

## 2. *Pinanga johorensis* C.K.Lim & L.G.Saw sp. nov

*A P. malaiana minor, rachillis plerumque 2-ramulis, longis stolonibus bene distincta.*

*Typus:* Johor: Lenggong F.R., 1993, *L.G.Saw FRI 37435* (holotypus KEP, isotypus K).

Plates 5–7.

Clustering, pleonanthic, monoecious palm. Stem with basal suckers forming very loose clumps, stoloniferous with distant stems up to 3 m apart; stem to 7 m tall, slender to 3 cm diam.; nodal scars conspicuous, 1 cm wide, internode to 15 cm apart; stem surface green, sometimes sparsely lepidote, with brown scales. Crownshaft to c. 65 cm long, dark green, sometimes glaucous, conspicuously swollen in developing inflorescences. Leaves six to nine in crown; leaf sheath to 32 cm long, glaucous on freshly exposed parts, prominently lepidote on older parts; leaf with sheath to 1 m or longer; petiole to 38 cm long, c. 1 cm diam., slightly channelled adaxially, round abaxially, lepidote; leaflets acuminate, often five to seven regularly arranged on each side of rachis, broad with 4–5 nerves (sometimes with 17 to 22 pairs of leaflets, each with fewer nerves), the apical leaflets broader, very prominently toothed and deeply lobed; lamina up to 122 cm long by 75 cm wide, shiny green, coriaceous, drying dull greenish brown on upper surface, darker brown on abaxial surface. Inflorescence infrafoliar, pendulous; prophyll from immature inflorescence elliptic, strongly two-keeled, pink when fresh; peduncle short to 1.5 cm long, flattened, wide at the prophyll scar; rachillae two, rarely three, with floral triads arranged distichously. Immature staminate flowers asymmetrical, sessile; calyx with three free triangular unequal lobes, c. 2 mm long; corolla with three well-developed ovate lobes, joined shortly below; stamens c. 38. Immature pistillate flower sessile; globose, calyx with three triangular, ciliate-margined lobes, about the same size as calyx lobes; staminodes absent; ovary cylindrical to ovoid, c. 1.5 x 1 cm; stigma with short style c. 0.5 mm long, 0.5 mm wide; stigma irregularly lobed and flattened. Infructescence infrafoliar strongly reflexed, up to 22 cm long. Immature fruits buff coloured with pink tips, maturing to bright red and black, with black calyx and corolla, borne on coral red rachillae. Mature fruit ellipsoid to 3 x 1.5 cm, with a distinct low collar surrounding the apical stigmatic remains; epicarp smooth; endocarp with conspicuous longitudinal fibres; seed adhering to endocarp, 1.5 x 1.2 cm, attached basally; endosperm deeply and irregularly ruminate; embryo basal.

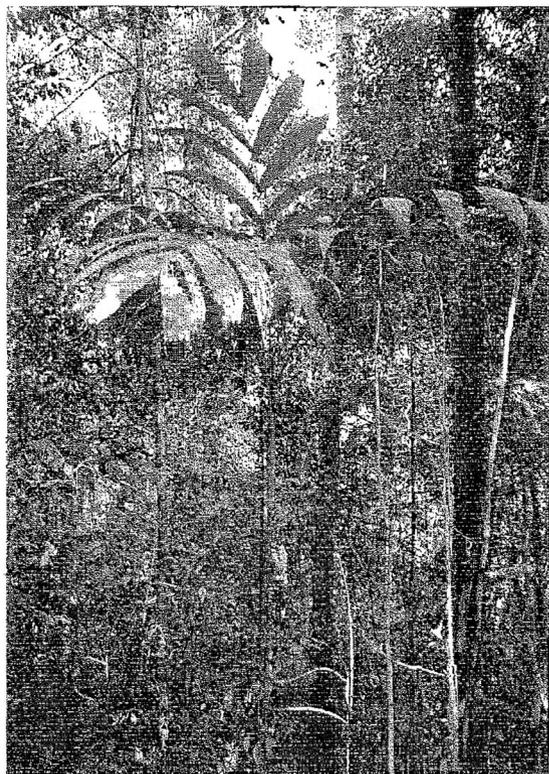


Plate 5. *Pinanga johorensis* C.K.Lim & L.G.Saw, stoloniferous palm at Bukit Jamari.



Plate 6. *Pinanga johorensis*, note toothed apical leaflets.

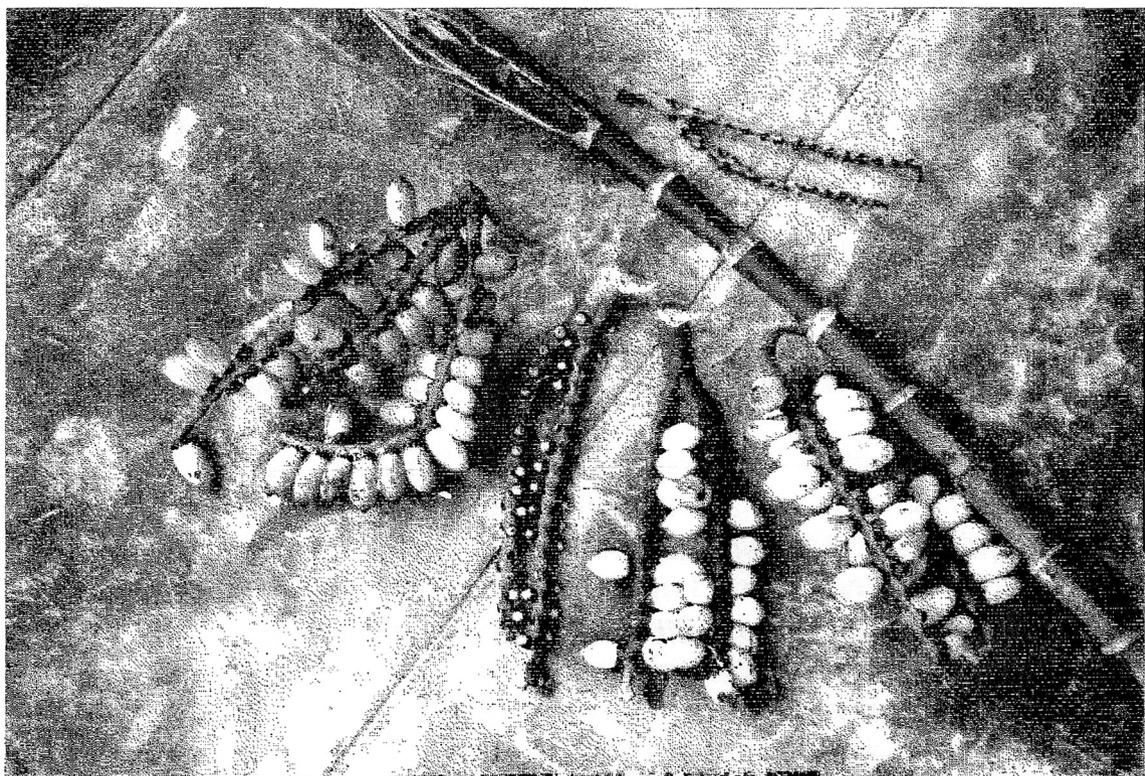


Plate 7. *Pinanga johorensis*, inflorescences and fruit, Kahang, Johor (\*H0744).

*Notes:* This smaller relative of *P. malaiana* (Mart.) Scheffer has undoubtedly been often confused with its larger kin, and perhaps many herbarium specimens still exist under that appellation. It can frequently be seen along the road from Kluang to Jamaluan, where it is under threat from forest clearance, and at Bukit Jamari (Plate 5). Apart from the two-, sometimes three-branched rachillae (Plate 7), it can be differentiated by the slender stems growing out of surprisingly distant stolons, and its fewer broad leaflets with the apical leaflets prominently toothed (Plate 6), although multi-pinnate forms with narrower leaflets can also be found. In the field, the swollen leaf sheaths have been observed to be penetrated by insects eager to ravage the inflorescence within; one rarely sees exposed flowers in anthesis. After abscission the prophyll may sometimes be erect, but are usually deflexed.

It is relatively widespread in Johor, justifying its epithet. From the Lenggong F.R. to Mersing, it grows sympatrically with *P. limosa*, *P. palustris* Kiew (see below), *Nenga grandiflora* Fernando, and *N. pumila* var. *pachystachya* (Blume) Fernando, *I. geonomiformis* Griff. ex Mart., *I. asli* C.K. Lim, and the rattans of the area including *Korthalsia echinometra* Becc., and *K. flagellaris* Miq.. Ridley's 1903 specimen indicates its presence in Singapore. Further research might possibly yield collections in Sumatra and the Riouw islands.

*Distribution:* Johor, Lenggong F.R., Mersing F.R., Bukit Jamari; Singapore.

*Habitat:* lowland dipterocarp forest, to 80 m a.s.l.; common palm.

*Specimens examined:* Johor: Kota Tinggi, Mawai, 1959, *Tan Ah King* 23A (SING), Kahang, Kg. Sri Lukud, 1990, *C.K.Lim* \*H0512, 1991, *C.K.Lim* H0745, H0970, H1051, H1057, Bukit Jamari, 1991, *C.K.Lim* H1003, 1993, *C.K.Lim* H1458 (SING), H1400, H1525, 1994, *C.K.Lim* H1683, 1995, *C.K.Lim* H1896, H1924, Labis F.R., 1966, *T.C.Whitmore* FRI 0187 (SING), 1970, *T.C.Whitmore* FRI 15618 (KEP), 1993, *C.K.Lim* H1519, Lenggong F.R., 1993, *C.K.Lim* H1588, H1589; Singapore: Bukit Panjang, 1903, *Ridley* 1841 (SING).

### 3. *Pinanga palustris* Kiew sp.nov.

*A P. malaiana fructibus grandibus infructescentia erecta et interfoliacea differt.*

*Typus:* Pahang: Sg. Kinchin, 1989.R. *Kiew* RK2806 (holotypus KEP).  
Plates 8–9.