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. malaiana* (Griff.) Scheff. var. *sumatrana* Becc. or with *P. malaiana* var. *baramensis* (P. malaiana (Griff.) Scheff. var. *baramensis* Becc. in Martelli), which are Sumatran and Bornean taxa respectively, the latter since reduced under *P. mirabilis* by Dransfield (1991).

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

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


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.*


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 inframarginal, 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 ruminate; 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 Panti, 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 Panti 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. Panti, Ulu Segun (300m alt) 1936, Corner SFN 30659 (SING); G. Panti


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;

Acknowledgements

Special thanks to Dr. John Dransfield, Dr. Ruth Kiew and Dr. Saw Leng Guan for generously contributing new species and collaboration, and to the Directors of the herbaria at L, K, KEP, SING and WSRL, and to friends at KEP, Dr. Lilian Chua, Kamarudin bin Salleh, Mat Asri bin Ngah Sanah, and at SING, Dr. Chin See Chung, Mohamad Shah bin Mohamad Noor, Ali Ibrahim, to my field collectors Adong Pandak, Alus Sarip, Hamid Busu, Adnan bin Yusuf, Busu Ngah, Mohamed Noh bin Muhamad, to Dr. Tim Whitmore for his ready help and advice, and to the Minister for Primary Industries, Malaysia, Datuk Seri Dr. Lim Keng Yaik, and the Departments in his portfolio for their assistance to the Palm Search Malaysia project.

References


