Studies on Homalomeneae (Araceae) of Borneo XIII – New Species of *Homalomena*

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ABSTRACT

Five new *Homalomena* species are described from Sarawak, Malaysian Borneo: *H. baangongensis* L.S.Tung & Y.C.Hoe, *H. gastrofructa* S.Y.Wong, Y.C.Hoe & P.C.Boyce, *H. ibanorum* S.Y.Wong & P.C.Boyce, *H. passa* S.Y.Wong & P.C.Boyce, and *H. velutipedunculata* S.Y.Wong, Y.C.Hoe & P.C.Boyce. Based on morphological characteristics they are assigned to the Giamensis Complex [*H. baangongensis*], Hanneae Complex [*H. gastrofructa*, *H. velutipedunculata*], and Borneensis Complex [*H. ibanorum*] of the Cyrtocladon Supergroup, and to the Selaburensis Complex [*H. passa*] of the Homalomena Supergroup. Keys to informal taxa of Bornean *Homalomena*, and to the species of the above mentioned species complexes are provided. All described novelties are illustrated from living plants, and a comparative plate of the spadix of the five described species of the Borneensis Complex is provided.

KEY WORDS

Araceae, *Homalomena*, Borneo, Sarawak.

INTRODUCTION

Fieldwork on Borneo continues to reveal additional taxonomically novel *Homalomena* species that bring increased support for the informal groups proposed in earlier papers (Baharuddin & Boyce, 2010; Boyce & Wong, 2008; Boyce et al., 2010; Hoe et al., 2011a, 2011b; Kurniawang et al., 2011; Ng et al., 2011a, 2011b; Ni Putu et al., in press; Wong & Boyce, 2011). We here describe five such new species.

KEY TO THE SUPERGROUPS OF BORNEAN *HOMALOMENA*

1. Spathe divided by a moderate to pronounced constriction into a well-defined upper limb and a convolute lower portion; inflorescences during anthesis with complex spathe and spadix movements and often spadix elongation 2
– Spathe not divided into a lower and upper portion by a constriction; inflorescence movement during anthesis comprising simple gaping and closing of the spathe limb, with virtually no spadix movement 3
2. Leaf blades narrowly lanceolate, bases cuneate; interpistillar staminodes absent . . . . **Geniculata Supergroup**
– Leaf blades mostly sagittate or cordate, never narrowly lanceolate; interpistillar staminodes present, only very rarely absent . . . . . **Cyrtocladon Supergroup**
3. Spathe at most 1.5 cm long, usually much less; staminate flowers each comprising 2(–3) stamens without an expanded flat connective; interpistillar staminodes much shorter than pistils; mostly small plants and often rheophytic . . . . . **Chamaecladon Supergroup**
– Spathe more than 2 cm long and usually much longer; staminate flowers each comprising 4 stamens, almost always with a flat, expanded connective; interpistillar staminodes equalling or longer than pistils; mostly medium to large plants, never rheophytic . . . . . **Homalomena Supergroup**

KEY TO THE SPECIES COMPLEXES OF BORNEAN *HOMALOMENA*

1. Stoloniferous colonial helophytes . .2
– Solitary or clumping terrestrial or lithophytic mesophytes 3
2. Spathe not divided into a lower and upper portion by a constriction; staminate and pistillate flower zones separated by a conspicuous naked interstice . . . . .**Expedita Complex**
– Spathe divided into a lower and upper portion by a constriction; staminate and pistillate flower zones contiguous . . . . . **Rostrata Complex**
3. Spathe not divided into a lower and upper portion by a constriction; stamens without a conspicuous, flat connective; leaf blades abaxially with conspicuous pellucid striate vein-like glands running parallel to the primary lateral veins . . . . . **Selaburensis Complex**
– Spathe divided by a weak to pronounced constriction into a well-defined upper (limb) and a lower portion; stamens with a conspicuous flat connective; leaf blades lacking pellucid vein-like glands (if present, then leaf blades lacking posterior lobes, weakly peltate, and interpistillar staminodes absent *or* leaf blades cordiform and interspistillar staminodes present) 4
4. Leaf blades abaxially with pellucid vein-like glands 5
– Leaf blade without pellucid striate vein-like glands 6
5. Leaf blade weakly peltate, lacking posterior lobes, blade pendulous from the petiole; petiolar sheath margins persistent; interpistillar staminodes absent . . . . . **Havilandii complex**
– Leaf blade cordiform, spreading; petiolar sheath with margins marcescent; interpistillar staminodes present . . . . . **Wongii Complex**
6. Lower spathe longer than spathe limb 7
– Spathe limb longer than or equalling lower spathe 8
7. Leaf blade rubbery, cordiform, glossy bright green, primary lateral veins rather numerous; staminate flower zone producing amber-coloured resin droplets . . . . . **Giamensis complex**
– Leaf blade leathery, with little or no posterior lobe development, base broadly truncate, often adaxially

matte medium green, and weakly glaucous abaxially; primary lateral veins few; staminate flower zone not producing resin droplets . . . . . **Borneensis Complex**

8. Leaf blade cordate-sagittate, somewhat to much quilted between the primary lateral veins, adaxially with scattered conspicuous punctate glands; petiolar sheath margins soon marcescent (observe leaf immediately below flowering event); staminate flower zone (almost always) producing amber-coloured resin droplets; interpistillar staminodes present . . . . . **Hanneae Complex**

– Leaf blade oblong to oblong-elliptic, not quilted, and lacking punctate glands; petiolar sheath persistent; staminate flower zone without resin; interpistillar staminodes absent . . . . . **Insignis Complex**

KEY TO SPECIES OF THE *HOMALOMENA* BORNEENSIS COMPLEX

1. Pistillate flower zone accounting for nearly 1/2 of the entire spadix; staminate and pistillate flower zones contiguous, not separated by a naked interstice 2

– Pistillate flower zone accounting for 1/3 or less of the entire spadix; staminate and pistillate flower zones separated by a naked interstice 3

2. Spathe green at anthesis; pistils somewhat lax, with stigma rather clearly 3-lobed, wider than pistil; interpistillar staminodes shorter than pistils. Kalimantan Timur. . . . . ***H. tirtae***

– Spathe white at anthesis; pistils very dense with stigma not 3-lobed, narrower than pistil; interpistillar staminodes equalling or slightly longer than pistils. W Sarawak. . . ***H. ovata***

3. Staminate and pistillate flower zones separated by a zone with staminodes scattered along a short naked interstice 4

4. Leaf blades adaxially glossy with margins conspicuously red; prophylls, cataphylls and petiolar sheath wings with red margins; spathe limb internally white with a red margin, exterior glossy pale green with margins and the distal part of the spathe limb stained red; spadix stipe ca. half as long as the pistillate flower zone; C–NE Sarawak, SW Brunei. . . . . ***H. ibanorum***

– Leaf blades adaxially matte; no organs of the plant with red-margins; spathe exterior never stained red; spadix stipe no more than one third the length of the pistillate flower zone; W Sarawak 5

5. Pistils and stigmas yellowish, directed outwards; interpistillar staminodes with the clavate portion papillate; pistillate flower zone weakly fusiform; spadix somewhat sinuous; leaf blade glaucous abaxially. . . . . ***H. borneensis***

– Pistils white with grey stigmas, directed upwards; interpistillar staminodes with the clavate portion smooth; pistillate flower zone markedly fusiform; spadix straight; leaf blade not glaucous abaxially . . . . . ***H. clandestina***

KEY TO SPECIES OF THE *HOMALOMENA* GIAMENSIS COMPLEX

1. Spathe exterior lacking extrafloral nectaries; base of staminate zone much narrower than top of pistillate zone, transition between the zones abrupt; staminate portion of spadix with a constriction c. ½ way along from the base, not coinciding with the spathe constriction, staminate flowers distal to constriction well-defined; pistillate zone cylindrical; inflorescences smelling of anise (anethol). Siburan (SW Sarawak), limestones . . . . . ***H. giamensis***

– Spathe exterior, especially the lower spathe, with conspicuous extrafloral nectaries drying pale brown or yellowish, transition between the pistillate and staminate zones gradual. . .2