

As for *P. johorensis*, many herbarium specimens of this new taxon have been filed under *P. malaiana*. Furtado in his determinations (at SING) had noticed differences, and began to suggest comparisons with *P. malayana* (Griff.) Scheff. var. *sumatrana* Becc. or with *P. malayana* var. *baramensis* (*P. malaiana* (Griff.) Scheff. var. *barramenis* Becc. in Martelli), which are Sumatran and Bornean taxa respectively, the latter since reduced under *P. mirabilis* by Dransfield (1991).

Distribution: Johor: Ulu Endau, Lenggong F.R., Kahang, widespread, also Pahang: Rompin, Kedaik.

Habitat: usually along sides of streams, or in swampy places, sometimes on hills up to 300 m as observed at Ulu Endau on sandstone, growing among *Johannesteijsmannia altifrons*.

Specimens examined Johor: Mawai, 1935, Corner & Furtado 29240 (K, SING), 1959, Tan Ah King 23 (SING), Sg. Kayu, 1937, Keah 32423 (SING), Gunung Panti East, 1892, Ridley s.n. (SING), 1973, J. Dransfield JD3044 (SING), Ulu Endau, Dransfield JD3548 (SING), B.H. & R. Kiew RK1613 (KEP), 1977, J. Dransfield & F.W. Fong JD5040 (K, KEP), Sg. Sempanong 1985, R. Kiew RK1743 (KEP), Kuala Marong, 1985, R. Kiew RK1761 (KEP), Kahang, 1990, C.K. Lim *H0279, H0426, H0533, Lenggong F.R., 1991, C.K. Lim H0933, L.G. Saw et alia FRI 37439 (KEP), Ulu Sedili, 1991, C.K. Lim H0929; Pahang: Sg. Kinchin (see type), Endau-Rompin, 1985, C.M. Low FRI 25900 (KEP), Kedaik, 1991, C.K. Lim H1001, Lesong F.R., 1992, L.G. Saw FRI 37532 (KEP), 1993, L.G. Saw FRI 38522 (KEP).

4. *Pinanga pantiensis* J.Dransf. sp. nov.

Inter species *Malayanas rachillis luteis vel aurantiacis valde fractiflexis bene distincta*, *P. pachyphyllae*, *specie Borneensis*, *verosimiliter affinis sed textura et dissectione folii et rachillis fractiflexis differt*.

Typus: Johor: Kota Tinggi, Gunung Panti.F.R., 1973, J. Dransfield et alia JD3048 (holotypus SING).

Plates 10–13.

Clustering undergrowth palm to 6 m tall. Stem c. 20 mm diam., green with grey-brown leaf scars; internodes 40–50 mm long, with scattered caducous black scales when newly exposed. Crownshaft c. 35 cm long; sheaths pale green, c. 25 cm long, striate when dry, minutely dotted with small caducous

scales. Leaves arcuate, to 2 m long; petiole c. 50 cm long, c. 5 mm diam. near base; rachis light orange-yellow when fresh; leaflets 10–16 on each side of the rachis, arcuate, diverging at angle of about 30 degrees from the rachis, the longest to 38 x 3 cm, very coriaceous, glossy green when fresh, acuminate and consisting of three to ten folds except for the apical two leaflets on each side, consisting of three to ten folds and lobed to a depth of 1 cm at the tips; transverse veins conspicuous, close, leaflet surfaces glabrous, ramenta absent. Inflorescence infrafoliar, known only in immature to mature fruiting state, to 15 cm long with three to five branches; prophyll 14 x 4 x 2 cm, thick, yellow green; peduncle c. 3 cm long, c. 8–10 mm wide at the base, tapering to 2 mm wide, rachillae conspicuously zig-zag, yellow to orange; rachilla bract triangular, c. 2–4 mm, flower scar 4 mm diam. Immature fruit green, mature fruit satiny-black, ovoid, 32–35 x 15–17 mm; epicarp minutely striate, pericarp c. 4 mm thick. Seed 10 x 20 mm, endosperm deeply ruminant; embryo basal. Seedling leaf coriaceous.

Notes: When Dransfield recognised this as a new taxon, after viewing herbarium records deposited by Corner as early as 1936, and from his own collections, it was thought to be localised and endemic to the unique flora of Gunung Pantii, hence the epithet. The species has since been found in adjacent areas in Johor, especially at Linggiu where the recently constructed dam has diminished its population, further threatening what is undoubtedly a rare palm. On a recent collection trip to that locality, on the stems of the few residual plants the internodes were seen to vary from 13 cm at the base, to 4 cm at the upper end, providing an indication of effects on growth, perhaps due to ecological change and disturbance.

In appearance the taxon resembles *P. malaiana*, though it is not observed to be as tall or robust. Although clustering, it usually has one or two dominant stems (Plate 11). The pinnae are usually narrower and more widely spaced (than in *P. malaiana*), and are characteristically tough and stiff. The inflorescence is its striking feature (Plate 12), with zig-zag rachillae, often bright yellow in colour and glossy black fruit (Plate 13). The recently described palm from Khao Sok in Thailand, *P. fractiflexa* Hodel (1997), has wavy but green, and not so strongly fractiflexing rachillae.

Distribution: Johor: Linggiu, Kota Tinggi, Gunung Pantii F.R.(east).

Habit: Hill slopes, ridge top, dipterocarp forest, to 250 m a.s.l.

Specimens examined: Johor: Linggiu, 1992, C.K. Lim *H1343, 1993, C.K. Lim H1530, 1998, H2001; Kota Tinggi, 1957, T.C. Whitmore 63 (SING); G. Pantii, Ulu Segun (300m alt) 1936, Corner SFN 30659 (SING); G. Pantii

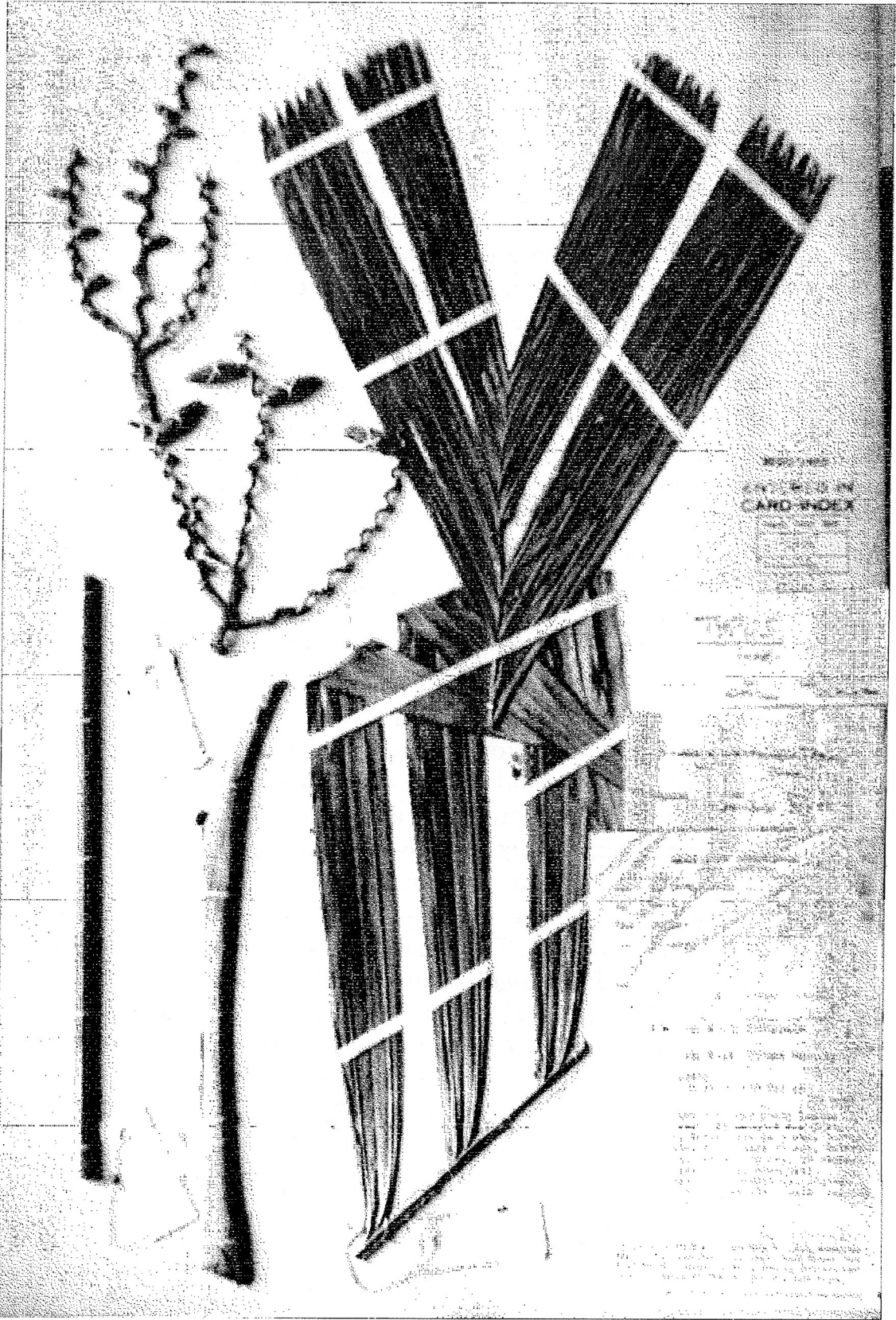


Plate 10. *Pinanga pantiensis* J.Dransfield (holotype: 1973, JD3048 SING).
By courtesy of SING.



Plate 11. *Pinanga pantiensis*, dominant stem in clump, at Linggiu, Johor.



Plate 12. *Pinanga pantiensis*, inflorescences infrafoliar.

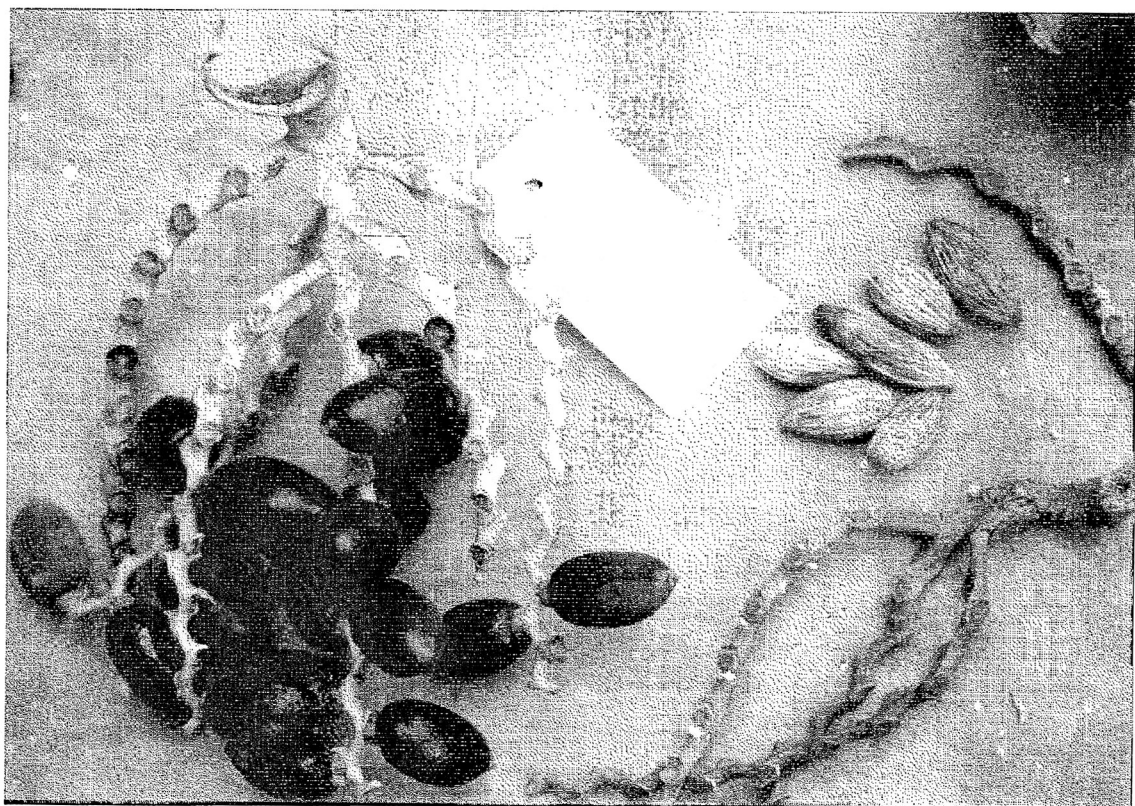


Plate 13. *Pinanga pantiensis*, zig-zag rachillae, and fruit (*H1343).

(forested eastern slope, 300m alt.) 1967, *T.C. Whitmore FRI 4515 (KEP)*, 1967, *Suppiah FRI 98978 (KEP)*; Ulu Sedili, 1991, *C.K. Lim H0926*;

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