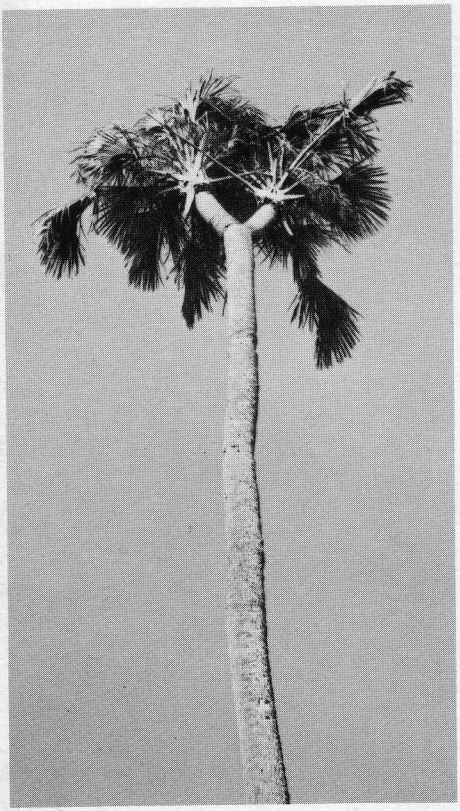
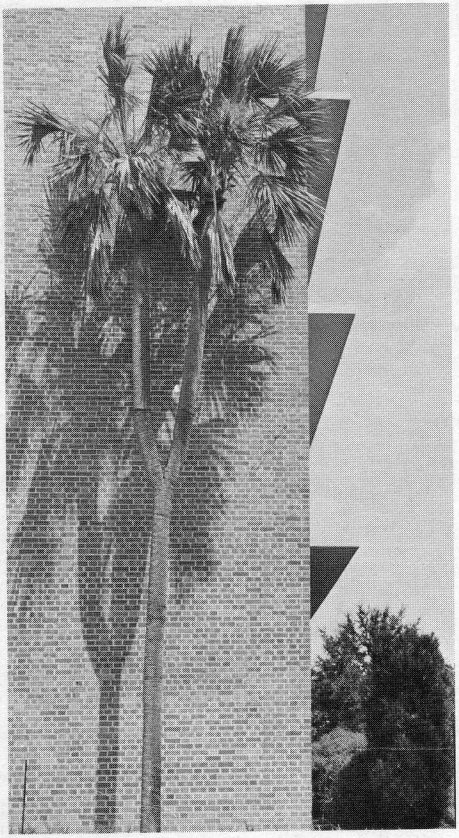


84. Two-headed *Sabal Palmetto* south of Perry, Fla. Photo W. H. Hodge.



85. Branched *Sabal* on Florida State University campus. Photo W. H. Hodge.

about 29 miles south of Perry. The other was undoubtedly also originally a wild plant obtained locally but it has been transplanted to serve as an unusual specimen against one of the new buildings on the Florida State University campus at Tallahassee. To my knowledge this is the first record of the horticultural use of an abnormal two-headed palm.

A New Species of Arenga from Borneo*

H. E. Moore, Jr. and W. Meijer

Arenga (*Arenga*) retroflorescens H. E. Moore et W. Meijer, *sp. nov.*

Caules caespitosi et coloniam constituentes ad 8 dm. alti. Folia longe petiolata regulariter pinnata, eis ad basin exceptis, pinnis utrinque 22-23 anguste obcuneatis. Inflorescentiae spicatae unisexuales, a basi ad apicem caulis adolescentes, bracteis fibrosis pluribus, florum masculorum staminibus ca. 36, florum femineorum ovariis trilocularibus triovulatis, fructu triloculari, seminibus 2 (vel 3?).

*The senior author wishes to acknowledge support from National Science Foundation Grant GB-1354 and assistance from Dr. W. J. Dress with refinements of the Latin description and

86. Plants of *Arenga retroflorescens* at type locality in Sabah.

Caespitose and colonial with rhizomes ca. 2 cm. in diam. and stems, when developed, prominently ridged at the nodes, to 8 dm. high, 3.8 cm. in diam., internodes to ca. 5 cm. long. Leaves several in a tuft from the ground in young plants or apical on older stems; sheaths fibrous, blackish, densely brown-tomentose at least basally, split nearly to the base opposite the petiole and fibrous-margined, produced apically in a fibrous ligule to ca. 25 cm. long between the petiole and the stem; petiole to 1.8 m. long, buff- or brown-tomentose at the base next to the sheath when young and there becoming densely dark-brown puncticulate in age, elsewhere rounded below, channelled above and covered for most of its length when young with brown membranous appressed medifixed narrow scales but at length becoming merely puncticulate; rachis 1.15-1.3 m. long, rounded below and when young densely covered with scales like those of the petiole, flattened with a central ridge and less scaly above; pinnae 22-23 on each side, the lower 3-5 on each side separated from the remainder by ca. 13 cm. and forming a cluster, the remainder more or less evenly spaced at intervals of 5-8 cm., all green above, pale with a thin waxy brown-puncticulate coat and brown-scaly midnerve below, exauriculate at the base, narrowly obcuneate with margins sharply toothed only near and at the irregularly truncate apex, the basal pinnae of a young leaf to 34 cm. long, 1.5-3 cm. wide, median pinnae to ca. 43 cm. long, 2.3 cm. wide, terminal pinna ca. 16 cm. long, 3 cm. wide, those from a mature leaf usually shorter and 1.9-2.5 cm. wide. Inflorescences developing in acropetal sequence, emerging from the leaf bases on young plants and penetrating the sheaths on older stems,

87. Spicate male inflorescence on "stemless" plants of *A. retroflorescens*.

88. Older stems of *A. retroflorescens*.

spicate, erect, apparently unisexual; staminate inflorescence ca. 29 cm. long, enclosed by about 9 bracts, those at the base short, those above progressively longer and soon breaking into black fibers, the uppermost longer than the spike; peduncle 18 cm. long; spike 11 cm. long, 2 cm. in diam., very densely flowered; staminate flowers 9 mm. long, reddish in bud, subtended by prominent sepal-like bracteoles, sepals 3 mm. high, strongly gibbous at the base, the margins rounded, more or less crenulate and minutely ciliate, petals acute but incurved in bud to form an obtuse and slightly depressed apex, 9 mm. long, 5 mm. wide, stamens ca. 36, the filaments very short, anthers linear, acute or even apiculate to emarginate at apex: pistillate spike shorter than the staminate but with bracts extended much beyond it, the whole inflorescence including bracts ca. 35 cm. long; peduncle ca. 9 cm. long; spike 10 cm. long, nearly or quite enclosed by the black bract fibers; pistillate flowers 10 mm. high, red-brown, subtended by a pair of marginally imbricate crenulate bracteoles 3 mm. high, sepals 5 mm. high, 8 mm. wide, corolla 10 mm. high, the tube only 2 mm. high, lobes 8 mm. long, staminodes absent (?), pistil strongly triquetrous, 8 mm. high at anthesis, trilocular, triovulate. Fruit (immature) strongly triquetrous, 1.7 cm. high, 2.2 cm. in diam., trilocular with 2 (-3?) seeds, these 9 mm. high when not fully developed but the locule 10 mm. high, endosperm homogeneous.

MALAYSIA. SABAH: at edge of mangrove along jalan Uchung Tanjong, Sepilok Forest Reserve near Sandakan Bay, 15 miles west of Sandakan, Jan. 15, 1964, *H. E. Moore, Jr. & W. Meijer 9162* (BH, holotype; SAN, isotype).

During a visit to the United States in 1963 and early in planning for joint field work in January, 1964, the junior author had raised questions as to the identity of a strange *Arenga* which he had found in the Sepilok Forest Reserve

near Sandakan. Thus a special effort was made to see it in the field and to secure adequate specimens for study. The result has proved especially rewarding since the species is most unusual.

The Caryotoideae, including *Arenga*, *Caryota* and *Wallichia*, have generally been characterized, among other peculiarities, by the basipetal development of inflorescences commencing from the top of the stem and flowering downward until sometimes the last develops from nodes beneath the surface and emerges through the soil. To find a species of *Arenga* in which this pattern is reversed with acropetal development of inflorescences is both exciting and perplexing as it raises questions for which there is no answer at present. The epithet *retroflorescens* (flowering backward) has been used to point up this seemingly anomalous behavior with respect to its congeners, though not to most other palms.

So unusual is this behavior that the authors spent some time examining plants in the field. Quite apart from our own observations, the stems of those plants which had produced them also provide evidence, for there are inflorescence scars at successive nodes from the base to the new inflorescences among the leaves.

There is some suggestion that an acropetal sequence of flowering may exist in some of the smaller species formerly placed in the genus *Didymosperma*, but unfortunately sufficient material has not been seen in the herbarium or in the wild to verify the suggestion. The whole problem of flowering sequence in the subfamily is one that merits attention.

We found only one rather extensive colony of this palm in Sepilok but the junior author has found it common in the Labuk delta. As to its relationship, it surely belongs in section *Arenga*, both from the habit and the trilocular, triovulate pistil. It differs from all species currently included in that section not only in acropetal development of inflorescences but in the spicate inflorescences. The general aspect is rather that of *Arenga Engleri* from Formosa with which it also agrees in having relatively few stamens. The narrow pinnae at once distinguish A. *retroflorescens* from three other indigenous species of Borneo — A. *brevipes*, A. *undulatifolia*, and Beccari's *Didymosperma borneense* which has not yet been transferred pending study of its relationship to A. *caudata*.

Palm Hunting Around the World

HAROLD E. MOORE, JR.

II. Malaya and Sarawak

Kuala Lumpur, capital of Malaysia, is a busy city seemingly expanding in every direction. Palm country lies nearby, but this first stop in early December was principally to establish contact with forestry officials, to obtain information about and hopefully to make plans to visit the Langkawi Islands before continuing to Singapore to work with the collections and library at the Botanic Gardens.

The scaly-fruited palms (subfamily Lepidocaryoideae) have long interested Dr. Furtado who, though retired, still works at the Botanic Gardens. At one time, there were more of these palms in the garden collections than there are today but there is a wealth of other palm material in mature state — handsome *Rhopaloblaste ceramica*, the curious *Borassodendron Machadonis*, *Orania*