

Studies on Schismatoglottideae (Araceae) of Borneo XXXXIX – *Schismatoglottis antu*, a new species allied to *Schismatoglottis gui*

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ABSTRACT

Ongoing fieldwork in the north western part of the “Heart of Borneo” has revealed a new species of *Schismatoglottis* allied to the recently described and enigmatic *Schismatoglottis gui* and *S. camera-lucida*. This novelty is here described and illustrated as *Schismatoglottis antu* S. Y. Wong & P. C. Boyce, sp. nov.

KEY WORDS

Araceae, *Schismatoglottis*, Borneo, Malaysia, Indonesia, Sarawak, Kalimantan, Heart of Borneo.

INTRODUCTION

The World Wide Fund for Nature’s “Heart of Borneo” initiative – http://wwf.panda.org/what_we_do/where_we_work/borneo_forests/ – sets out to both protect and undertake research in an extensive area of Borneo (**Figure 1**). While a significant part of the HoB initiative

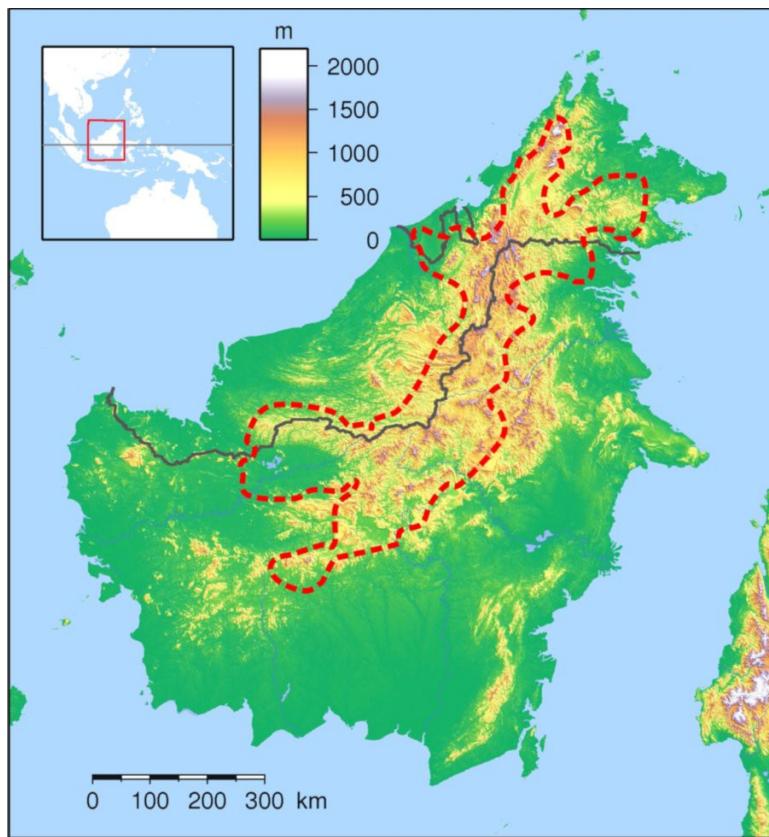


Figure 1. Map showing the extent of the 'Heart of Borneo' area. Wikimedia Commons.

focusses on animals, there is a plant element –

http://wwf.panda.org/what_we_do/where_we_work/borneo_forests/about_borneo_forests/borneo_animals/borneo_plants/ – which agreeably includes flora other than carnivorous plants, horticulturally significant orchids, and giant-flowered holoparasites.

Aroid-focused fieldwork in the northern part of the HoB area has revealed numerous taxonomic novelties, some of them perplexing as to affinity (Boyce & Wong, 2014a), of which we are here describing a further absorbing species of the genus *Schismatoglottis*.

***Schismatoglottis antu* S. Y. Wong & P. C. Boyce, sp. nov.** Type: Malaysian Borneo, Sarawak, Sri Aman, Lubok Antu, Sungai Engkari, Nanga Segerak, Sungai Segerak, 01°24'53.3"N 112°00'15.6"E, 19 Mar. 2015, *Wong Sin Yeng, P.C. Boyce & Bada ak Chendai AR- 5183* (holo SAR!; iso SBC). **Figures 2 & 3A.**

Diagnosis

Schismatoglottis antu most closely resembles *Schismatoglottis camera-lucida* P. C. Boyce & S. Y. Wong and *S. gui* P. C. Boyce & S. Y. Wong. From *S. camera-lucida*, *S. antu* is diagnosed by the lower spathe opaque (not

translucent) at anthesis. Additionally the cylindrical (not fusiform) staminate flower zone, and blunt, bullet-shaped (not tapering) appendix are differential. *Schismatoglottis antu* may be distinguished by the solitary (not fascicled) inflorescences, and the cylindrical (vs obconic) staminate flower zone about equalling (vs half as long) as the appendix. From both *S. gui* and *S. camera-lucida* differs by the fully pendulous leaf blades with a very pronounced drip-tip.

Description

Small, dense-clumping evergreen, facultative rheophytic herbs pendulous to ca 25 cm. **Stem** epigeal, elongated and rooting-ascending, terminal active portion densely leafy, older portions naked. **Leaves** pendulous, thinly chartaceous, ca 5 per module but modules very closely aggregated, subtended by a short, stiff **prophyll** ca 2 cm long, with the prophyll sheath wings hyaline and transparent; **petioles** up to 4.5 cm long, sheathing for ca $\frac{1}{2}$ their length, ascending, petiole above the petiolar sheath carinate, the dorsal edges sharp, petiole glossy dark green, asperous; **petiolar sheath** persistent, margins hyaline, more-or-less transparent, open, decurrent; **blade** up to 25×5 cm, oblanceolate, base decurrent to weakly cuneate, apex broadly acute and extended into a ca 8 cm long drip-tip terminating in short tubular mucro, blades rich semi-glossy green adaxially, matte pale green abaxially; **midrib** conspicuous, shallowly impressed adaxially, rounded-raised abaxially; **primary lateral veins** about 15 per side, somewhat

impressed adaxially, raised abaxially; **interprimary veins** barely distinguishable from the primaries; **secondary veins** tessellate abaxially and darker than surrounding tissue. **Inflorescences** solitary; **peduncle** slender, ca 5 cm long \times 2 mm wide, not emerging from the sheath during anthesis, extending during fruiting, pale green; **spathe** weakly constricted; **lower spathe** ellipsoid, ca 2 cm long \times 5 mm wide, somewhat fleshy, pale green; **spathe limb** narrowly triangular, ca 4 cm long, acute, gaping very slightly at pistillate anthesis, weakly inflating during staminate anthesis to form a narrow slit the length mid-portion of the spathe limb, limb white, rostrum green, limb deliquescent post anthesis to the constriction, into a greenish white slime, lower spathe persisting. **Spadix** slightly shorter than the spathe, sessile, ca 5 cm long; **pistillate flower zone** ca 1/3 the length of the spadix, ca 1.5mm \times 4 mm, weakly obconic, strongly obliquely inserted on the spathe/peduncle; **pistils** rather lax, compressed-globose, ca 1 \times 0.6 mm, creamy white; **style** very short, narrower than the ovary; **stigma** ca 1/2 width of the ovary, capitate, medium yellow, glossy-wet at pistillate anthesis; **interpistillar staminodes** reduced to a partial row of squat polygonal staminodes at the base of the pistillate zone; **interstice** ca 2 mm long, wider than the pistillate flower zone, covered with mushroom-shaped staminodes ca 1 mm diam., the tops rounded, dull white, becoming sticky-wet at staminate anthesis; **staminate flower zone** ca 7mm \times 3mm, cylindrical, ivory; **staminate flowers** very densely arranged, 2-staminate, although

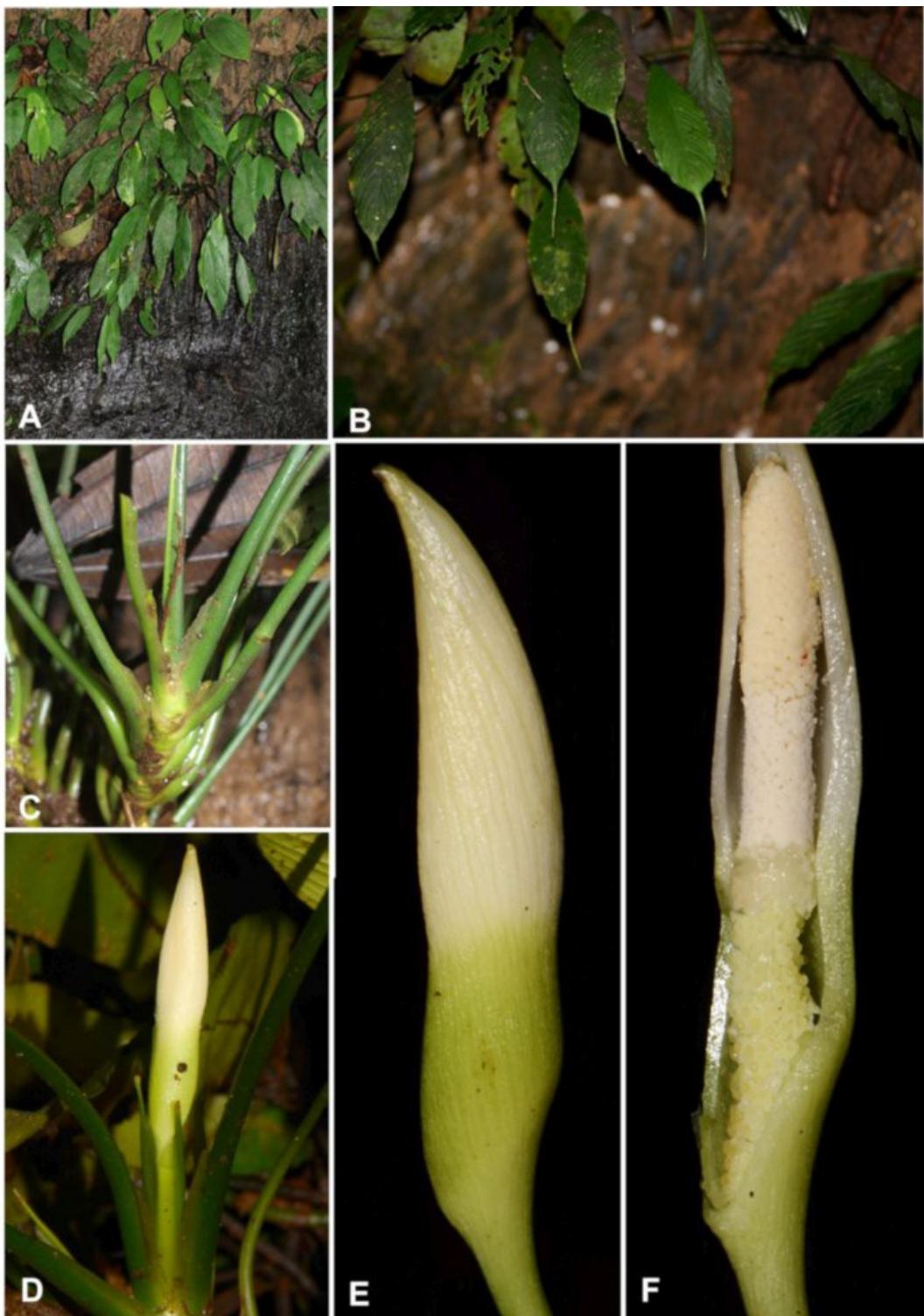


Figure 2. *Schismatoglottis antu* S. Y. Wong & P. C. Boyce. **A.** Plants in habitat, Type locality. **B.** Detail of the drip-tips. **C.** Petiole bases showing the persistent petiolar sheath and the asperous texture of the petiole. **D & E.** Inflorescence at pistillate anthesis. **F.** Inflorescence at staminate anthesis, nearside spathe artificially removed. All from Wong et al. AR-5183. Images: © P. C. Boyce.



Figure 3. Comparison of spadix of: **A.** *Schismatoglottis antu* S. Y. Wong & P. C. Boyce; **B.** *Schismatoglottis gui* P. C. Boyce & S. Y. Wong; and **C.** *Schismatoglottis camera-lucida* P. C. Boyce & S. Y. Wong. Image A: from Wong S. Y. et al. AR-5183; B: from Wong S. Y. & P. C. Boyce AR-3536; C: from Wong S. Y. & P. C. Boyce AR-3894. Images: © P.C.Boyce.

difficult to distinguish individual flowers; **stamens** globose, vaguely dumbbell shaped, connective embedded and \pm invisible; **thecae** opening by a tiny single pore; **appendix** ca 1 cm long, bullet-shaped, composed of irregularly oval staminodes, individually shallowly concave with a raised rim, ivory. **Infructescence** enclosed within a fleshy persistent spathe, the orifice of which is only slightly constricted and does not coincide with the spathe constriction, erect; **fruits** not observed.

Distribution — *Schismatoglottis antu* is so far known only from the Sungai Segerak and the joining Sungai Serjanggut where it is locally abundant but with individual populations scattered.

Ecology — *Schismatoglottis antu* occurs on very shaded riverside shale and earth banks under moist lowland gallery forest at ca 350 m asl.

Etymology — From the Iban language, *antu* – a ghost or demon. The species epithet was selected in mutual reference to Lubok Antu, the District in which falls the SW part of Lanjak Entimau Wildlife Sanctuary from where *S. antu* originates, and also by way of connotation to one of the two other most similar species: *Schismatoglottis gui*.

Notes — In spite of the discovery of this species, and the evident similarity of *S. antu*, *S. gui* (**Figure 3B**), and *S. camera-lucida* (**Figure 3C**), it is still far from clear to

which other species these three are related. As noted in Boyce & Wong (2014) molecular analyses are needed.

Schismatoglottis gui and *S. camera-lucida* are granite-restricted, the occurrence of *S. antu* on shales is another example of locally occurring species on specific geologies (see: Boyce & Wong, 2014b, c, d; Wong & Boyce, 2014a, b)

Other material examined: MALAYSIAN BORNEO. Sarawak. Sri Aman, Lubok Antu, Sungai Engkari, Nanga Segerak, Sungai Serjanggut, 01°24'45.5"N 112°00'19.4"E, 17 Mar 2015, Wong Sin Yeng, P.C. Boyce & Bada ak Chendai AR-5162 (SAR); Sri Aman, Lubok Antu, Sungai Engkari, Nanga Segerak, Sungai Serjanggut, 01°24'46.5"N 112°00'18.5"E, 17 Mar 2015, Wong Sin Yeng, P.C. Boyce & Bada ak Chendai AR-5167 (SAR).

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REFERENCES

- Boyce, P.C. & S.Y. Wong. 2014a. Studies on Schismatoglottideae (Araceae) of Borneo XXXVII – Three enigmatic new species of *Schismatoglottis* from the "Heart of Borneo" *Aroideana* 37E(1): 17–28 + Front cover.
- Boyce, P.C. & S.Y. Wong. 2014b. Studies on Homalomeneae (Araceae) of Borneo XVI: Three new shale-obligated *Homalomena* species. *Webbia* 69(1): 59–67.
- Boyce, P. C. & S.Y. Wong. 2014c. Studies on Homalomeneae (Araceae) of Borneo XV – A novel limestone-obligated *Homalomena* from SW Sarawak, Malaysian Borneo. *Aroideana* 37: 38–43.
- Boyce, P. C. & S. Y. Wong. 2014d. Studies on Schismatoglottideae (Araceae) of Borneo XXX – New species and combinations for *Bucephalandra* Schott. *Willdenowia* 44: 149–199.
- Wong S. Y. & P. C. Boyce. 2014a. Studies on Homalomeneae (Araceae) of Borneo XVII: Two new species of granite-restricted *Homalomena* from NW Sarawak. *Webbia* 69(1): 69–74.
- Wong S. Y. & Boyce, P. C. 2014b. Studies on Schismatoglottideae (Araceae) of Borneo XXXX: *Schismatoglottis petrodoxa* and *S. tseui*, new shale-obligate rheophytes of uncertain affinity. *Aroideana* 37E(2):17–25.