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A New Species of *Gronophyllum* (Palmae) from Papua New Guinea

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In 1978, I participated in a botanical collecting expedition to a remote area of the Sepik River Basin of north central New Guinea, with Fred Essig and botanists from the Papua New Guinea Division of Botany. We were guests of the Carpentaria Exploration Company, which graciously provided us with food, lodging, and helicopter transportation at no charge. Upstream from the base camp along the Frieda River we encountered an interesting locality where a crystal clear stream emerges from some limestone hills. Several unusual palms were found there, including some still unnamed species of *Calyptrocalyx* (see Essig and Young 1981).

While scrambling up one of the treacherously pitted limestone hillsides one day, we quite unexpectedly discovered a striking new palm (Fig. 1). At first, it appeared obviously to be a species of *Nengella*, similar to other common species in the genus. It differed in a number of ways, however. It was a very slender, single-stemmed palm, with a trunk about 3 cm in diameter. It was growing on an exposed ridge under the full glare of the tropical sun, in itself a very unusual habitat for *Nengella*; most species in this genus occur in the undergrowth of dense forests. We later found other populations growing in the same sort of habitat on neighboring mountains.

Flowers (Fig. 2) of the new species were lavender-tinged rather than the pink usual in *Nengella*; fruit were quite globose (Fig. 3), not elongate as in *Nengella*, and as it

turned out, the anatomy of the fruit was quite different from that in known species of *Nengella*. Other distinctive, though not unique, features of the new species are the numerous rammenta on the pinnae, the large number of narrowly cuneate pinnae (Fig. 4), the globose fruits, the seeds with homogeneous endosperm, and the extremely elongate valvate tips of the petals of the pistillate flowers.

Later examination of the fruit anatomy of the new species revealed a structure (see accompanying paper) quite similar to that of *Gronophyllum chaunostachys*, which also has homogeneous endosperm. The well developed palisade layer, derived from the locular epidermis, in both these species, is unknown in *Nengella*, as is the development of an outer series of fibrous bundles separate from the inner fibro-vascular system. This gronophyllum-like fruit structure, in combination with typically nengella-like vegetative features, contributed to the decision to combine *Nengella* with *Gronophyllum* (Essig and Young, accompanying article). Therefore, the species is described as a species of *Gronophyllum*, although its exact affinities with other species in the genus, including those formerly placed in *Nengella*, remain somewhat unclear.

Gronophyllum apricum is a distinctive species, not easily confused with any other. The fruit, including the seed with homogeneous endosperm, is most like *G. chaunostachys* but the slender habit is very different from that giant palm. Vegetatively, the new species differs from other



1. *Gronophyllum apricum* growing in its natural habitat on an exposed limestone ridge near the Frieda River (reprinted from *Principes* 25(1):13, 1981).

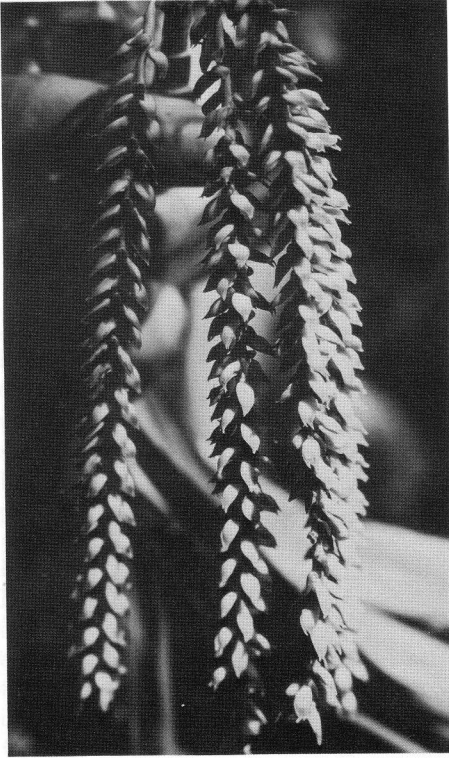
species in Papua New Guinea by its longer fronds with more numerous leaflets, its unusual exposed habitat, and its lavender flowers. Comparisons might be made with *G. microspadix* or *G. leonardii*, but these both have seeds with ruminant endosperm and are geographically remote from the known range of *G. apricum*. Furthermore, *G. leonardii* has multiple trunks, and *G. microspadix* has more linear leaves. Flower color is not known for either species. The epithet "apricum" refers to the sun-loving habit of the new species.

***Gronophyllum apricum* Young sp. nov.**

G. chaunostachys affinis sed habitu multo minori, foliis irregulariter pinnatis, pinnis anguste cuneatis, floribus staminatis cremeis apicibus purpureis, floribus pistil-

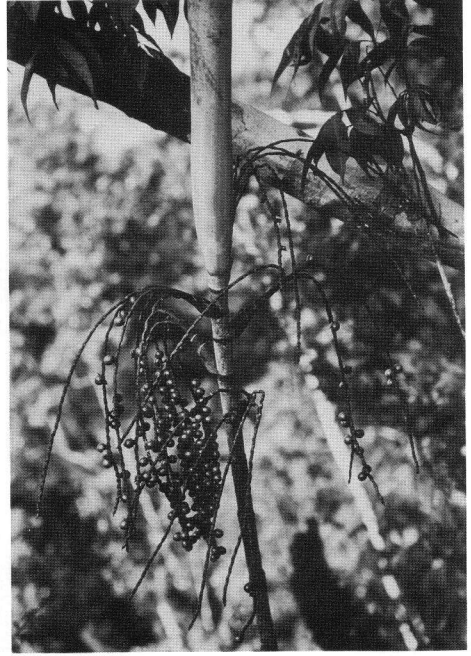
latis atropurpureis, fructibus fere globosis, 8×7 mm differt. Typus: Papua New Guinea, West Sepik Province, on ridge above Frieda River, near Carpentaria Exploration Co. airstrip, alt. ca. 300 m, *Essig & Young LAE 74082* (Holotypus LAE; isotypi BH, USF).

A solitary, slender palm to 5 m in height; stem ca. 3 cm diam. Leaves ca. 7 in crown; sheath 21–23 cm long, sparsely covered with dark red lacerate-peltate scales; petiole 12–18 cm long, convex abaxially, concave adaxially, thickly covered with red lacerate-peltate scales; rachis 36–62 cm long, abaxially convex at the base, concave adaxially with pinnae inserted along lateral ridges, becoming shallowly convex toward the apex, ridge single adaxially with pinnae inserted laterally, scaly as above at the base, more sparsely so toward the apex; pinnae 15–



2. The inflorescence of *Gronophyllum apricum*.

23 per side, narrowly cuneate, truncate, 0.8–3.5 cm wide, 9–24 cm long, recurved, becoming shorter apically, irregularly clustered, lower surface with large ramenta along the midvein. Inflorescence branching to 1 order, peduncle 3.2–5.5 cm long; prophyll and first peduncular bract 20–29 cm long, purplish, covered with red lacerate-peltate scales apically and along the edges, second peduncular bract small, inconspicuous, to 0.8 mm and triangular; bracts subtending rachillae small, inconspicuous; rachillae 14–25 cm long; triads opposite, each pair alternating at 90° with previous pair, forming 4 rows, 2 bracteoles associated with each triad, one under the triad, the other between one lateral staminate flower and the central pistillate flower. Staminate flowers cream-colored with pur-

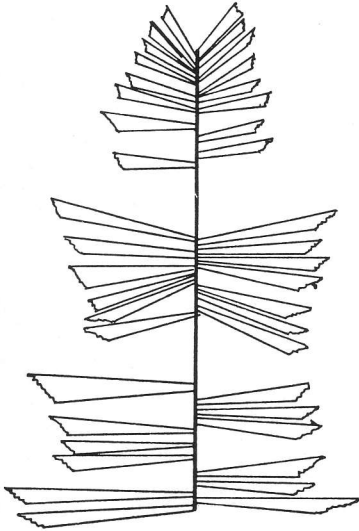


3. The infructescence of *Gronophyllum apricum*.

ple tips, pedicellate; sepals connate at the base, keeled, ca. 1 mm long, more-or-less equal, petals valvate, acuminate, 7 mm long, 1.5–3.0 mm wide, anther filaments connate around a very short 1-, 2-, or 3-lobed pistillode, free portion of filaments very short, anthers bilocular, locules well separated on a tanniferous connective. Pistillate flowers dark purple, 6–7 mm long; sepals imbricate, ca. 2 mm high, petals highly imbricate, with long, thin valvate tips, staminodes generally 3, toothlike. Fruit red, nearly globose, 8 × 7 mm, pericarp thick, tanniferous; seed top-shaped, 5 × 4 mm, endosperm homogeneous, embryo basal. Vernacular names: none known.

Distribution: known only from a few limestone ridges in the vicinity of the Frieda River, West Sepik Province, Papua New Guinea.

Specimens Examined: PAPUA NEW GUINEA: West Sepik Province: Tele-



4. Drawing of the leaf of *Gronophyllum apricum*.

fomin Subprovince. Rain forest below Carpentaria Exploration Company helicopter pad K-27, on exposed ridge, 900 m alt., *Essig & Young 74082* (Holotype LAE; Isotype BH); on ridge above junction of "clear-water" stream with Frieda River, ca. 2 km upstream from Carpentaria

Exploration Company airstrip camp, 300 m alt., *Essig & Young LAE 74049* (BH, LAE, USF); on exposed ridge near Carpentaria Exploration Company "Antap Mountain" helicopter pad, 1,200 m alt., *Essig & Young LAE 74072* (BH, LAE, USF).

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Founder of Society Dies

Dent Smith, founder of The International Palm Society, died on April 23, 1985. *Principes* 30(1), January 1986, will be dedicated to him. Friends are urged to send notes or remembrances of any kind to the editors.