Webbia: Journal of Plant Taxonomy and Geography, 2013
Vol. 68, No. 2, 77–79, http://dx.doi.org/10.1080/00837792.2013.832961

Taylor & Francis
Taylor & Francis Group

Studies on Homalomeneae (Araceae) of Sumatera II: *Homalomena limnogena*, a novel species from Pulau Belitung, and the first record of colonial helophytism in the *Homalomena* Chamaecladon Supergroup

Peter C. Boyce[a]* and Sin Yeng Wong[b]

[a]*School of Biological Sciences, Universiti Sains Malaysia, Pulau Pinang, Malaysia;* [b]*Department of Plant Science & Envionmental Ecology, Universiti Malaysia Sarawak, Sarawak, Malaysia*

(*Received 2 July 2013; final version received 6 August 2013*)

A diminutive colonial helophytic species of *Homalomena*, *Homalomena limnogena* P.C. Boyce and S.Y. Wong sp. nov, is described as new to science from Pulau Belitung, Sumatera, and assigned to the Chamaecladon Supergroup. *Homalomena limnogena* is only the third helophytic species recorded for the genus, and is the first record of colonial helophytism in the Chamaecladon Supergroup. *Homalomena limnogena* very likely represents a third separate evolution of this life form for the genus *Homalomena*. A key to helophytic *Homalomena* species is provided and the new species is illustrated.

Keywords: Araceae; *Homalomena*; Chamaecladon Supergroup; Indonesia; colonial helophyte

Introduction

Reviewing the occurrence of colonial helophytism in the genus *Homalomena* (Wong et al. 2011) speculated that the life form has arisen twice in the genus, once in the Homalomena Supergroup (*Homalomena expedita* A. Hay & Herscovitch - Hay & Herscovitch (2000)), and once in the Cyrtocladon Supergroup (*Homalomena rostrata* Griff.). Since this publication, fieldwork on Pulau Belitung, one of two main islands in Kepulauan Bangka Belitung Province, off the east coast of southern Sumatera, revealed the presence of an additional colonial helophytic species of *Homalomena* of quite different appearance to the two existing species. This plant has now flowered in cultivation, and has proved to be a new species of the Chamaecladon Supergroup (*sensu* Boyce and Wong 2008), as well as a new record in *Homalomena* of a very rare life form.

Homalomena limnogena P.C. Boyce & S.Y. Wong, **sp. nov.**

Diagnosis

Homalomena limnogena is superficially very similar to the smaller facies of *Homalomena griffithii* (Schott) Hook.f., but is readily distinguished by the colonial helophytic habit, enabled by the presence of mostly subterranean stolons. *Homalomena limnogena* is further distinguished from *H. griffithii* by the solitary inflorescences, the longer, *c*.1 cm long, red terminal rostrum and yellowish spathe exterior, and by the shorter style and larger stigma (stigma almost equalling the width of the ovary). From both other helophytic *Homalomena* species (*H. expedita* and *H. rostrata*), *H. limnogena* is distinguished by its diminutive stature and may be further distinguished from *H. expedita*, by the contiguous pistillate and staminate flower zones (zones not separated by a sterile warty naked interstice), and by the presence of interpistillar staminodes, and from *H. rostrata* by the spathe lacking a constriction between the lower part and the limb.

Type: Indonesia, Sumatera, Kepulauan Bangka Belitung, Pulau Balitung, Gunung Tajam, 2°47′0″ S, 107°52′6″ E, *M.Lo AR-3769* (holo BO; iso SAR [spirit]) (Figure 1).

Diminutive colonial stoloniferous helophyte up to 10 cm tall, forming diffuse patches up to 2 m or more in diameter, entire plant with a resinous odour when crushed. Roots penetrating deep into soil, main roots *c*.1.5 mm in diameter, laterals much finer. Stem erect to somewhat creeping and rhizome-like, *c*.10 mm, emitting cataphyllerous stolons to *c*.15 cm long, 5 mm thick, these eventually upturned, becoming rhizomatous, leafy, and emitting further stolons from the base of the rhizomatous portion. Leaves clustered, to *c*.12 together; petiole up to 10 cm long and 2 mm in diameter, lower half D-shaped in cross-section, upper half dorsally channelled, with the margins rounded, reddish tinged on a pale green base; petiolar sheath occupying about the lower one-quarter, wings in-rolled; leaf blade glossy medium green, lanceolate to narrowly triangular-ovate, leathery, *c*.8–12 cm long, 1.5–2.5 cm wide, apex acute to acuminate, shortly apiculate for about 3 mm, base cuneate to very shallowly cordate or weakly truncate, the wider leaf blades usually somewhat asymmetric basally; midrib adaxially slightly impressed, abaxially slightly prominent, with about five adaxially impressed, abaxially slightly prominent primary lateral veins on each side, primary lateral veins alternating with much fainter interprimaries and diverging at *c*.45°. Inflorescence solitary; peduncle about 3 cm long,

*Corresponding author. Email: phymatarum@gmail.com

Figure 1. **A–F** *Homalomena limnogena* P.C. Boyce and S.Y. Wong. **(A, B)** Plants in type habitat in peat swamp forest. Note the variation in leaf-blade shape. The bleached mottling of the leaf blades is caused by a species of Aleyrodidae (Hemiptera) that seems habitually present in wild populations. **(C, D)** Inflorescence at pistillate anthesis. Note the conspicuous reddish rostrum. Note, too, the in-rolled petiolar sheath wings. **(E)** Spadix (nearside spathe artificially removed) at pistillate anthesis. Note the reddish peduncle with broken paler striations. **(F)** Detail of the pistillate flower zone. Note that the stigmatic fluid has flooded the zone; note, too, that the lowermost interpistillar staminodes are pendant. All from *M. Lo AR-3769*. Photograph credits: A, B © Mike Lo, used with permission; C–F © Peter C. Boyce.

slender, *c*.2-mm diameter, erect, reddish tinged with paler broken longitudinal striations. Spathe narrowly ovoid, limb about 2 cm long with a *c*.3 mm terminal rostrum, spathe gaping at pistillate, at which stage 1 cm wide across the opening, exterior glossy yellowish green, interior greenish white with numerous minute paler punctations, uppermost part of spathe limb and rostrum reddish tinged. Spadix about 1.8 cm long, stipitate for *c*.4 mm, stipe weakly conoid, glossy pale green; pistillate flower zone more or less cylindricL, *c*.6 mm long and 4 mm wide; pistillate and staminate flower zones effectively contiguous, but demarcated by a ring of well-spaced globose staminodes; pistils globose with a brief (*c*.0.3 mm) terminal stipe, congested, *c*.0.5 mm diameter, very pale green. Stigma stipitate, papillate, about as wide as ovary, creamy green, producing copious stigmatic fluid at anthesis, often flooding the pistillate flower zone. Interpistillar staminodes about half the

height of the pistils, one per pistil, more-or-less globose on a very short stalk, the lowermost ones pendant, glossy white. Staminate flower zone slender tapering cylindrical, widest about one-quarter of the length from the base, where about two-thirds as wide as pistillate flower zone, base narrower, *c*.1.8 mm long by 2.5 mm in diameter, slightly tapering, apex blunt, creamy white. Staminate flowers comprising (2–)4–5 stamens, those at the tip of the spadix depauperate and seemingly sterile (not releasing pollen), stamen more or less triangular in plan view, with a shallow median notch corresponding to the separation of individual thecae, *c*.0.5 mm wide by 0.5 mm long, connective weakly impressed. Fruiting spathe, fruits and seeds not observed (Figure 1).

Distribution

Only from the Type locality on Pulau Belitung, off the east coast of south Sumatera.

Ecology

Homalomena limnogena forms diffuse mats in perhumid peatswamp over granite; at about 300 m above sea level.

Etymology

From the Greek, *limne*, a marsh, and Latin, *genitus*, to be born, hence born in a marsh, an allusion to the swamp habitat of this species.

Notes

Homalomena limnogena is assigned to the Chamaecladon Supergroup by virtue of the small unconstricted spathe, and the interpistillar staminodes being much shorter than the associated pistils

Homalomena limnogena is only the third helophytic species recorded for the genus, and the first known for the Chamaecladon Supergroup. Recent molecular analyses (Wong et al. 2013) has shown that the three Supergroups to which the three helophytic *Homalomena* are individually assigned are well-supported. Given the rarity of helophytism in the genus it seems highly probable that the three known occurrences are independently derived.

Key to the helophytic species of *Homalomena*

1a. Plants small, less 15 cm tall; spathe ca 2 cm long……..……***Homalomena limnogena***

1b. Plants large, more than 25 cm tall; spathe more than 4 cm long.……...…2

2a. Leaf blades very broadly ovato-sagittate; spathe not constricted; spadix about 4.5 cm long, with a conspicuous warty interstice between the pistillate and staminate flower zones, interpistillar staminodes absent……..***Homalomena expedita***

2b. Leaf blades very variable in shape, ranging from sublinear to broadly ovate-oblong with the base cuneate, truncate, or with small to larger posterior lobes; spathe conspicuously constricted between lower portion and spathe limb; spadix up to 14 cm long, pistillate and staminate flower zones contiguous, interpistillar staminodes present ……...***Homalomena rostrata***

References

Boyce PC, Wong SY. 2008. Studies on *Homalomeneae* (Araceae) of Borneo I: Four new species and speculation on informal species groups in Sarawak. Gard Bull Singapore. 60(1):1–29.

Hay A, Herscovitch C. 2002. Two Remarkable New West Malesian *Homalomena* (Araceae) species. Gard Bull Singapore. 54(2):171–178.

Wong SY, Boyce PC, Fasihuddin BA. 2011. Studies on *Homalomeneae* (Araceae) of Borneo III: The Helophytic *Homalomena* of Sunda. Gard Bull Singapore. 62(2):313–325.

Wong SY, Tan PJ, NG KK, Ahmad SO, Lee HB, Fasihuddin BA, Boyce PC. 2013. Phylogeny of Asian *Homalomena* (Araceae) based on the ITS Region Combined with Morphological and Chemical Data. Syst Bot. 38(3):589–599.