leaves, and branched inflorescence. In inflorescence structure it appears to approach *P. patula* Blume, but is vegetatively quite distinct.

10. Pinanga dumetosa *Dransfield* sp. nov. a ceteris speciebus borneensibus *Pinangae* habitu dumetoso, foliolis miro modo lanceolatis cucullatis a rachide angulo acutissimo divergentibus, et inflorescentia erecta florum triades spiraliter vel distiche gerenti, floribus masculis persistentibus calyce paupere evoluto differt, *P. brevipedi* et *P. crassipedi* similis sed caule evoluto et characteribus folii valde distincta. Typus: Borneo, Sarawak, *Dransfield* JD 5340 (holotypus K; isotypi BH, KEP, L, SAN, SAR).

Clustering, low, thicket-forming, unarmed, pleonanthic, monoecious palm. Stems suckering at the base, rarely more than 1 m long, frequently decumbent with only the terminal portion and the crownshaft erect, to 1·3 cm diam. just above the node, to 1·6 cm diam. just below the node, with nodes prominent and about 6 cm distant; stem surface dull green, bearing abundant dark reddish-brown, pale buff-edged scales. Crownshaft elongate, to 25 cm long, scarcely swollen, up to 2 cm diam., dull greenish-brown, rather densely covered in reddish-brown scales as the stem, becoming striate on drying; about 7–8 leaves in crown. Whole leaf including the sheath c. 1·5 m long; leaf sheath c. 25 cm long terminating in an irregularly tattering very short ligule; petiole up to c. 75 cm long, 6 mm wide, triangular in cross-section when fresh, diverging from the crownshaft at an acute angle, dull green, covered in scattered reddish-brown scales as on the sheath; leaflets 6–8 on each side of the rachis, diverging at an acute angle, subopposite or alternate; lowermost pair of leaflets narrower than the rest, to 37 × 3·5 cm, frequently narrower; mid-leaf leaflets noticeably lanceolate, not sigmoid, ± parallel sided, to 40 × 5 cm, sometimes wider, with up to 5 main ribs; terminal pair diverging only slightly, joined for up to 14 cm, to 35 × 6 cm, lanceolate, cucullate, the apex shortly toothed with teeth corresponding to the main ribs (up to 9 of them); all leaflets somewhat plicate, dull green, same colour on both surfaces, glabrous except for scattered brown scales along the main veins on the lower surface near the leaflet tips; leaflets rarely much narrower and more numerous, but still detectably lanceolate. Inflorescence infrafoliar, erect, remaining so even to fruit maturity, rarely somewhat spreading; prophyll 6·5 × 3 cm, ovate, strongly 2-keeled, cream-coloured when fresh, quickly turning brown; peduncle scarcely exceeding 1 cm, branching to one order to give up to 8 rachillae to 6 cm long, densely grey tomentose when young; triads rather irregularly arranged, spirally below, distichously above, or distichously throughout, or subdistichously throughout. Staminate flowers not caducous, frequently persisting as shrivelled remains at mature fruiting, the whole flower asymmetric, sometimes very shortly pedicellate, usually sessile; calyx very poorly developed, present as a reflexed, bilobed, undulate collar partly fused with the petal bases, the lobes sometimes interlocking round the pistillate flower, the calyx rarely more than 1 mm high; corolla with 3 well-developed triangular lobes 5 × 2 mm, joined shortly below; stamens about 16; filaments 0·5 mm long; anthers 5 × 1·75 mm. Pistillate flower sessile; calyx cup-shaped, 3 mm diam., with 3 low triangular ciliate lobes to 1·25 mm high; corolla with 3 cucullate free ± rounded ciliate petals 2 mm high; ovary rounded, 2 mm diam., tipped with a subtrigonou cristate stigma.

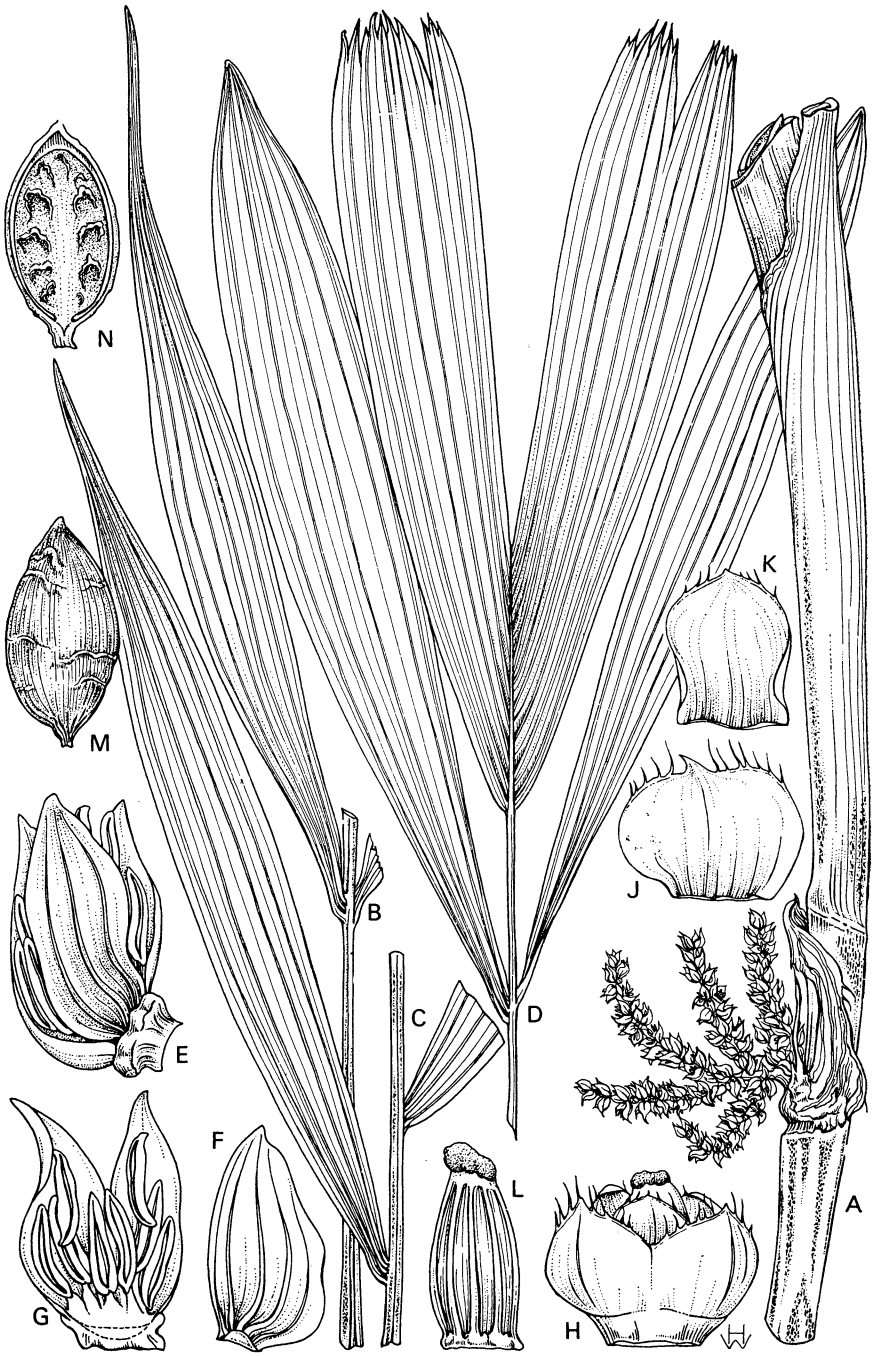

FIG. 3. *Pinanga dumetosa*. **A** portion of stem with crownshaft and one inflorescence × ½; **B** proximal portion of leaf with petiole and first leaflets × ⅛; **C** mid-lamina leaflet × ⅛; **D** leaf apex × ⅛; **E** staminate flower showing poorly developed calyx × 7½; **F** adaxial surface of petal from staminate flower × 7½; **G** staminate flower with one petal removed × 7½; **H** pistillate flower showing gamosepalous calyx × 10; **J** sepal removed from pistillate flower × 10; **K** one petal removed from pistillate flower × 10; **L** ovary × 10; **M** mature fruit × 2; **N** vertical section of fruit × 2. **A–L** from *Dransfield* JD 5340; **M, N** from S 36931. Drawn by Miss H. Wood.

Rachillae becoming orange-red at fruit maturity, glabrescent. Mature fruit turning from crimson to purplish-black, fusiform, 15 × 7 mm; epicarp glabrous; mesocarp thinly fleshy; endocarp fibrous; seed with basal embryo and deeply ruminate endosperm. (Fig. 3).

SARAWAK. 1st Division, Serian District, Sabal Tapang F.R., *Dransfield* JD 4657 (K, SAR); 1st/2nd Division boundary, G. Buri, *Martin & O. Ismawi* S 36931 (K, SAR); 3rd Division, Kapit District, Bt. Raya, *G. Smith* S 28217 (A, BH, K, KLU, L, SING, SAN, SAR). 5th Division, G. Mulu National Park proposed extension, foot of G. Buda, alluvial forest at 150 m *Dransfield* JD 5340 (holotype K; isotypes BH, KEP, L, SAN, SAR).

This is a curious species, probably most closely related to *P. brevipes*, *P. crassipes*, *P. latisecta* and *P. angustisecta*. All these species, however, are acaulescent. It is interesting to note that, as in *P. dumetosa*, the triads in *P. latisecta* also may be either spiral or distichous, and the staminate flowers are persistent (Dransfield 1974).

11. Pinanga mooreana *Dransfield* sp. nov. *P. malaianae* affinis sed habitu robustissimo, foliis majoribus foliolis colore texturaque dissimilibus, inferne non albescentibus, a rachide angulo majore abeuntibus differt; inflorescentiae rachillae 5–8 (in *P. malaiana* 1–4); fructus maturans forma dissimilis, colore viridi, tum flavo, tum aurantiaco, maturitate atropurpureo (in *P. malaiana* colore eburneo, tum roseo, tum cerasino, maturitate atropurpureo). Typus: Borneo, Sarawak, *Dransfield* JD 5313 (holotypus K; isotypus SAR).

Clustering, unarmed, pleonanthic, monoecious palm. Stem with basal suckers forming rather close clumps; stem robust to 8 m or more tall, to 2·5 cm diam. just above the nodes, to 3·5 cm diam. just below the nodes, rarely with greater diameter; nodal scars very conspicuous, about 1·5 cm wide, whole internode to 9 cm long; stem surface dull purplish-brown above, grey-brown below, in young parts densely covered with chocolate-coloured scales. Crownshaft to 1·25 m long, slightly swollen, dull purplish-brown. Leaves 6–8 in crown; leaf sheath to 75 cm long, dull purplish-brown, densely covered with chocolate-coloured scales; leaf without sheath to 3 m long; petiole 35–100 cm, slightly channelled adaxially, rounded abaxially, c. 1·5 cm in diam., with caducous chocolate-coloured scales; leaflets to 25 on each side of the rachis, regularly arranged, rather stiff, diverging from the rachis at an angle of about 60 degrees, mostly 2-ribbed except for occasional 1- or 3-ribbed leaflets, and the apical compound pair; lowermost leaflets to 33 × 2 cm, long-acuminate; mid lamina leaflets to 65 × 4 cm, very gradually narrowed towards the tip; uppermost 2–3 leaflets on each side with lobed tips corresponding to the major ribs; apical leaflet pair joined along mid line for about 15 cm of rachis, with lower margin to 33 cm long, and upper margin to 23 cm long, to 10 cm wide, conspicuously lobed with adaxial splits to 1 cm deep and abaxial splits to 4 cm deep; lamina dull dark green, coriaceous when fresh, drying dull green-brown, only slightly paler on abaxial surface, very slightly rugose when dried, glabrous except for very sparse brown scales along abaxial ribs on abaxial surface. Inflorescence infrafoliar, pendulous; prophyll not known; peduncle to 5 cm long, flattened, 2 × 0·5 cm wide at the prophyll scar; rachillae 5–8 held ± in the