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Studies on Schismatoglottideae (Araceae) of Borneo LXXIII - *Schismatoglottis auyongii* [Calyptrata Clade], a new species for the Penrissen Range, Sarawak

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Abstract. *Schismatoglottis auyongii* is described and illustrated as a new clumping species of the *Schismatoglottis* Calyptrata clade from wet slopes in hill forest on the extremely hard Paleogene sandstones of the Penrissen Range, SW Sarawak.

Keywords: Borneo, Malaysia, Penrissen Range, Sarawak, *Schismatoglottis*.

INTRODUCTION

Schismatoglottis Zoll. & Moritzi was last monographed for Borneo by Hay (Hay and Yuzammi 2000), recognizing 62 species, of which 31 were then newly described. Subsequently the total for Borneo has risen to 129 species, of which 84 occur in Sarawak (Wong et al. 2018). These total species counts are assuredly going to rise with the eventual inclusion of currently incomplete material for approximately 40 undescribed species, and on-going fieldwork that continues to reveal plentiful further novelties. Here we describe a new clumping species of the *Schismatoglottis* Calyptrata clade (sensu Low et al. 2018) from wet slopes in hill forest on the extremely hard Paleogene sandstones of the Penrissen Range, SW Sarawak. Geology in this paper is specified based on Hutchison (1989, 2005) and Tate (2001).

Schismatoglottis auyongii S.Y.Wong & P.C.Boyce, **sp. nov.**

Type: Malaysia. Sarawak, Kuching, Padawan, Puncak Borneo, forested steep gully, 1°07' 41.7"N 110°12'59.7"E, 870 m asl. 15 Sep 2014, Wong Sin Yeng & P.C.Boyce AR-489 (SAR!, holotype + spirit). (Figures 1 and 2).

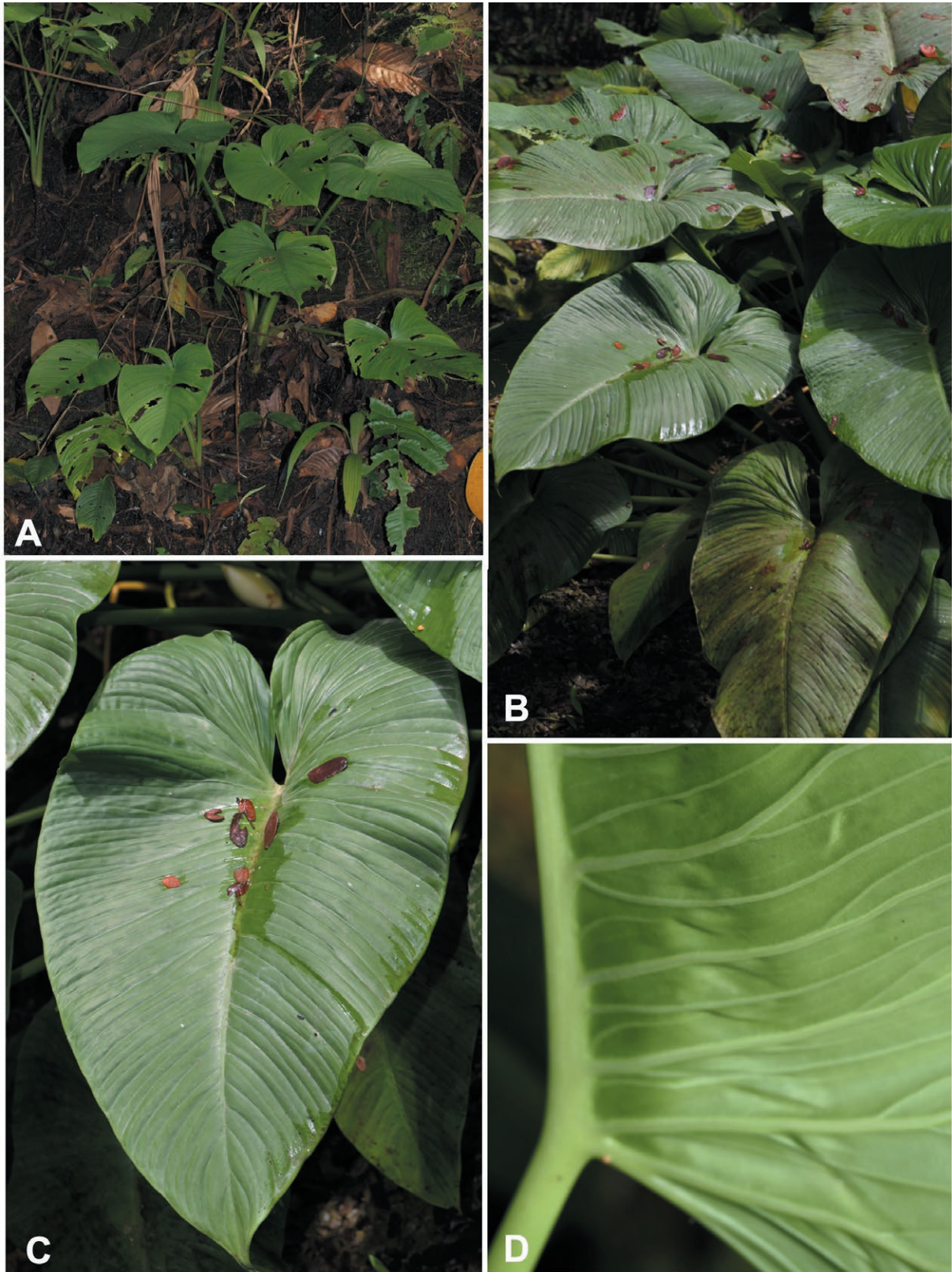


Figure 1. *Schismatoglottis auyongii* (A & B) Plants in habitat. (C) Leaf blade adaxial surface showing the quilted texture. (D) Detail of leaf blade abaxial surface in the region of the posterior lobes. All from Wong Sin Yeng & P.C.Boyce AR-489.

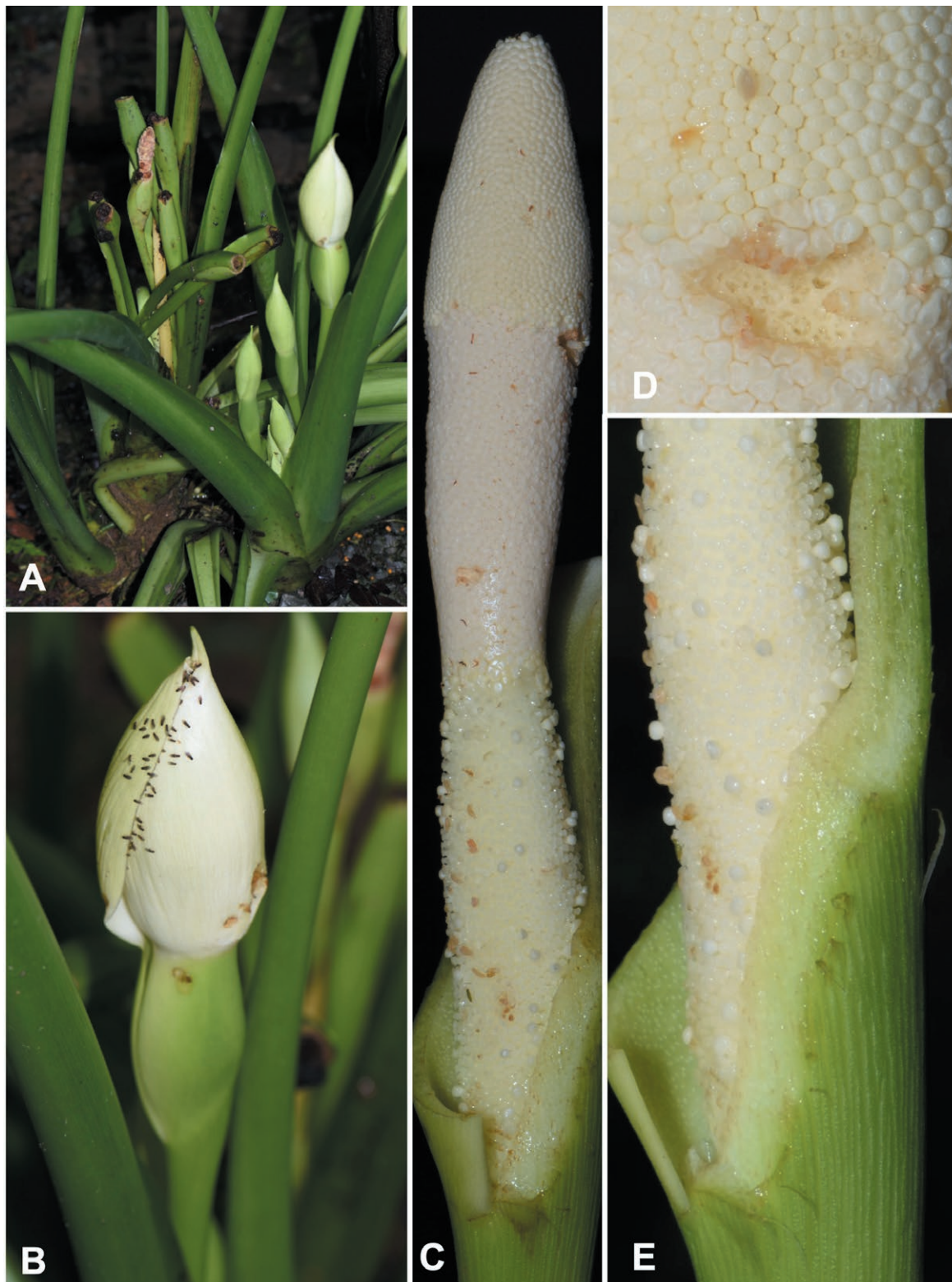


Figure 2. *Schismatoglottis auyongii* (A) Flowering habit; note the succession of developing blooms. (B) Bloom at pistillate anthesis with numerous *Colocasiomyia* on the spathe limb. (C) Spadix at late pistillate anthesis, spathe artificially removed. (D) Detail of upper part of staminate zone and lower part of appendix; the damage caused by Chrysomelid beetles. Spathe, artificially removed, natural form. (E) Pistillate zone of spadix at pistillate anthesis, spathe artificially removed. All from Wong Sin Yeng & P.C.Boyce AR-489.

Diagnosis

Schismatoglottis auyongii is most like *S. trivittata* Hallier f., (N.B., incorrectly attributed to Hallier (senior) in IPNI, POWO and the Kew World Checklist) to which it keys in Hay & Yuzammi (2000), differing by the much larger and more robust habit, leaf blades with the major veins impressed (and larger blades with a quilted appearance), and posterior lobes overlapping across the sinus, the spadix adnate to the spathe for c. ½ its length (vs spadix free), and the much stouter appendix. *Schismatoglottis auyongii* additionally approaches several Bornean species (*S. clarae* A.Hay, *S. moodii* A.Hay, and *S. niahensis* A.Hay) from which it may be differentiated as follows: from *S. clarae* by the strongly cordate leaf blades (vs leaf blade base acute to rounded and not at all cordate); from *S. moodii* by the posterior lobes overlapping across the sinus (vs posterior lobes out-turned); and from *S. niahensis* by the stems entirely hypogean (vs stems largely epigeal).

Description

Robust clumping herb up to 150 cm tall although often closer to 100 cm. Stem hypogean, hapaxanthic, very stout, c. 6 cm diam. in biggest individuals. Leaves to 12 together; petiole to c. 65 cm long, sheathing in the lower 2/5, medium green with rather dense paler short streaks; wings of sheath fully attached, tapering, apically truncate; blade broadly ovato-sagittate, 25–50 cm long × 15–30 cm wide, adaxially semi-glossy bright medium green, slightly paler abaxially, base cordate, posterior lobes to 11 cm long, in all but the smallest leaves the lobes overlapping in the sinus, tip acute and acuminate for 2–4 cm; midrib prominent, with 11–15 primary impressed lateral veins on each side, irregularly alternating with lesser interprimaries and diverging at c. 60°, the lower ones usually branched, giving off 1 or 2 veins similar in size to the interprimaries, and arising at almost 90° to the midrib, leaf blades, especially the biggest ones, with a somewhat quilted appearance; secondary venation arising from the midrib and from along the lower c. ½ of the proximal primary veins; tertiary venation obscure. Blooms up to 12 together, arising and maturing sequentially; peduncle 13–20 cm long. Spathe 12–15 cm long; lower spathe narrowly ovoid, 4–6 cm long, differentiated from the limb by a strong constriction, semi-matte pale green; limb broadly ovate, 8–10 cm long, white, rather thick, inflated over the appendix at anthesis, caducous. Spadix with the pistillate zone adnate to the spathe for about half its length, 8.5–13 cm long, subcylindric to very faintly hourglass shaped; pistillate zone 4–6 cm long, adnate to the spathe for c. ½ its length, 0.8–1.2 cm wide in the middle, distally

slightly conic, c. 4–7 mm diam. at the top; pistils very crowded, bottle-shaped, c. 1 mm diam. very pale yellow; stigma slightly elevated on a short style, button-like, papillate, about as wide as the ovary; interstillar staminodes scattered among the pistils, stalked, clavate with the head depressed globose, exceeding the pistils, waxy white; sterile interstice ill-defined, the upper part of pistillate zone covered with two incomplete whorls of squashed pistils mixed with a few interstillar staminodes level with the spathe constriction; staminate zone slightly obconic, 2.4–3.4 cm long, 8–9 mm diam. at top; stamens densely crowded, not obviously arranged in discrete flowers, truncate, c. 1 mm across, butterfly shaped with the connective narrow, the thecae tops slightly excavated with a wide rim, waxy white; appendix bluntly conoid, 1.7–2.6 cm long, the base slightly wider than top of the staminate zone, 0.9–1.1 cm diam. at base; staminodes of appendix columnar, irregularly polygonal with very rounded angles, rounded-topped, c. 0.5 mm diam., pale cream. Infructescence unknown at maturity, developing infructescences declinate, persistent spathes narrowly fusiform with a conspicuous scar from the fallen spathe limb.

Eponymy

Named for the late Datuk Au Yong Nang Yip (1938–2009) who in 1969 founded the Orchidwoods Company, Kuching, Sarawak, and whose name remains one of the most famous associated with the discovery and cultivation of Bornean native orchids, and orchid hybridisation. Orchidwoods are the recipients of countless awards for orchid growing and breeding and have earned the name as Sarawak's most reputable establishment in the industry.

Distribution

Restricted to the Penrissen range in SW Sarawak.

Ecology

Occurring between 480 and 1100 m asl on wet slopes under rather open hill forest over Paleogene sandstones, often gregarious on rocky permanently wet seepages and road cuttings in light shade.

Notes

Much as with the stoloniferous species of the *Schismatoglottis* Calyptrata clade (Wong & Boyce 2021), the taxonomy of the clumping species of the clade remains much understudied, the situation made exasperating by several of the earliest published names, including *S. trivittata*, the species to which *S. auyongii* is

most similar, being based on cultivated plants of imprecise origin and with inadequate nomenclatural types (see Hay in Hay and Yuzammi 2000: 149). We are taking a pragmatic approach and describing as new those entities that are consistently distinct. In habitat blooms are visited by *Colocasiomyia* (Diptera: Drosophilidae), the likely pollinators, and Chrysomelidae beetles, the latter causing extensive damage to the staminate florets and the appendix staminodes (Figure 2, B & D) — see also Chai and Wong (2019) and Hoe et al. (2018).

Wong SY, Boyce PC. 2021. Studies on Schismatoglottideae (Araceae) of Borneo LXX — New colonial species for the *Schismatoglottis* [Calyprata Clade] from Sarawak. *Webbia*. 76(2): 81–103.

Wong SY, Hay A, Boyce PC. 2018. An annotated checklist for *Schismatoglottis*. *Aroideana*. 41(2–3): 34–200.

Additional specimens examined (paratypes)

MALAYSIA: Sarawak. Kuching, Padawan, Puncak Borneo, Air Terjun Semangas, 1°08'26.6"N 110°13'36.1"E, 472 m asl., 16 Sep 2014, Wong Sin Yeng & P.C.Boyce AR-4981 (SAR) & Wong Sin Yeng & P.C.Boyce AR-4982 (SAR).

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REFERENCES

- Chai SK, Wong SY. 2019. Five pollination guilds of aroids (Araceae) at Mulu National Park (Sarawak, Malaysian Borneo). *Webbia*. 74(2): 353–371.
- Hay A, Yuzammi. 2000. Schismatoglottideae (Araceae) in Malesia I — *Schismatoglottis*. *Telopea*. 9: 1–177.
- Hoe YC, Gibernau M, Wong SY. 2018. Diversity of pollination ecology in the *Schismatoglottis* Calyprata Complex Clade (Araceae). *Plant Biology*. 20(3): 563–578.
- Hutchinson, C.S. 1989. *Geological Evolution of South-East Asia*. Malaysia: Oxford University Press.
- Hutchinson, C.S. 2005. *Geology of north-west Borneo: Sarawak, Brunei and Sabah*. Elsevier, The Netherlands.
- Low SL, Wong SY, Boyce PC. 2018. Naming the chaos: generic redelimitation in Schismatoglottideae (Araceae). *Webbia*. 72(2): 1–100.
- Tate RB. 2001. *The Geology of Borneo Island CD-ROM*. Persatuan Geologi Malaysia: Geological Society of Malaysia.