A new species of *Schismatoglottis* (Araceae) from Sabah, Malaysian Borneo

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**Abstract.** *Schismatoglottis mons* Kartini is described as taxonomically novel species assigned to the Asperata Complex. *Schismatoglottis mons* is a highland mesophytic species found at c. 718 m a.s.l. most like lowland *Schismatoglottis gillianiae* P.C. Boyce and *Schismatoglottis shaleicola* P.C.Boyce & S.Y.Wong.

**Keywords:** Araceae, Malaysian Borneo, Schismatoglotideae, Schismatoglottis.

**INTRODUCTION**

The first informal Asperata Group was proposed by Hay in Hay and Yuzammi (2000). Boyce and Wong (2014) proposed a modified informal taxon, the Asperata Complex, defined within the Asperata Group and defined by asperate to coarsely granulate petioles, a petiolar sheath with the wing extended into a free ligular portion, erect inflorescences in which the spathe limb irregularly crumbles and breaks away at or after staminate anthesis, and erect infructescences with a persistent lower spathe with an unconstructed terminal orifice and with thickened walls remaining white beyond fruit maturity. Low et al. (2018) demonstrated, at broadest sense (i.e., Hay, 2000), that the Asperata Group is very diverse and heterogeneous, but nested within are several well-supported clades delineated both molecularly and by consistent characteristics.


Until now three species of the Asperata Complex has been recorded in Sabah. *Schismatoglottis tahubangensis* recorded from Tahubang River along route to Marak-Parai (Hay and Herscovitch, 2003) and *S. zainuddinii* found in Tawau Hills Park, Tawau (Kartini et al. 2017)
Key to Sabahan species of the *Schismatoglottis* Asperata Complex

1a. Petiolar sheath broader at the base extended into fleshy ligule. Tawau Hills Park, Tawau

-----------------------------------------------------------------------------  *Schismatoglottis* zainuddini

1b. Petiolar sheath only at the extreme base extended into a narrowly triangular ligule

-----------------------------------------------------------------------------  *Schismatoglottis* tahuangensis

2a. Papery ligule, peduncle short c. 3 cm long, creeping or decumbent. Tahubang River, Ranau

-----------------------------------------------------------------------------  *Schismatoglottis* mons

2b. Fleshy ligule, peduncle long c. 9 cm long, suberect. Mensalong Forest Reserve, Kota Marudu

**Schismatoglottis mons** Kartini, sp. nov.

**Type**: Malaysia, Sabah, Kota Marudu, Mensalong Forest Reserve 06°13.915’S 116°46.261’E, 30 July 2019 Kartini Saibeh 2708 (holotype BORH!).

**Diagnosis**

The inflorescence of *Schismatoglottis mons* is most similar to that of rheophytic *S. gillianiae*. However, *S. gillianiae* has a very short peduncle (c. 2-3.5 cm long), fleshy persistent ligular petiolar sheaths and narrowly oblanceolate leaves whereas *S. mons* have long peduncle c.10 cm, a marcescent free ligular petiolar sheath and ovate to oblance-ovate leaves. *Schismatoglottis mons* differs from mesophytic *S. shaleicola* by the inflorescence peduncle up to 10 cm long, the yellow spadix, a slender cylindrical appendix about twice as long as remainder of spadix, pink sterile interstice.

**Description**

Moderately robust mesophytic herb to c. 30 cm tall. **Root** densely covered with short soft minute hairs, c. 0.3 cm diam. **Stem** condensed, suberect, becoming epigean, to c. 2 cm diam., obscured by leaf bases, usually red; pleonanthic. **Leaves** several together (6-10) with roots emerging from their bases; petiole 9–15 cm long, D-shaped in cross-section, usually shorter than the length of the blade, verruculose-pubescent, erose on each side on the adaxial face, dark green, dark red sometimes more than half length, sheathing only at the extreme base with the sheath extended into a narrowly triangular, fleshy ligular portion 2-4 cm long, marcescent, emerging leaves pink; blade ovate to oblance-ovate, rather leathery, 14–26 cm long x 5–7 cm wide, glossy medium green adaxially, paler abaxially, the base retuse to narrowly truncate or less narrowly cordate, the tip acute to obtuse and shortly apiculate; midrib abaxially prominent; abaxial primary lateral veins conspicuous, crowded, c. 15 on each side, alternating with lesser interprimaries, diverging at c. 45–60°; secondary venation almost all arising from the midrib; tertiary venation indistinct. **Inflorescence** solitary to two or more together, with a sweet floral scent at anthesis, strongest during pistillate anthesis; peduncle 9-10 cm long, subtended by two or more broad membranous cataphylls.; Spathe c. 12 cm long, sub-cylindrical, tapering; lower spathe c. 2 cm long, slightly creamy pinkish and greenish, spathe limb differentiated from the limb by colour but no obvious constricting separating them; limb c. 10 cm long, apiculate for c. 4 mm, pale pink to creamy, opening wide than crumbling and breaking away at late staminate anthesis. Spadix sessile, shorter than the spathe, c. 10 cm long; pistillate flower zone 1–2 cm long, oblique insertion, 0.5–1 cm diam. at base, faintly conoid; pistils crowded, creamy, squat mushroom-shaped, c. 1 mm diam.; stigma sessile, discoid to irregularly polygonal, centrally impressed, papillate, wider than ovary; inter-pistillar staminodes few, white, scattered among the pistils, slightly taller than the pistils, c. 0.8 mm diam., the tops depressed in the middle; sterile interstice c. 2-3 mm long, pinkish, isodiametric with top of female and base of male zones, 2–3 whorls of irregularly polygonal sterile stamens c. 1 mm diam., interspersed with a few inter-pistillar staminodes; staminate flower zone 0.8–1 cm long, cylindric; stamens pinkish, crowded, truncate with the thick connective slightly elevated above the thecae, more or less rectangular to triangular from above; appendix yellow, about twice the length of the rest of the spadix, widest shortly above the base and there somewhat wider than male zone, then gradually tapering to a narrow blunt tip; staminodes of appendix more or less flattened, irregularly polygonal, c. 1 mm diam., crowded.

**Etymology**

**Mons**, Latin meaning mountain, and referring to the occurrence of the species at altitude.

**Distribution**

*Schismatoglottis mons* occurs in the Mensalong Forest Reserve, Kota Marudu at c. 718 m a.s.l. Populations are small and scattered.

**Ecology**

Terrestrial in wet hill forest on steep slopes on soils derived from Middle Eocene sandstone sediments [Crocker Formation], c. 720 m a.s.l.
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Notes

The Mensalong Forest Reserve was formerly part of Lingkabau Forest Reserve located in the Kota Marudu, Sabah. The reserve shares approximately 5 km of its boundary in the west with the Kinabalu National Park.

Schismatoglottis mons is the second recorded species of S. asperata Complex occurring above 700 m. Schismatoglottis tahubangensis known only from the type was recorded at c. 1,100 m.

Figure 1. Schismatoglottis mons – A: flowering plant in habitat; B: inflorescence at onset of pistillate anthesis (spathe artificially removed); C: pistillate zone (spathe artificially removed); D: inflorescence at late of pistillate anthesis (spathe artificially removed); E: spathe limb irregularly crumbling and breaking away after staminate anthesis; F: marcescent ligular petiolar leaf sheath – All from Kartini BORH 2708. – All photographs by Kartini Saibeh.
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