali people, but oases are remote and inaccessible by road. How-



2. *Livistona carinensis* towers above date palms.



3. A lone *Livistona* beside the spring at Marajo.

ever, I assume that *Livistona* trees are neither growing westward in the region of Erigavo nor eastward near Alula (both regions I visited also). *Livistona* seems to be restricted to the Bosaso district and more specially within a 40 km radius of Carin.

The Tree

A close observation of the crown is not easy, due to the tallness of the palm. As a consequence, I was not able to collect either adult leaves or inflorescences. It was not possible to cut a tree because the palms are the farmers' property, nor to climb them because of the strong wind blowing in Galgala in the winter when I visited the grove. I have only collected an old fallen inflorescence, and a young tree, 90 cm high. Nevertheless, I was able to take some pictures of the crown with a telephoto lens. All the adult palms, both in Galgala and in Marajo, have approximately the same

height, that is, 25 to 30 m. The trees correspond exactly to the description given by Burret and Monod. Some details that I observed may be added. The trunk is straight and slender with the rings of scars left by the fallen leaf bases. I have observed holes made by a woodpecker on one palm. All the palms growing in Galgala and Marajo present a bulging base and the numerous roots are sometimes apparent (Fig. 3), depending on the place where the tree grows. A transverse cut of the trunk shows its bare longitudinal fibers very closely woven, a quality that makes the palmwood much appreciated by the Somali people as building material. The adult palmate leaves (observed only with a 200 mm telephoto lens), seem to have very well developed spines. Each leaf seems to subtend an inflorescence (Fig. 4). The inflorescence is at first erect but hangs when older to a length of about 2 m (Monod 1955).

As I already mentioned, I had no



4. The crown of *Livistona carinensis* with windblown leaves and inflorescences.

opportunity to get an adult leaf or inflorescence except those fallen to the ground in Galgala. This one corresponds to the description made by Monod and has brown striated bracts. The young uprooted tree was 90 cm high with 13 equivalent roots, 30 cm long and three others a bit longer to 50 cm, with leaves 90 cm long, and petiole to 50 cm (Fig. 5). The description of the leaves corresponds to that in Chioventa (1929) with a ligule and spines with a swollen basis; the segments are glabrous with a prominent midrib and secondary veins joined by transverse ones. The segment margins are thick, as stated by Chioventa. The fruits are globose, 7 mm in diameter and brown. As for the flowering time (Fig. 4), old and new inflorescences are to be found on the palm at the same time. The cycle seems to be a little more complicated than that described by Monod. Regarding the fruits, there were many on the soil at the foot of the palms and I have collected some, both in Decem-

ber 1982 and in December 1983. I cannot ascertain that these fruits necessarily correspond to an annual production.

Germination Trials

In the beginning of 1983, I sowed 10 fruits collected in 1982 in petri dishes in a meager supply of water. After 3 months, 4 fruits have germinated and are still growing in the Botanical Laboratory's greenhouse in Paris. I have also sown the fruits collected in December 1983 in the same conditions. Of 10 fruits sown on December 16, 1983, 2 have germinated 3 months after and only one plantlet is still alive in my home in Paris. I sowed 15 other fruits (1983 collection) on March 20, 1984; 3 have now germinated.

In conclusion, germination seems to be good (as seen in the field) and occurs within 2 or 3 months of sowing, a quite normal delay for palms.

Some fruits collected in 1982 have been



5. Leaf of a young *Livistona carinensis*.

sown recently on the 15th of April to test the germination power after one year. It is too early to reach conclusions about their viability. Of approximately 50 seeds planted at Fairchild Garden in March 1984, 41 germinated and the developing seedlings seem to present no cultural problems.

Livistona and Its Future in Somalia

As I have already said, the wood of *Livistona*, reported to be rot and termite resistant, has been overexploited for years by the inhabitants of the groves. They are now aware of the increasing scarcity of the palms and every farmer possessing young trees in his garden protects them and does not allow them to be cut. Cutting

down an adult tree is a decision taken by the farmers collectively and concerns only trees which are nearly dead. However, despite the thousands of seedlings seen in the gardens in Galgala, it seems that the rapid replacement of the old trees is not possible due to lack of immediate successors. I think that there is a missing generation, the middle one. Indeed, only old dying trees and young trees (maximum 1.5 m high) grow in the groves which were visited.

Whether high mortality is a consequence of the tree reaching a certain age or due to overexploitation of the middle generation is a problem still to be solved. The Marajo site for *Livistona* is doomed to disappear since the water for the growth of the palm is depleted. Three sites will remain: Xamur and Duud Shabeel with only young trees and Galgala with the last adult specimens, but for how long? Nothing is known of the present status of *L. carinensis* in Arabia.

The future of the tree may lie in its introduction into cultivation; populations have been established in several botanic gardens and private collections.

LITERATURE CITED

- BURRET, M. 1943. Die Palmen Arabiens. Botanische Jahrbucher 73: 145-190.
- CHIOVENDA, E. 1929. Flora Somalia. Vol. 1. Sind. Ital. Arti Grafiche, Rome.
- DRANSFIELD, J. AND N. UHL. 1983. *Wissmannia* (Palmae) reduced to *Livistona*. Kew Bull. 38: 199-200.
- HEMMING, C. F. 1973. An ecological classification of the vegetation of the Bosaso region. Working paper, FAO, Rome, 67 pp.
- LUCAS, G. L. AND H. SYNGE. 1978. The IUCN Plant Red Data Book. IUCN, Morges, Switzerland.
- MONOD, TH. 1955. Remarques sur un palmier peu connu: *Wissmannia carinensis* (Chiov.) Burret. Bulletin de l'Institut Francais d'Afrique Noire, ser. A, 17: 163-173.
- MOORE, H. E. 1971. Wednesdays in Africa. Principles 15: 111-119.