

L, SAR, SING); Bt. Kajang, Karapa, *Ashton* S 19088 (A, BH, K, L, SAN, SAR, SING); Kapit, Ulu Sg. Kapit, Bt. Goram, *Paul Chai* S 36133 (BH, K, KEP, L, MOT, SAR); Belaga, Sg. Dayak, Sg. Linau, *Dransfield et al.* JD 4709 (K, SAR); Ulu Rejang, Gat, *J. & M. S. Clemens* 22099 (K), 22092 (K).

Typically, *A. furcata* has 12 stamens in the staminate flower, but vegetatively identical plants may have 15, 18, 24 or even 32 stamens, some consisting of a single anther cell.

9. *Areca insignis* (Becc.) J. Dransf. comb. nov.

Gigliolia insignis Becc. in *Malesia* 1: 172 (1877). Type: Borneo, Sarawak, Bintulu, *Beccari* P.B. 3696 (holotype FI; isotype K).

Pichisermollia insignis (Becc.) H. Montiero-Neto in *Rodriguésia* 41: 198 (1976) and 54: 9 (1980).

var. **insignis**.

DISTRIBUTION. Borneo, widespread in Sarawak and Brunei in lowland dipterocarp forest.

var. **moorei** (*J. Dransf.*) *J. Dransf.* comb. nov.

Pichisermollia insignis var. *moorei* J. Dransf. in *Bot. J. Linn. Soc.* 81: 40 (1980).

Type: Borneo, Sarawak, 1st Division, Bako National Park, *Moore* 9109 (holotype K; isotypes BH, SAR).

DISTRIBUTION. Borneo, local in Sarawak and Brunei, confined to kerangas forest.

See commentary on p. 1. The type variety seems to be confined to the 4th and 5th Divisions of Sarawak and Brunei. *A. insignis* var. *moorei* is more widespread but still not known outside Sarawak and Brunei.

10. *Areca jugahpunya* J. Dransf. sp. nov. *mira*, *acaulescens*, *robusta* 6-staminata ad sectionem *Arecellam* pertinens sed habitu, inflorescentia erecta robustaque, floribus staminatis egregie magnis petalis basaliter connatis distinctissima. Typus: Borneo, Sarawak, 7th Division, Ulu Sg. Kapit, *Paul Chai et al.* S36065, (holotypus K; isotypi BH, L, SAR).

Acaulescent undergrowth palm, stem ? solitary or ? clustered, c. 6 cm diam. (no further details available). Leaf sheath greenish yellow when fresh, drying pale brown, c. 30 cm long, split to c. 20 cm above the insertion opposite the petiole, the abaxial surface bearing scattered chestnut brown scales; ligule apparently not present. Petiole present but of unknown length, c. 1.5 cm diam. at base, adaxially channelled, abaxially rounded; whole leaf described as 2.5 m long; total number of pinnae not known but apparently few and very broad; penultimate leaflet 75 × 8 cm, somewhat sigmoid, 4-costate, acuminate in a driptip to 10 cm long; leaflets of apical pair very broad, 65 × 25 cm, 15-costate, the apical margin 15 cm wide with lobes to 5 cm corresponding to the adaxial folds, these further split along adaxial folds to 2 cm; abaxial lamina surface conspicuously striate when dry, paler than adaxial, both surfaces with scattered minute brown scales. Inflorescence infrafoliar, erect; prophyll not available; peduncle very short, c. 2 × 2 cm just above the clasping base, bearing about 20 stiff erect rachillae, those

at the base forking near the insertion, to 24×0.7 cm, deep scarlet when fresh, proximally bearing 2–3 triads c. 3 cm distant distally bearing staminate flowers solitary or in pairs c. 1.5 cm distant, all \pm uniseriate on one side of the rachilla. Staminate flowers green in bud, becoming white after anthesis, relatively very large (perhaps the largest in the genus), c. 18 mm long; calyx c. 3.5 mm long, tubular above a short solid base, with 3 low triangular lobes with minutely ciliate margins; petals 3, \pm oblong, c. 15×4 mm, connate in the basal 5 mm, the tips blunt triangular; stamens 6, the filaments inserted on the corolla c. 2 mm above the base; anthers \pm medifixed, c. 9×1 mm, pistillode absent. Pistillate flower bud c. 15×7 mm, \pm ovoid, subtrigonus; sepals 3, imbricate, cucullate, connate only at the very base, the outermost to 15×7 mm, the innermost to 11×6 mm; petals 3, free, valvate above, imbricate below, c. 9×3 mm; staminodes apparently absent; ovary very immature in available specimen. Immature fruit fusiform, 5.5×1 cm, tipped by massive stigmatic remains (Fig. 5).

DISTRIBUTION. Borneo, Sarawak, 7th Division, known only from the type collection (see above).

HABITAT. Cited as growing near river banks.

This species (*jugahpunya*—belonging to *Jugah*, in Malay) is named for *Jugah anak Kudi*, well known plant collector of the Forest Department, Sarawak, who assisted in collecting the type, and who has accompanied me on many field trips, enlivening them with wit and great botanical knowledge. *A. jugahpunya* is an extraordinary species. The inflorescence is remarkably robust and the staminate flowers perhaps larger than in any other species of *Areca*; furthermore the petals of the staminate flower are conspicuously connate at the base. The fruit, even in an immature state is massive. These features, together with the acaulescent habit, must lend a very strange aspect to the palm in the field. Despite its anomalous features, the uniseriate arrangement of the staminate flowers indicates a position within section *Arecella*, where it is probably closest to a new taxon from northern Sumatra and Trengganu.

11. *Areca kinabaluensis* *Furtado* in Feddes Rep. 33: 228, 233 (1933). Type: Borneo, Sabah, Kinabalu, Lumu-Lumu, *Furtado* sub *J. & M. S. Clemens* 28761 (holotype SING; isotypes B, K).

Areca hallieriana Becc. ex Martelli in Atti Soc. Tosc. Sci. Nat. Residente Pisa. Mem. 44: 114 ('1934'). Type: Borneo, Kalimantan, at the foot of G. Demus, *Hallier* 454 (holotype BO; isotype FI); **synon. nov.**

Far from being a Kinabalu endemic, this species turns out to be widespread in Borneo; however, it seems never to be abundant, often occurring as a few solitary individuals. The type of *A. hallieriana* fits within the range of variation of *A. kinabaluensis*.

12. *Areca klingkangensis* *J. Dransf.* sp. nov. inter species maiores sectionis *Microarecae* propter florem staminatum stipitatum *A. abdulrahmanii* et *A. andersonii* affinis sed staminibus 9 vice c. 16 vel 6 distincta. Typus: Borneo, Sarawak, 1st Division, Sabal Tapang Forest Reserve, G. Gaharu, *J. Dransfield et al.* JD 6103 (holotype K; isotypi BH, SAR).