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Studies on Homalomeneae (Araceae) of Peninsular Malaysia I: *Homalomena asmae*, a New Species from Perak

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As part of The Flora of Peninsular Malaysia project, work is now underway to produce a checklist of the Araceae for Peninsular Malaysia as a first step to the final account. The species described here as new came to light recently as not fitting any known described Malaysian *Homalomena* species. The species is illustrated.

Keywords: Araceae, *Homalomena*, *Homalomena asmae*, Malaysia, Perak

Homalomena is a genus of in excess of 200 species, with the greatest diversity centred on Borneo, where perhaps as much as 95% of the species are endemic and conversely perhaps up to 90% have yet to be formally described. Peninsular Malaysia, while undoubtedly with new species yet to be described is much less rich and diverse, and furthermore, there are taxonomic problems stemming from the considerable number of published names, mainly through work by Hooker (1893) and Furtado (1939), that were less than critically described and virtually all of are based on historical types no longer in a suitable condition to permit them to be usefully employed for nomenclatural and taxonomic analyses. The problem of these inadequate types is compounded by the original descriptions often being too meagre to render them useful to determination.

It was thus with some surprise that during a visit to Universiti Sains Malaysia (USM), Penang, the second author was shown individuals of the species described here, since by the shape of the male flower zone it was immediately clear that they represented a wholly new species for Peninsular Malaysia, as no species yet described in *Homalomena* for the Peninsular has an ellipsoid to globose male flower zone. Two species described from Sumatera (*H. hastata* M. Hotta and *H. rusdii*) while having a similar spadix differ in numerous vegetative and floral characters, as detailed below.

Homalomena asmae Baharuddin & P. C. Boyce, **sp. nov.** (Fig. 1)

Ab aliis speciebus *Homalomenae* (Chamaecladi) Peninsulae Malayanae spadice ellipsoideo vel valde globoso et venis foliorum supra profunde impressis differt; ab *H. hastata* (specie Sumatrensi) foliis hastatis, statu valde parvo et floribus masculinis 2-staminatis distinguitur. *Homalomena rusdii* (species Sumatrensis simillima) vagina petioli apice anguste triangulariter ligulata et ovario uniloculari cum placenta singulari basali, ab hac specie nova differt.

Typus. Malaysia, Perak, Tasik Banding, Temengor F.R., 21 March 2009, *Baharuddin 11021* (holo- Herbarium, Universiti Sains Malaysia; iso- SAR).

Small, clumping evergreen, slightly aromatic (ocimene?) herbs to 35 cm tall. *Stem* hypogeal, later erect and epigeal, leafy, oldest parts naked,

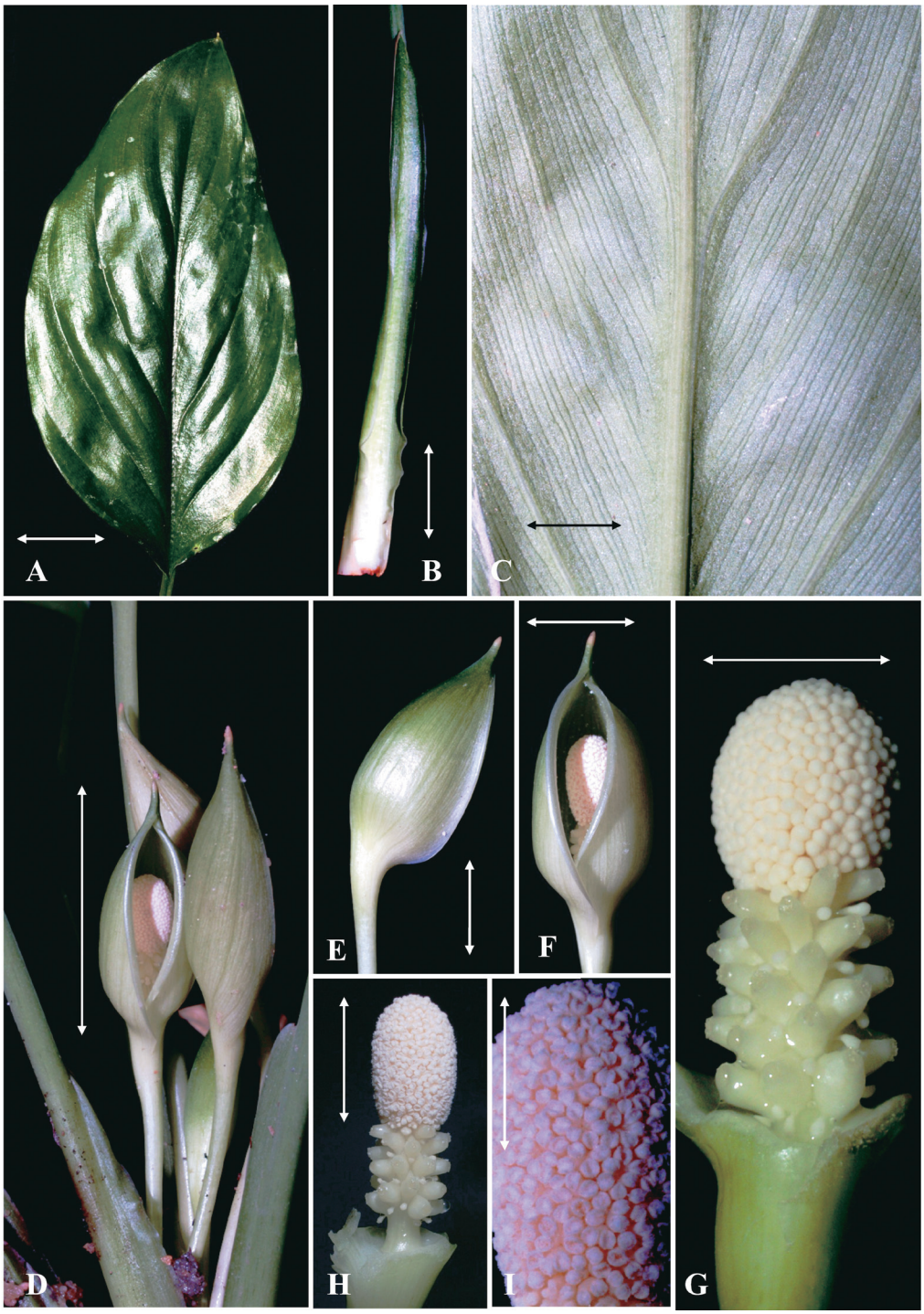

FIG. 1. *Homalomena asmae* Baharuddin & P. C. Boyce. A: leaf lamina adaxial view. Note the glossy surface, the deeply impressed primary lateral veins with the lamina somewhat bullate. Scale bar = 2 cm. B: petiole, showing the spreading petiolar sheath. Scale bar = 4 cm. C: leaf lamina abaxial view. Note the pellucid second type of interprimary veins. Scale bar = 1 cm. D: detail of synflorescence. Scale bar = 3 cm. E, F: inflorescence side and ventral views. Scale bar = 1 cm. G: spadix at female anthesis, spathe artificially removed. Scale bar = 1 cm. H: spadix at male anthesis, spathe artificially removed. Scale bar = 1 cm. I: details of male flower zone, note the open anther thecae. Scale bar = 5 mm.

later in oldest plants somewhat creeping with the active shoot ascending, rooting from the nodes and from through the petiole bases. *Leaves* 8–12 together; petioles ascending to slightly spreading, up to 20 cm long, sheathing for ca. 1/2 their length, portion above the petiolar sheath D-shaped in cross section, the dorsal edges raised, and the petiole thus slightly canaliculate, matte by the presence of microscopic puberulence, mid–dark green with very obscure dark, broken longitudinal striae, especially basally; petiolar sheath conspicuous, margins spreading, sheath this open, margins persistent, margins minutely hyaline; lamina 11–12 × 5–6 cm; ovato-lanceolate to elliptico-lanceolate, cuneate to obtuse basally, and very minutely peltate adaxially on the petiole insertion, apex acute to rather abruptly acuminate for ca. 1 cm, then stiffly tubular-mucronate for ca. 2 mm, semi-glossy medium to dark green adaxially, matte paler green with conspicuous darker pellucid striate interprimary venation abaxially, the lamina somewhat irregularly bullate between the primary veins; midrib conspicuous, impressed adaxially, rounded-raised abaxially, especially basally; primary lateral veins 4–6 per side, impressed adaxially, slightly raised abaxially; interprimary veins of two types, one type, alternating with primaries and much less conspicuous, the second type comprising conspicuous pellucid darker veins, these very numerous and sometimes branching just after they exit the midrib; secondary and tertiary venation invisible. *Inflorescences* up to 8 together, produced sequentially in a simple synflorescence, smelling weakly of terpenes at anthesis; peduncle very slender, up to 5 cm × 1.5 mm, except for the insertion of the spathe where ca. 3 mm diam., pale green, initially erect, later spreading; spathe partially opening by inflation at anthesis, broadly ovate-ellipsoid, not constricted but lower part at insertion on spadix conspicuously narrower and coinciding with the marked oblique insertion of the spadix insertion on the peduncle, ca. 3 × 1.2 × 1.5 deep cm at anthesis, tipped with a rostrate mucro 3 mm long, spathe pale to medium green, exterior glossy, interior paler green, glossy. *Spadix* ca. 2/3 length of the spathe, ca. 1.4 cm long, obliquely inserted on the peduncle, sessile or weakly stipitate, with the stipe virtually adnate to the spathe/peduncle insertion; female flower zone ca. 1/2 the length of the spadix, 0.8 × 0.5 cm; pistils somewhat loosely arranged, weakly globose cylindric, 1 × 0.5 mm, very pale green, 2-locular; style very short, slightly narrower than the ovary; stigma wider than the style, weakly umbonate-capitate, pale green, producing a conspicuous stigmatic droplet at female anthesis; placenta 2 per ovary, parietal to very slightly basal; interpistillar staminodes ellipsoid-clavate on a very slender stipe, ca. 1/2 or less the height of the associated pistil, dirty white; male flower zone contiguous with the female zone, ca. 1 × 0.9 cm; globose to ovoid, ivory; male flowers 2-staminate, stamens each with a single anther; globose, connective deeply impressed, leaving a deep cleft between each stamen; thecae opening fully by a large sloping slit. *Infructescence* with spathe persistent, initially erect, later somewhat declinate by flexing of the thickened peduncle; spathe turning deep green, later yellow-green and then dirty pale orange as fruit ripen, abscising at the insertion on the peduncle, with the spathe tearing upwards into irregular strips to reveal the ripe fruit; fruit oblong-globose, ripening pale orange, smelling weakly of decomposing pineapple; seeds ellipsoid, ca. 1.5 × 0.7 mm, minutely longitudinally ridged, pale brown.

Ecology. On hilly area at the entrance of Sok River, Banding Dam, highland forest of Temenggor (3–10 m above water level) Forest Reserve, Grik, Perak.

Etymology. This species is named for Asma binti Ismail , a Professor of Cellular and Molecular Biology, Deputy Vice-Chancellor (Research & Innovation), USM, who allocated a seed grant for the first author to initiate the discovery and propagation of Malaysia native aroids.

Notes. Homalomena asmae is immediately distinguished from all other *Homalomena* in Peninsular Malaysia by the globose male flower zone. *Homalomena asmae* belongs to the Chamaecladon Supergroup sensu Boyce & Wong (2008) by the presence of a small, unconstricted spathe,

male flowers each with 2-stamens and without a well-developed synconnective, and interpistillar staminodes much shorter than the associated pistil. The strongly aromatic vegetative tissues are unusual in the Chamaecladon Supergroup, but not without precedent since aromatic tissues also occur in *H. griffithii* (Schott) Hook.f.

The spathe larger and distinctly broader basally than in the core Chamaecladon, producing a spathe tapering towards the tip (as opposed to parallel sided and then abruptly acute as in the core Chamaecladon) appears to be most similar to the group of species centered on *H. griffithii*. *Homalomena asmae* is readily separable from *H. griffithii* by the ellipsoid to globose male flower zone, the male flowers deeply cleft between each stamen, the scattered pistils, and the secondary interprimary veins pellucid abaxially.

Two species described from Sumatera (*H. hastata* and *H. rusdii*, see Hotta [1985]) approach *H. asmae* by their somewhat ellipsoid male flower zone, but are both readily distinguishable. *Homalomena hastata* is a considerably larger and more robust plant, with petioles 40–60 cm long (vs. up to 20 cm), hastate lamina 25–35 × 10–15 cm (vs. lamina broadly lanceolate, 11–12 × 5–6 cm), male flowers 3-staminate (vs. 2-staminate), and interpistillar staminodes equalling the associated pistil (vs. much shorter). In overall stature, the 2-staminate male flowers, and interpistillar staminodes much shorter than the associated pistil *H. rusdii* is similar to *H. asmae*, but is immediately distinguished (and unique in the genus) by the petiolar sheath with a terminal free-ligular portion, and unilocular ovary with a single basal placenta.

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