stricted to rather inaccessible areas of South East Africa and consequently is a relatively recent discovery. It is a small, rather short-stemmed palm and it may previously have been confused with *Phoenix reclinata* because Beccari suggests that the plate to illustrate the latter species in Martius' *Historia Naturalis Palmarum* actually shows *Jubaeopsis*.

Subfamily Arecoideae

Sclerosperma: This genus of little-known palms contains three species. All these are small, caespitose palms with short stems scarcely three feet high and having congested internodes. The leaves are small, irregularly pinnate and with broad leaflets. The spadix is simple and because of this Drude placed *Sclerosperma* near to *Geonoma* of Central America, but the relationship may not be close. All species are palms of the forest undergrowth. The best known is *S. Mannii*, first described by Wendland and Mann from the Gaboon. I have seen it in primary forests in the Cameroons.

Podococcus: This resembles *Sclerosperma* in its stature and general appearance but the leaflets are narrower and the stem is more cane-like with distinct internodes and may reach a height of eight feet. The original description referred to one species, *P. Barteri*, of swampy areas in the Niger delta and a second species, P. *acaulis*, has since been described. Botanically, *Podococcus* is allied to *Sclerosperma* whose isolation it shares.

Subfamily Coryphoideae

This group of fan palms, is virtually without representation in Africa, although *Chamaerops humilis* does occur along the north African coast. A second genus, *Wissmannia*, with one species, *W. carinensis*, is known from Somaliland.

Livistona Jenkinsiana

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Livistona Jenkinsiana, the only wild Indian species of the genus so far recorded, is an erect graceful palm of about 7 to 10 meters high (to over 30 feet) with an unbranched cylindrical stem and a terminal crown of fan-shaped leaves. This beautiful palm is named after Major Jenkins, whose early plant collections in Assam are well known. The reniformly flabellate leaves measure to 1-2 meters (six feet or slightly more) in diameter and the margin of the blade is toothed nearly half its radius (Fig. 58).

The young stems are covered with dry leaves or rather with the lower parts of the petioles, while the older stems are marked with the hard, black, long and narrow scars of the fallen petioles. Consequently, the stem surface is rough, and the diameter of the stem is seldom more than a foot.

The inflorescence of this palm is interfoliar, producing many bisexual pedi-

58. Seedlings of *Livistona Jenkinsiana* grown in a shady corner near Eyo village at 400 meters altitude, Siang Frontier Division, NEFA. Photograph by R. S. Rao.

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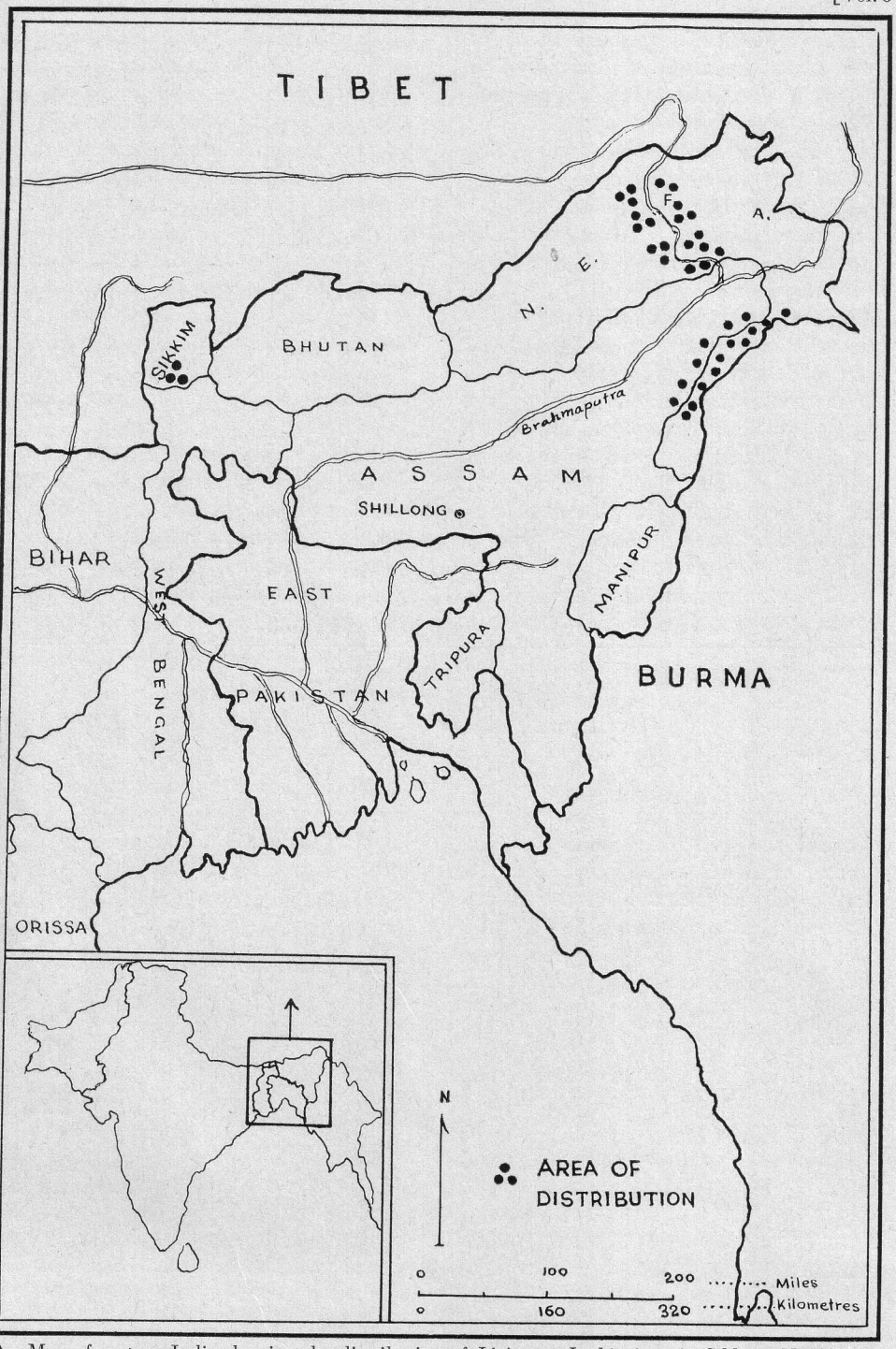
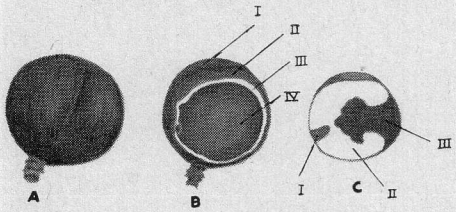


59. Map of eastern India showing the distribution of *Livistona Jenkinsiana* in Sikkim, NEFA and upper Assam.

cellate flowers in July and August. Only a few bunches of fruits are produced in October and November. The drupe with its single seed is globular and nearly an inch in diameter. The pericarp of a mature fruit consists of three distinct layers, the bluish-black epicarp, a fibrous and succulent mesocarp, and a white and stony endocarp. The brown inner integument of the seed is much thickened at the chalazal end and grows into the endosperm as a convoluted stalklike structure (Fig. 60).



60. *Livistona Jenkinsiana.* A, mature fruit. B, fruit with a portion of pericarp removed (I, epicarp; II, mesocarp; III, endocarp; IV, seed), C, longitudinal section of mature seed (I, embryo; II, endosperm; III, invaginated integument).

This palm is distributed sparsely in the Teesta Valley of the Sikkim area, along the foot hill region of Assam and in the outer Himalayan valleys of Siang, Lohit and Tirap frontier divisions of North East Frontier Agency (NEFA) and also the adjoining Naga Hills area (Fig. 59) up to an altitude of 1000 meters where the rainfall is 250-350 cm. per annum and the soil conditions are mostly sandy loam with a laterite mixture. In the wild state, the species has been observed by the writers during their explorations in NEFA growing in small groups along the slopes, separated from one another and usually mixed with wild species of *Musa* and other plants of moist evergreen forests (Fig. 62). The fruits from some of the wild plants have been collected and sent to Nat J. De Leon, Miami, Florida, for germination and further study. It was reported by him that this species is a new addition to the cultivated palms of the United States. Due to the utility of the leaves, this palm is also cultivated in small groves near most of the tribal villages in these areas, sometimes in combination with areca nut palm, *Areca Catechu.*

The fan-like leaves are primarily used for thatching the huts of the Lepchas of Sikkim and of the tribal peoples of NEFA areas. They are used in many ways in upper Assam as they are admirably adapted by their lightness, toughness and durability for covering the roofs of palanquins (boxlike structures with handles formerly used as transport), for the roofs of boats and also for making umbrella-like hats. The endosperm of the seed is also edible.

The writers express their grateful thanks to Dr. J. C. Sen Gupta, Chief Botanist, Botanical Survey of India, for his kind encouragement.

61. A grove of *Livistona Jenkinsiana* with one tree of *Areca Catechu* in foreground, cultivated at Chengland village, 800 meters altitude, Tirap, Frontier Division, NEFA. Photograph by R. S. Rao.