

the base, 3.5×1 mm; stamens 6, with anthers to 2 mm, filaments to 1 mm; pistillode absent; pollen white. Pistillate flower in bud 7×3.5 mm; sepals 3, imbricate, cucullate, to 7×3 mm; petals 3, imbricate to 6×2 mm; staminodes absent; ovary strongly trigonous to 4.5×1.5 mm. Mature fruit purplish black, fusiform, 4.3×1.4 cm, tipped with conspicuous trifid stigmatic remains; mesocarp thin, fleshy; endocarp thin, fibrous. Seed basally attached, narrow obclavate, 22×7 mm; endosperm deeply ruminate; embryo basal (Fig. 1).

DISTRIBUTION. Borneo, Sarawak, 1st Division, known only from the type population (see above).

HABITAT. In lowland Dipterocarp Forest on gentle slopes by sluggish stream at about 20 m altitude. In April 1981 I counted about 30 plants of this curious palm. Were it not in flower, it would perhaps be passed over as a seedling of a species of *Pinanga*.

Ahmad bin Drahan, the supervisor of the Biological Centre at Semonoh, was the discoverer of this palm and is commemorated in the specific epithet. The interfoliar inflorescence with long peduncle is superficially very like that of *A. brachypoda* (see below) and *A. subacaulis* but the uniseriate staminate flowers indicate this species belongs to section *Arecella* rather than to section *Microareca* to which *A. brachypoda* and *A. subacaulis* belong. It is unlike any other species in the section because of the inflorescence position, but in details of flowers and fruit it conforms to the pattern common in the section.

3. *Areca andersonii* *J. Dransf.* sp. nov. ad sectionem *Microarecam* pertinens, floribus staminatis stipitatisque *A. abdulrahmanii* *J. Dransf.* et *A. klingkangensi* *J. Dransf.* affinis, sed calcicola et staminibus tantum 6 distincta. Typus: Borneo, Sarawak, 4th Division, Niah, G. Subis, Sg. Sekaloh, *J. A. R. Anderson* S 31937 (holotypus K; isotypus SAR).

Apparently solitary, short-stemmed, undergrowth palmlet. Stem to c. 2.5 m, 1.3 cm diam.; internodes to 1.5 cm, nodes marked by conspicuous leaf scars, c. 3 mm high; surface of internode dull green with sparse brown scales. Leaf sheaths forming a distinct crownshaft to 23×2 cm; sheaths 7–13 cm long with basal circumference 2–3 cm, striate, with sparse brown scales; ligule poorly developed. Leaf without sheath 65–80 cm including petiole to 30×0.3 cm; leaflets 2–3 on each side of the rachis, diverging at an angle of c. 30° ; leaflets subequal, with up to 5 main ribs, acuminate except for the lobed apical pair, to c. 35×3 cm; lamina surfaces concolorous, \pm glabrous on adaxial surface, with scattered brown scales on abaxial surface. Inflorescence infrafoliar; peduncle short, c. 10×3 mm; rachillae 3–4, divaricate, \pm zigzag, to 100×2 mm, covered in brown scales, each bearing 1–3 triads near the base, and spirally arranged pairs of staminate flowers distally. Staminate flower conspicuously stipitate, the stalk formed from the calyx base, glabrous, to 1.5 mm, the calyx tubular above the solid base, lobes 3, strongly keeled, narrow triangular, to 1 mm; corolla with 3 ovate apiculate petals to 3.5×1.75 mm; stamens 6, to 1.5×0.3 mm, anthers borne on short filaments; pistillode absent. Pistillate flower sessile with 3 imbricate, cucullate, apiculate free sepals to 4.5×3 mm, and 3 free imbricate apiculate petals to 4.5×2.5 mm; ovary to 7×2.5 mm, tipped with a beak and 3

stigmas. Immature fruit fusiform, 'ripening red', to 21×7 mm, tipped with stigmatic remains; seed immature, basally attached (Fig. 2).

DISTRIBUTION, Borneo, Sarawak, 4th Division, known only from type collection (see above).

HABITAT. This is a lowland species, and was found growing in the unusual habitat of crevices in limestone.

This new species is named for the collector, J. A. R. Anderson, who has collected many curious Bornean palms. It belongs to section *Microareca* by virtue of its small habit and spirally arranged staminate flowers. Together with *A. abdulrahmanii* and *A. klingkangensis* it forms a group of species distinctive in the conspicuously stipitate staminate flowers, but is immediately distinguishable from these two by the presence of only 6 stamens.

4. *Areca arundinacea* Becc. in Malesia 1: 23 (1877). Type: Borneo, Sarawak, 2nd Division, on hills of the interior near Sg. Sekerang, *Beccari* PB 3850 (holotype FI; isotype fragments K).

Additional specimens: BORNEO, SARAWAK; 1st/2nd Division border, G. Buri, *Othman I. et al.* S 36835 (BH, K, SAR), *Dransfield et al.* JD 6120 (BO, BH, K, L, SAR); 4th Division, Bintulu, Sg. Geraes, *H. E. Moore et al.* 9150 (BH, K, SAR); Bintulu, Labang, Ulu Stirau, *Ashton* S18093 (K, SAR) (this collection bears pinnate rather than bifid leaves, but the leaves have the same texture and narrow outline as of the typical form).

5. *Areca brachypoda* J. Dransf. sp. nov. acaulescens, ad sectionem *Microarecam* pertinens, inflorescentia interfoliacea et pedunculo longissimo *A. subacaulem* (Becc.) J. Dransf. valde simulans sed rachillis flores staminatos usque ad apicem ferentibus et flore staminato \pm aequae lato ac longo staminibus 15–16 gaudenti differt. Typus: Borneo, Sarawak, 1st Division, Lundu, G. Pueh Forest Reserve, *J. Dransfield et al.* JD 6011 (holotypus K; isotypi BH, BO, L, PNH, SAN, SAR).

Acaulescent, solitary, undergrowth palmlet. Stem very short, subterranean, to c. 6×2.5 cm, bearing very close leaf scars and abundant adventitious roots, c. 3 mm diam. Leaf sheaths 11 cm long, c. 7 cm in basal circumference, marcescent, forming only an obscure crownshaft, splitting along \pm entire length opposite the petiole, tinged dull brownish-red, longitudinally striate, bearing scattered, minute blackish scales; ligule absent. Leaf excluding sheath c. 115 cm, including petiole to 41×0.5 cm; lamina bifid, gradually widening from the insertion to c. 12 cm wide, at the base of the cleft at c. $\frac{1}{2}$ the total lamina length, the lobes decreasing to c. 4 cm wide at the apex, c. 10 folds on each side of the rachis, the apical margins very briefly lobed, with lobes corresponding to the folds; adaxial lamina surface dark dull green, abaxial surface slightly paler. Inflorescence interfoliar, branching to 1 order only; prophyll to 50×1.25 cm, flattened, pale green, bearing obscure, scattered pale brown scales; peduncle becoming arcuate, c. 40 cm long, \pm elliptic in cross section becoming striate on drying, bearing abundant dark brown scales; rachillae 3 (? rarely more), spreading, sinuous, c. 13×0.3 cm, pale green, bearing scales as on the peduncle, the basal c. 2 cm bare of flowers; triads confined to the mid-portion of the central rachilla (the main axis), the lateral rachillae without triads or with a few in the proximal c. $\frac{1}{3}$, the rest of