

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

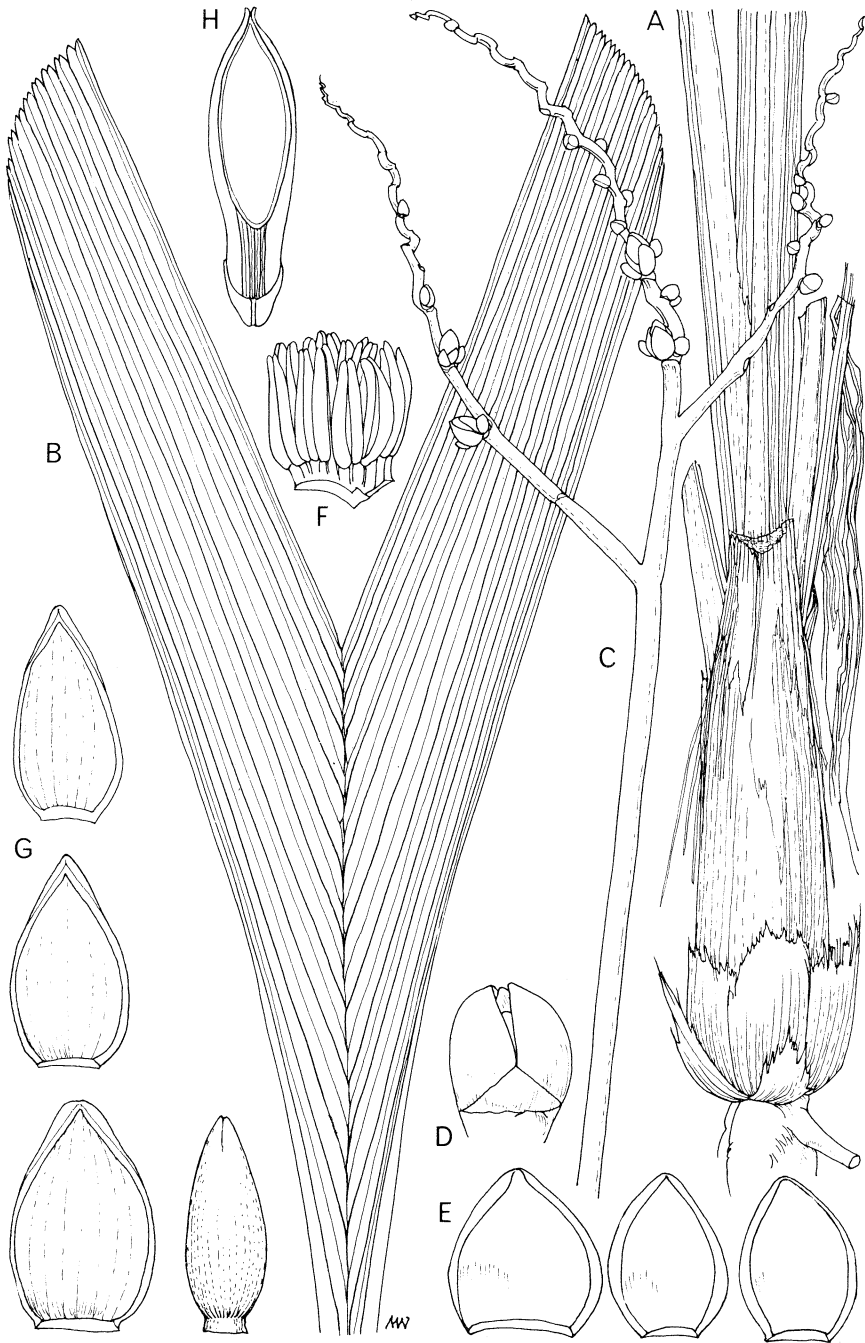


FIG. 3. *Areca brachypoda*. **A** base of stem showing marcescent leaf bases $\times \frac{2}{3}$; **B** leaf $\times \frac{1}{6}$; **C** inflorescence $\times \frac{2}{3}$; **D** staminate flower $\times 4$; **E** petals of staminate flower $\times 6$; **F** androecium $\times 6$; **G** pistillate flower dissected $\times 4$; **H** vertical section of fruit $\times 2$. Drawn from *Dransfield JD 6011* by Mary Watt.

the rachilla bearing rather distant, spirally arranged, solitary or paired staminate flowers. Staminate flower trigonous, \pm as broad as long; calyx to 2 mm, the base slightly stipitate, apically with 3 slightly imbricate, low, ciliate triangular lobes, the surface minutely papillose to scaly; corolla c. 3–5 mm, with 3 broad, triangular, valvate, glabrous petals joined only at the very base; stamens 15–16 crowded into an ill-defined ring, the anthers aligned \pm radially rather than circumferentially; filaments free, slender 0.3–0.8 mm, anthers somewhat misshapen, 1–1.5 mm \times 0.4 mm, latrorse (with respect to connective); pistillode lacking, though floral apex \pm visible. Pistillate flower broadly ellipsoidal c. 12 \times 5.5 mm; calyx c. 6 mm, with a solid base to 2.5 mm, and 3 broad, triangular, somewhat cucullate, ciliate, scaly, imbricate sepals, to 5 \times 6 mm; petals 3, free glabrous, c. 9 \times 6 mm, imbricate in the proximal portion, valvate in distal c. 2 mm, the imbricate margins ciliate; staminodes 8 (? always), minute, flattened; ovary ellipsoidal, c. 9 \times 3 mm, tipped by 3 broad, triangular stigmas to 2 \times 1.5 mm. Young fruit green tinged brownish, fusiform, to 22 \times 5 mm; tipped by the stigmatic remains; mature fruit not known (Fig. 3).

DISTRIBUTION. Borneo, Sarawak, 1st Division, G. Pueh Forest Reserve, known only from the type (see above).

HABITAT. In G. Pueh Forest Reserve, *A. brachypoda* is quite common in kerangas forest where it seems to be confined to sloping ground near valley bottoms at an altitude of about 50 m above sea level.

The specific epithet refers to the short stem. In the field I had identified this palm as *Pichisermollia subacaulis* (*Areca subacaulis*), and it was not until I examined the material in detail back at Kew that I realized that what I had collected was a new species. *A. brachypoda* belongs to section *Microareca*; the interfoliar inflorescence isolates it from other species of the section except for *A. subacaulis*. The latter is easily distinguished by the rachillae ending in conspicuous stiff points devoid of flowers, by the fusiform rather than globular flowers and by the 7–9 as opposed to 15–16 stamens.

6. *Areca chaiana* J. Dransf. sp. nov. montana ad sectionem *Microarecam* ut videtur pertinens sed inflorescentia spicata basi triades numerosos congestosque ferenti, floribus staminatis complanatis petalis latis statim distinguibilis. Typus: Borneo, Sarawak, 2nd Division, Lubok Antu, Sg. Jelok, near Bukit Sengkajang, Lanjak-Entimau Protected Forest, *Paul Chai* S 33986 (holotypus K; isotypus BH, KEP, L, SAR).

Erect, solitary undergrowth palm. Stem to 2.5 m tall, c. 1.8 cm diam., internodes c. 1.7–2 cm, bearing caducous chocolate brown scales; nodal scars to 4 mm wide. Crownshaft well-defined, light greenish yellow when fresh, drying mid-brown, 27 \times 3 cm; leaf sheaths neatly abscising, c. 17 cm long, longitudinally striate, bearing sparse, minute, brown scales; ligule to 3 cm, soon tattering. Leaf pinnate, excluding sheath to 85 cm, including petiole to 15 \times 0.3 cm; leaflets about 10 on each side of the rachis, \pm close, mostly 1–4 ribbed except for the broader terminal pair which may be 4–8 ribbed, concolorous, drying greenish brown, proximal leaflets c. 26 \times 2–3 cm, mid-leaf leaflets c. 36 \times 0.7–2.5 cm, apical pair c. 20 \times 2.5–5.5 cm, all acuminate except for apical leaflets which are lobed; minute scales abundant on both surfaces. Inflorescences infrafoliar, simply spicate, to c. 15 cm, arcuate; prophyll winged, (only fragments available); peduncle short c. 20 \times 7 mm