

Studies on Homalomeneae (Araceae) of Borneo VIII: Delimitation of additional informal suprageneric taxa for Sundaic *Homalomena*

NG KIAW KIAW¹, SOFIMAN OTHMAN¹, PETER C. BOYCE¹, WONG SIN YENG²

¹ Pusat Pengajian Sains Kajihayat [School of Biological Sciences]
Universiti Sains Malaysia - 11800 USM, Pulau Pinang, Malaysia

² Department of Plant Science & Environmental Ecology, Faculty of Resource Science & Technology
Universiti Malaysia Sarawak - 94300 Kota Samarahan, Sarawak, Malaysia

Accepted 21 February 2011

Studi sulle Homalomeneae (Araceae) del Borneo VIII: delimitazione e ulteriori taxa informali per il genere Homalomena del Borneo — Viene proposto un complesso di taxa costituito da un supergruppo con otto specie informali per il genere *Homalomena* (Araceae: Homalomeneae) per l'area del Borneo. Le caratteristiche differenziali sono enumerate, illustrate, e supportate da chiavi analitiche relative ai gruppi suggeriti.

Key words: *Araceae*, *Homalomena*, informal taxa, Sunda, Borneo.

Earlier papers of this series (Boyce & Wong, 2008; Boyce & Wong 2009; Boyce, Wong & Fasihuddin, 2010) highlighted *Homalomena* Schott to be by far the largest, taxonomically most complex and least well understood aroid genus in tropical Asia. Recent estimates for the size of the genus have ranged from ca 150 species (Hay, 1999) to ca 300 species (Tung, Wong & Boyce, 2010), however continuing fieldwork in Borneo, a recently initiated field programme in Peninsular Malaysia (Baharuddin & Boyce, 2010a,b), and examination of the exceptionally rich herbarium collections of Herbarium Bogoriense (BO) and Leiden (L) force us now to estimate that *Homalomena* comprises somewhat in excess of 500 species, making it the third-largest genus of the family after *Anthurium* Schott and *Philodendron* Schott. Furthermore the majority of *Homalomena* species have yet to be formally described.

A genus of such magnitude lacking a comprehensive recent taxonomic account is extremely unwieldy, the more so given the considerable percentage of taxonomic novelties. To provide more manageable taxonomic units from which to tackle the fine taxonomy, Boyce & Wong

(2008) circumscribed three somewhat coarsely-delimited informal Supergroups (Homalomena, Chamaecladon, and Cyrtocladon). Subsequently, it has become apparent that a cluster of species centred on *H. punctulata* Engl. are not comfortably accommodated by any of these Supergroups. To rectify this we are here adding a fourth informal Supergroup: Geniculata, corresponding very approximately to Hotta's Section *Geniculatae* (see Hotta, 1967). Boyce & Wong (2008) subsumed *Geniculatae* in to the Cyrtocladon Supergroup, but it is now apparent that this was too hasty. The four Supergroups are defined morphologically as per the following key.

Notes on morphologies

Posterior lobe definition follows Mayo, Bogner & Boyce (1997, p. 8, Fig. 6) while the leaf blade shapes are based upon the largest leaf on a flowering plant.

The lower spathe – upper spathe length comparisons are taken from inflorescences at anthesis.

Key to Supergroups of *Homalomena* in Sunda

- 1a. Leaf blade usually with pronounced posterior lobes, blade base cordiform to sagittate, if posterior lobes reduced then blade base at least broadly truncate. Staminate flowers each comprising 3-4 (rarely 5-6, very rarely 1) stamens united by a conspicuous common connective (Fig. 3E) 2
- 1b. Leaf blade lacking pronounced posterior lobes, base ovate, acute or decurrent. Staminate flowers either each comprising 2-3 stamens not united by a common connective *or* with 4 stamens united by a conspicuous common connective 3
- 2a. Spathe divided by a moderate to pronounced constriction into a well-defined upper (limb) and a lower portion (Fig. 2C). Inflorescences during anthesis with complex spathe and spadix movements and often spadix elongation **Cyrtocladon**
- 2b. Spathe not divided into a lower and upper portion by a constriction (Fig. 2B). Inflorescence movement during anthesis comprising simple gaping and closing of the spathe limb, with virtually no spadix movement **Homalomena**
- 3a. Spathe at most 1.5cm long, often much less, without a constriction (Fig. 2A). Staminate flowers each comprising 2-3 stamens not united by a common connective (Figs. 3B, C). Pistillate flower zone with interpistillar staminodes. Ovary 2-3 locular. Mostly small plants and often rheophytic **Chamaecladon**
- 3b. Spathe more than 2cm long, divided into an upper and lower portion by a weak or moderate constriction (Fig. 2E). Staminate flowers each comprising 3-4 stamens. Pistillate flower zone without interpistillar staminodes (Fig. 3G). Ovary 4-locular. Medium-sized plants, never rheophytic **Geniculata**

As work progresses, additional, more finely defined morphotaxa become apparent. While formal recognition of all nascent higher taxa awaits phylogenetic analyses, it is nonetheless useful to assign them a nomenclature to provide convenient tools for discussing and comparing the groups of taxa they comprise. To this end we are here proposing eight species' complexes.

The use of terms 'Supergroup' and 'Complex' intentionally implies a hierarchical distinction between these informal taxa that will later enable nesting as necessary within Supergroup-subordinate as yet undefined 'Groups'.

It should be noted that the informal taxa here proposed by no means account for all *Homalomena* species in Sunda. In particular, virtually none of the predominantly continental Asian *Homalomena* Supergroup has been assigned to a Complex.

Neotropical *Homalomena* species are intentionally excluded; they are currently the subject of combined molecular and morphological study by Croat and co-workers (Croat, *pers comm.*)

Homalomena Supergroup

Expedita Complex

Stoloniferous colonial helophytes. *Inflorescences* solitary or paired. *Spadix* with a conspicuous naked interstice separating the staminate and pistillate flower zones (Fig. 3A), and interpistillar staminodes absent.

Typical Species: Homalomena expedita A.Hay & Hersh.

DISTRIBUTION: A single species currently considered endemic in N Borneo, but with circumstantial evidence (plants frequently cultivated as ornamentals in rural kampongs) that it may also be present in Peninsular Malaysia and southernmost peninsular Thailand.

Selaburensis Complex

Mesophytic solitary or clumping herbs. *Petioles* minutely scabriusculus. *Leaf blade* abaxially with numerous conspicuous pellucid vein-like glands running parallel to the primary lateral veins. *Inflorescences* paired.

Typical Species: Homalomena selaburensis ined.

DISTRIBUTION: All but one of the six so far identified species is restricted to Borneo.