

Studies on Homalomeneae (Araceae) of Borneo XV: A Novel Limestone-Obligated *Homalomena* from SW Sarawak, Malaysian Borneo

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ABSTRACT

Homalomena selaburensis P.C.Boyce & S.Y.Wong is described as a taxonomic novelty of the Homalomena Supergroup from forested Karst limestone in Samarahan Division, SW Sarawak, and compared with the most similar species described so far from Sarawak (*Homalomena passa* S.Y.Wong & P.C.Boyce), and from Peninsular Malaysia (*Homalomena curvata* Engl.). An identification key is provided and *Homalomena selaburensis* is illustrated from living plants.

KEY WORDS

Araceae, Borneo, *Homalomena*, Malaysia, Sarawak, limestone.

INTRODUCTION

The Homalomena Supergroup (*sensu* Boyce & Wong, 2008) is primarily a continental tropical Asian taxon, with only limited representation in the Indomalayan archipelago. Nonetheless, fieldwork on Borneo has revealed several locally restricted species, all novel (e.g., Baharuddin & Boyce, 2010; Wong et al., 2013), and which

we are describing as they flower in cultivation. One such further novelty is here described.

KEY TO SPECIES OF THE *HOMALOMENA* SELABURENSIS COMPLEX

- 1a. Petioles and peduncles glossy, smooth 2
- b. Petioles and peduncles matte, scabridulous 3
- 2a. Leaf blades hastate, posterior lobes directed outwards; blade smooth, or only very weakly quilted; peduncle slender, up to 20 cm × 1.5 mm; pistillate zone equalling the staminate zone; spathe interior white at anthesis; Mulu (NE Sarawak), shales *H. passa*
- b. Leaf blades sagittate, posterior lobes directed inwards; blade quilted between the primary lateral veins; peduncle rather stout, up to 12.5 cm × 3 mm; pistillate zone ca. ½ as long as the staminate zone; spathe interior yellow at anthesis. Maliau Basin (Sabah), sandstones *H. galbana*
- 3a. Inflorescence erect at anthesis, spathe 4.5 cm long; leaf blades

adaxially semi-glossy, primary veins flush adaxially; petioles green. W. Malaysia, granites *H. curvata*

- b. Inflorescence nodding at anthesis; spathe ca. 6.5 cm long; leaf blades adaxially highly polished, primary veins impressed adaxially; petioles deep reddish brown. S.W. Sarawak, limestone. . . *H. selaburensis* **sp. nov.**

Homalomena selaburensis P.C. Boyce & S.Y. Wong, **sp. nov.** Type: Malaysian Borneo, Sarawak, Samarahan [“1st Division”], Serian [District], Tebedu [Sub-district], Bukit Peyang, km 10 Tebekang/Tebedu (‘Tebedo’) Rd., 1°9′0.00″N 110°25′0.01″E (coordinates retrieved from Google Earth), 23 June 1983, *Yii Puan Ching & Haji Othman S.46215* (holo K!; iso KEP!; L!, SAR!; US). **Figs. 1, 2 and 3.**

Diagnosis

Homalomena selaburensis differs from all other species of the *Homalomena* Supergroup by the combination of matte, scabridulous petioles and peduncles, inflorescences nodding at anthesis, and leaf blades adaxially highly polished. It is the only limestone-associated species of the *Homalomena* Supergroup so far known.

Description

Medium clumping evergreen, aromatic (reminiscent of lime peel) mesophytic herbs to 55 cm tall. **Stem** epigeal, erect, leafy, later the older parts leafless and decumbent with the active tip ascending. Leaves ca. 6 per module, ca. 8–10 together; modules subtended by a conspicuously 2-keeled **prophyll** up to 8 cm long; **petioles** up to 22 cm long, sheathing for ca. 1/3 their length, ascending to spreading, flexing slightly upwards at the 2–3 cm long pulvinus occurring ca. 2/3 along the petiole length, with 1/3 of the petiole lying distal to the pulvinus, petiole above the petiolar sheath D-shaped in cross section, with the distal-most ca. 6 cm shallowly dorsally grooved, the dorsal edges bluntly rounded, petiole dull reddish-brown, colour deeper towards the base, minutely scabridulous;

petiolar sheath conspicuous, persistent, margins incurved except, sheath coloured as for petiole, or somewhat darker; **blade** up to 20 × 13 cm; cordiform, posterior lobes parallel to somewhat incurved, rounded, sinus obtuse, apex acute, tubular-mucronate for ca. 2 mm, highly polished medium green adaxially, matte subglaucous pale green with conspicuous darker pellucid striate interprimary venation especially near the blade margin, these more conspicuous on younger leaves; midrib moderately conspicuous, impressed adaxially, rounded-raised abaxially; primary lateral veins up to 8 per side, the lower 3 arising ± simultaneously and associated with the posterior lobes, impressed adaxially, slightly raised abaxially; interprimary veins of two types, one type alternating with primaries and only slightly 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 7 together, produced sequentially in a simple synflorescence; **peduncle** rather stout, up to 15 cm × 5 mm, medium green heavily speckled reddish brown, the colour intensifying towards the base, spreading with the inflorescence nodding at anthesis, inflorescence with spathe opening ventrally relative to the peduncle; **spathe** spreading at pistillate anthesis, broadly ovate-ellipsoid, not constricted, ca. 6.5 × 3 × 1.5 cm deep at anthesis, tipped with a rostrate mucro 5 mm long, margins reflexing during anthesis, spathe medium green in bud, in bud the exterior bright medium green, glossy, at anthesis exterior green and interior greenish white with numerous minute paler glands. **Spadix** ca. 2/3 length of the spathe, 4 cm long including the stipe; **stipe** obliquely inserted on the peduncle, oblique, ca. 5 mm long on its longest side, ca. 3 mm diam., glossy very pale green; **pistillate flower zone** ca. 1/3 the length of the spadix, ca. 1.2 × 0.8 cm; **pistils** somewhat loosely arranged, almost cylindrical, ca. 1 × 0.6 mm, pale green; **style** very short, slightly narrower than the ovary; **stigma** almost equalling the



Fig. 1. *Homalomena selaburensis* P.C.Boyce & S.Y.Wong. **A.** Flowering plant in habitat. Note the highly polished leaf blades. **B.** Plant in habitat with the matte abaxial surface of the leaf blades and scabridulous petioles visible. **C.** Details of developing inflorescences. **A–C** from AR-1730. Images © P.C.Boyce.

ovary in width, capitate, greyish white, papillate at pistillate anthesis; **interpistillar staminodes** oblong-clavate on a short, very slender stipe, staminode slightly exceeding the height of the

associated pistil, ivory-white, the lowermost reflexing markedly against the stipe; **staminate flower zone** contiguous with the pistillate flower zone, ca. 2×1.7 cm, bluntly ellipsoid, ivory; **staminate flowers**

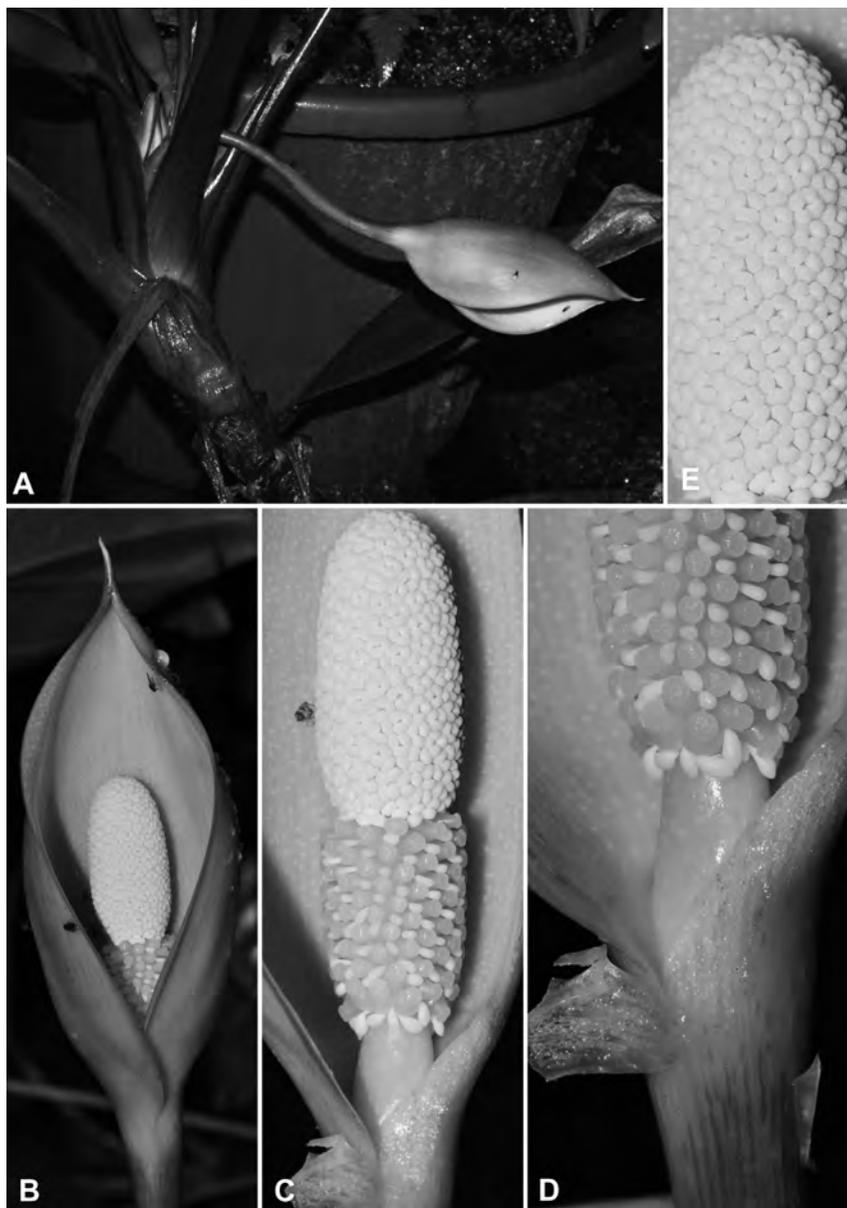


Fig. 2. *Homalomena selaburensis* P.C.Boyce & S.Y.Wong. **A.** Flowering plant in cultivation. Note the nodding inflorescence. **B.** Inflorescence at pistillate anthesis, with several unidentified *Colocasiomyia* flies. **C.** Spadix at pistillate anthesis. **D.** Detail of pistillate flower zone. **E.** Detail of staminate flower zone. **A–E** from AR-2170. Images © P.C.Boyce.

3–4-staminate, stamens each with two anthers; stamens elongate-globose, connective embedded and \pm invisible; thecae opening by a conspicuous lateral slit.

Infructescence pendent, spathe fully persistent and turning deep green, ellipsoid, ca. 5.5×2 cm; **fruit** and **seeds** not observed.

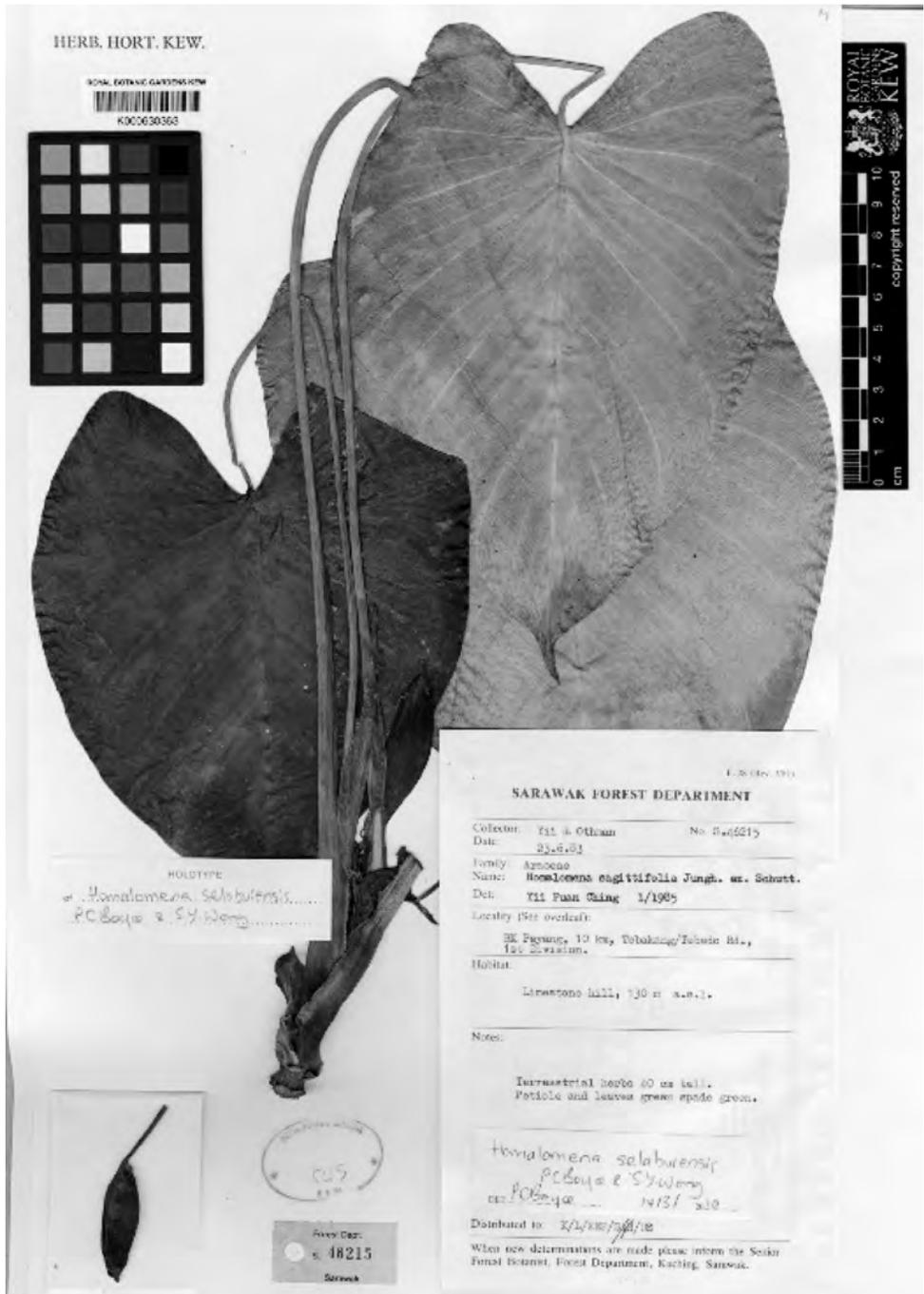


Fig. 3. *Homalomena selaburensis* P.C.Boyce & S.Y.Wong. Holotype: Yii Puan Ching & Haji Othman S.46215. Image © Herbarium, Royal Botanic Gardens, Kew. Used with permission.

Distribution—*Homalomena selaburensis* is restricted to the forested Karst limestone in Serian District, on which ecology numerous other aroids are endemic, including *Schismatoglottis confinis* S.Y.Wong, *S. convolvula* P.C.Boyce, *S. simonii* S.Y.Wong, but with the majority undescribed. So far *H. selaburensis* has not been located from the alkaline basalts of Ranchan, on the outskirts of Serian town, on which several other otherwise limestone-associated aroids occur (e.g., *Piptospatha viridistigma* P.C.Boyce, S.Y.Wong & Bogner, *Pothos insignis* Engl., *Schismatoglottis ranchanensis* S.Y.Wong). A collection from the basalts of Gunung Ampungan has yet to flower in cultivation, but is a close match for *Homalomena selaburensis*. Gunung Ampungan has several otherwise limestone-restricted species present, including *Alocasia reversa* Ridl., *Schismatoglottis confinis*, and *S. simonii*.

Ecology—*Homalomena selaburensis* occurs as a lithophyte in deep humus pockets on or at the base of Karst limestone formations under somewhat open perhumid lowland forest at between 40–120 m asl.

Etymology—From Selabur, where one of the largest populations occurs, and Latin, *ensis*—from — hence “from Selabur”. For more information about the rich-aroid flora of Gunung Selabur see Wong & Boyce (2006).

Notes—Although the Selaburensis Complex itself is well-enough characterized, the species of the Complex are taxonomically difficult to distinguish from each other, especially from herbarium material. Plants encountered sterile in the wild, especially from localities for which the Complex is not recorded, need to be flowered in cultivation to allow determination. So far all described species are associated with a particular geology; care should be taken to record accurately the habitat of plants in the field.

Other material examined: MALAYSIAN BORNEO. Sarawak. **Samarahan**. Serian, Pichin, Sungai Lanyang, 14 Jan. 2005, *P.C.Boyce & Simon Kutub ak Paru AR-974* (SAR) & 6 Sept. 2007, *P.C.Boyce &*

Simon Kutub ak Paru AR-2170 (SAR); Serian Pichin, Tua-an Ogong, 10 Nov. 2005, *P.C.Boyce & Simon Kutub ak Paru AR-1515* (SAR); Serian, Pichin, Sungai Tikuleng, 13 Nov. 2005, *P.C.Boyce & Simon Kutub ak Paru AR-1528* (SAR); Serian, Mongkos, Kampung Batuh, Gunung Selabur 00°57'26.2"N 110°30'15.8"E, 15 March 2006, *P.C.Boyce et al. AR-1730* (SAR); Serian, Pichin, Umon Murut, Tiab Belanting, 0°08'03.7"N 110°27'00.3"E, 1 Aug. 2010, *P.C.Boyce, Wong Sin Yeng & A.Kocyan AR-2613* (SAR); Serian, Kampung Mayang, 00°59'26.0"N 110°33'35.4"E, 6 Nov. 2011, *P.C.Boyce & Wong Sin Yeng AR-3676* (SAR).

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