

Principes, 39(2), 1995, pp. 100–101

A New Species of *Gronophyllum* from the Bismarck Archipelago

FREDERICK B. ESSIG

Department of Biology, University of South Florida, Tampa, FL 33620

Some time ago, John Dransfield forwarded to me a specimen of an unusual *Gronophyllum* that had come to the herbarium at Kew. It had been collected in 1975 by a team of British botanists on Manus Island, in the Bismarck Archipelago of Papua New Guinea. I have just now had a good look at the specimen, and as John suspected, it is a new species. Moreover, it exhibits an interesting combination of characteristics, and I believe would be worthy of cultivation. A name and description for the new species follow.

Gronophyllum manusii Essig sp. nov.

G. chaunostachydi similis sed foliis brevioribus, 1.5–2 m longis, pinnis effusis, nondum erectis, usque ad 65 cm longis, linearibus, apicibus praemorsis, inflorescentia minore, 12–14 rachillas gerendi, floribus masculis minoribus, 4.5 mm longis, 6 staminibus gerendibus, floribus femineis minoribus, petalis apicibus valvatis, sed vix sepalis longioribus, fructibus elongatis, valde curvatis, rubris differt. Typus: Papua New Guinea, Manus Province, Lorengau Subprovince, Manus Island, Mt. Dremsel summit ridge, alt. 740 m, *Sands et al.* 2880 (holotypus USF; isotypus K).

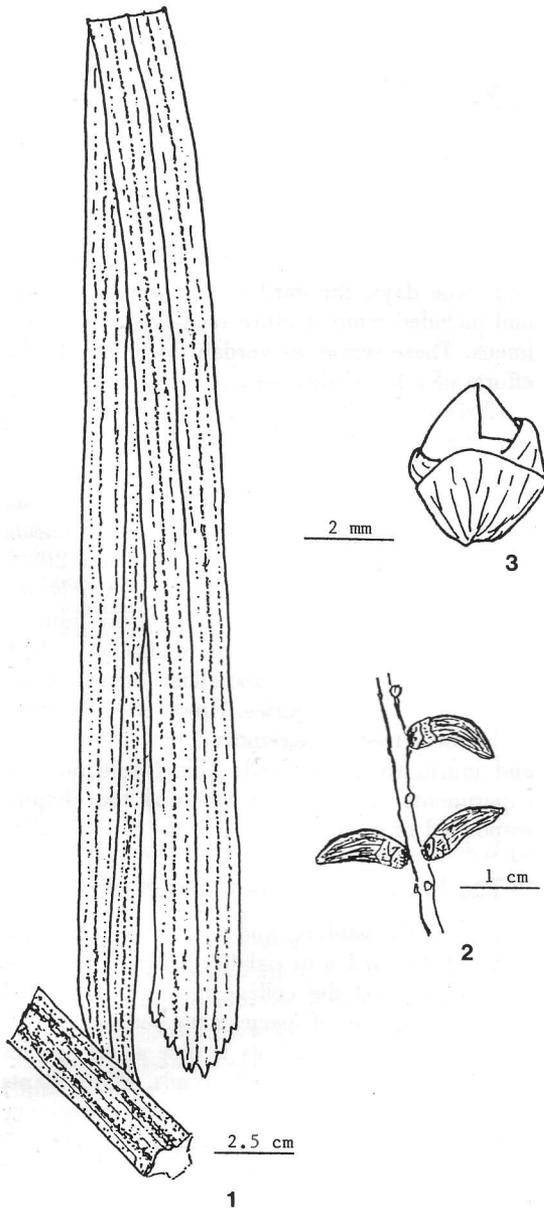
A solitary, slender palm to 20 (–40?) m in height; stem 10–15 cm diam. Leaves ca. 9 in a crown, spreading, 1.5–2 m long, sheath ca. 1 m long, petiole ca. 10 cm long, axis finely white and brown tomentose; pinnae ca. 40 per side, spreading, evenly spaced, linear, widest near the praemorse tips, to 60 cm long and 2.2 cm wide, lacking rammenta below. Inflorescence broomlike, with peduncle 18–19 cm long, 9 mm wide and 3.5 mm thick, splitting into 3 parts that immediately divide into 12–14 rachillae, these to 45 cm long and bearing up to 200 closely spaced decussate triads; all axes glabrous. Staminate flowers 5–6 mm long, sepals broadly lanceolate, 1–1.5 mm long, petals long-triangular, 5–6 mm long, loosely closed around the 6 stamens, anthers about equal-

ling the petals; pistillate flowers conic-ovoid, ca. 2.2 mm high, sepals broad, imbricate, petals ca. 1.5 times as long as the sepals, the valvate tips tightly closed in bud. Fruit 12–14 mm long, 4.5 mm wide, strongly curved, coral red when ripe; pericarp thin with exocarp tanniferous, mesocarp of a single series of large fibrovascular bundles, and the endocarp consisting of a prominent locular epidermis; seed with endosperm homogeneous.

Distribution. Known only from the summit of Mt. Dremsel on Manus Island, the westernmost island of the Bismarck Archipelago in Papua New Guinea.

Specimens Examined. PAPUA NEW GUINEA. Manus Province: Lorengau Subprovince Mt. Dremsel summit ridge, ca. 6 km inland from Pelekawa on the south coast, alt. 740 m, 29 November 1975, *Sands, Pattison & Wood* 2880 (holotype USF!, isotype K); Mt. Dremsel, alt. 630 m, 26 March 1981, *Kerenga & others* LAE 77518 (LAE, USF!).

The species exhibits an unusual combination of characters. It is a relatively large, single-stemmed palm, with its pinnae linear and evenly spaced, and its seeds with homogeneous endosperm. In these respects it is like *G. chaunostachys* (Burret) H. E. Moore, *G. mayrii* (Burret) H. E. Moore, and other species formerly included in *Kentia* Blume (non Adanson) (cf. Essig and Young 1985). Despite the reported height of the palm, however, the leaves and inflorescence of the new species are relatively small. The pinnae, moreover, are widest in the upper part, have praemorse tips rather than the briefly notched tips characteristic of the other large species (Fig. 1), and appear to be spreading rather than semi-erect. These vegetative features suggest affinity with the species formerly included in the genus *Nengella*. The inflorescence bears a scant 14 rachillae, compared to 40–50 in *G. chaunostachys*, and the peduncle is rather elongate. Species of *Nengella* typically have only 1–4 rachillae. In addition, the elongate,



1. The elongate pinnae of *Gronophyllum manusii* are broadest at the tip and praemorse. 2. The fruits of the new species are bright red and strongly curved. 3. The petals of the pistillate flowers, in particular the valvate upper portion, are not as long as in other species of *Gronophyllum*, but still cover the stigma, indicating that the plants are protandrous.

bright red fruit, although unusual in their strong curvature resemble those of a number of former *Nengella* species (Fig. 2). The structure of the fruit wall, with its simple tier of large fibrovascular bundles, appears to be similar to that of *G. pleurocarpum* (Burret) Essig & Young, and *G. gracile* (Burret) Essig & Young, both formerly in *Nengella*. *Gronophyllum manusii*, therefore, appears to be intermediate between the two formerly separate genera.

The petals of the pistillate flowers (Fig. 3) are less than $\frac{1}{2}$ again as long as the sepals, not twice as long or more as traditionally described for the genus (cf. Uhl and Dransfield 1987). This could lead to confusion with *Gulubia*, in which petals are scarcely longer than the sepals. The critical difference between the two genera, however, has to do with the order in which staminate and pistillate flowers attain anthesis. In *Gulubia*, the petals of the pistillate flowers do not cover the gynoecium in bud and the stigmas are exposed and receptive as soon as the large covering bracts fall from the inflorescence. Staminate flowers shed pollen 24 hours later (technically this is called protogyny). In *Gronophyllum*, the petals have valvate tips that tightly enclose the gynoecium in bud. Staminate flowers shed pollen first, and the pistillate flowers open later (protandry). The two genera are kept separate on this basis, despite similarities in the vegetative aspects of some species in the two genera. However, the whole complex of *Gronophyllum*, *Gulubia*, *Siphokentia* and *Hydriastele* is in need of critical reassessment.

LITERATURE CITED

- ESSIG, F. B. AND B. E. YOUNG. 1985. A reconsideration of *Gronophyllum* and *Nengella* (Arecoideae). *Principes* 29(3): 129-137.
- UHL, N. W. AND J. DRANSFIELD. 1987. *Genera Palmarum: a classification of palms based on the work of H. E. Moore, Jr. L. H. Bailey Hortorium and the International Palm Society*, Allen Press, Lawrence, KS.

ERRATUM

In the 1985 paper (cited above), Fig. 3b should read *Gronophyllum leonardii*, rather than *G. papuanum*. The latter name was used in an early version of the manuscript but changed in the final version. It is of no botanical standing.