



Citation: Saibeh K., Wahab Abdul N.R. (2025). A new species of *Borneoa* (Araceae) from Sabah, Malaysian Borneo. *Webbia. Journal of Plant Taxonomy and Geography* 80(2):245-248. doi: 10.36253/jopt-17856

Received: May 17, 2025

Accepted: June 20, 2025

Published: July 18, 2025

© 2025 Author(s). This is an open access, peer-reviewed article published by Firenze University Press (<https://www.fupress.com>) and distributed, except where otherwise noted, under the terms of the CC BY 4.0 License for content and CC0 1.0 Universal for metadata.

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Editor: Sin Yeng Wong

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

KARTINI SAIBEH*, NOR RASYIDAH ABDUL WAHAB

Faculty of Tropical Forestry, Universiti Malaysia Sabah, Sabah, Malaysia

*Corresponding author. Email: k_saibeh@ums.edu.my

Abstract. *Borneoa rawogensis* Kartini & Nor Rasyidah is described as taxonomically novel species. *Borneoa rawogensis* is a lowland mesophytic species found at c. 40 m a.s.l. distinguished from all described *Borneoa* by lacking prominent sterile interstice that separating the pistillate and staminate zones.

Keywords: Araceae, *Borneoa*, Malaysian Borneo, Schismatoglottideae.

INTRODUCTION

Integrative molecular and morphological analyses (Boyce and Wong, 2008; Wong et al., 2010; Low et al., 2014; Low et al., 2018) have demonstrated that *Schismatoglottis* Zoll. & Moritz, as circumscribed by Hay and Yuzammi (2000), is polyphyletic. This finding has led to the recognition and establishment of several new genera. Subsequent work by Wong and Boyce (2024), supported by evidence from Low et al. (2018), further resolved the taxonomy by assigning species of *Schismatoglottis* characterized by pleionanthic shoots and variably senescing spathe limbs to seven newly described genera: *Aia* (S.Y.Wong & P.C.Boyce), *Ayuantha* (S.Y.Wong & P.C.Boyce), *Bau* (S.Y.Wong & P.C.Boyce), *Borneoa* (S.Y.Wong & P.C.Boyce), *Ibania* (S.Y.Wong & P.C.Boyce), *Sarawakia* (S.Y.Wong & P.C.Boyce) and *Tweeddalea* (S.Y.Wong & P.C.Boyce).

Borneoa are small to medium-sized herbaceous plants with petioles often scabrid-hispid and bear prominent, leathery ligules that are persistent but become marcescent with age; these ligules are frequently unequal in size. The inflorescences are erect, with a lower persistent region exhibiting markedly thickened walls. The spathe limb is predominantly white and undergoes disintegration or liquefaction during staminate anthesis (Wong and Boyce, 2024).

Currently the *Borneoa* comprises twenty-two species with all but one (*B. scortechini* (Hook.f.) S.Y.Wong & P.C.Boyce) restricted to island of Borneo.

Three species of the *Borneoa* are recorded for Sabah, all endemic. *Borneoa tahubangensis* (A. Hay & Herscovitch) S.Y.Wong & P.C.Boyce found just outside Kinabalu Park (Hay & Herscovitch 2003), *B. zainuddinii* (Kartini, P.C. Boyce & S.Y. Wong) S.Y.Wong & P.C.Boyce found in Tawau Hills

Park, Tawau (Kartini et al. 2017), and *B. mons* (Kartini, S.Y.Wong & P.C.Boyce found at Kota Marudu (Kartini, 2022). These three all have localized distributions in Sabah. Here we describe a fourth species, *B. rawogensis* Kartini & Nor Rasyidahs **sp. nov.** in Sandakan.

Key to Sabahan species of the *Borneoa*

- 1a. Leaf blades narrowly obovate 2
- 1b. Leaf blades ovate or elliptic..... 3
- 2a. Spathe 7 cm long, pinkish; spadix 5.3 cm long; sterile interstice present. Kinabalu Parks about 1,100 m a.s.l. (only known from the type) ***B. tahubangensis***
- 2b. Spathe 9 cm long, green with creamy limb; spadix 7 cm long; sterile interstice absent. Rawog river, Segaluid Lokan Forest Reserve, Sandakan altitude about 40 m a.s.l..... ***B. rawogensis***
- 3a. Leaf blade ovate to oblong-ovate, 14–26 cm long; Spathe pinkish, 12 cm long, sub-cylindrical; spadix 10 cm long; sterile interstice present. Mensalong Forest Reserve, Kota Marudu above 700 m a.s.l. ***B. mons***
- 3b. Leaf blade broadly elliptic, 17 cm long; Spathe 4.5 cm long, dirty white; spadix 4 cm long; sterile interstice present. Tiku river, Tawau Hills Park below 400 m a.s.l..... ***B. zainuddinii***

Borneoa rawogensis Kartini & Nor Rasyidah, **sp. nov.** (Figure 1).

Type: Malaysia, Sabah, Sandakan, Segaluid Lokan Forest Reserve 5°27.732' N 117°33.905' E, 5 September 2023, Kartini 2744 (holotype BORH!).

Diagnosis

Borneoa rawogensis is readily distinguished from all other described species within the genus *Borneoa* by the absence of prominent sterile stamens separating the staminate and pistillate floral zones. It is further differentiated from other *Borneoa* taxa occurring in Sabah by its greenish spathe, an elongated staminate zone approximately 1.5 cm in length, and a yellow, cylindrical appendix measuring about 4.5 cm (Fig. 2).

Description

Mesophytic herb to c. 30 cm tall, solitary or forming small clumps. *Roots* covered with short soft minute hairs, c. 2 mm diam. *Stem* condensed, erect, to c. 1.5 cm diam., modules pleioanthic; internodes obscured by overlapping leaf bases. *Leaves* several together (8–14) with roots emerging from between their bases; petiole 7–12 cm

long, D-shaped in cross-section, shorter than the length of the blade, very slightly asperulate, green, sheathing at the base, up to 1/2 of the petiole length, sheath extended into a blunt, fleshy ligular portion 0.5 cm long, degrading in the older petioles; blade narrowly obovate, thinly succulent, 18–30 cm long x 3.5–5 cm wide, matte green adaxially, paler abaxially, base very narrowly cordulate, tip acuminate; midrib abaxially prominent; abaxial primary lateral veins c. 12 on each side, alternating with lesser interprimaries, diverging at c. 30°; secondary venation almost all arising from the midrib; tertiary venation obscure. *Inflorescence* producing slightly faint sweet floral scent at anthesis, solitary to paired, developing sequentially with first inflorescence in late staminate anthesis when next inflorescence reaches pistillate anthesis, each inflorescence subtended by two cataphylls; peduncle c. 4 cm long; spathe c. 9 cm long, sub-cylindrical, tapering; lower spathe c. 3 cm long, greenish, differentiated from limb by colour and a faint constriction coinciding with top of staminate flower zone; limb c. 6 cm long, apiculate for c. 4 mm, cream, slightly open then crumbling-deliquescent at late staminate anthesis. Spadix sessile, shorter than the spathe, c. 7 cm long; pistillate flower zone c. 1 cm long, oblique insertion, 0.5–1 cm diam. at base; pistils crowded, creamy, squat mushroom-shaped, c. 1 mm diam.; stigma sessile, discoid, slightly sunken centrally, papillate, wider than ovary; interpistillar staminodes few, waxy white, scattered among the pistils, slightly taller than the pistils, c. 0.8 mm diam., the tops depressed in the middle; sterile interstice absent; staminate flower zone 1.5 cm long, cylindric; stamens creamy yellow, somewhat lax, more or less dumbbell-shaped from above, c. 1 mm in diam.; pollen in short strings; appendix yellow, c. 4.5 cm long, c. 0.4 cm in diam., somewhat tapering-cylindric, appendix staminodes irregularly polygonal, flat topped. Infructescence not observed.

Etymology

From Rawog + *ensis*, a suffix denoting the place of origin.

Distribution

Borneoa rawogensis occurs on steep slopes and earth banks of the Rawog river, Segaluid-Lokan Forest Reserve, Sandakan at c. 20–40 m a.s.l. Populations are small with rather few individuals and scattered small clumps. A population of *Rhaphidophora fluminea* Ridl. was also observed growing along the muddy riverbank.

Ecology

The Rawog River valley consists of old alluvial deposits. The soils, primarily of the Tanjong Lipat Fam-

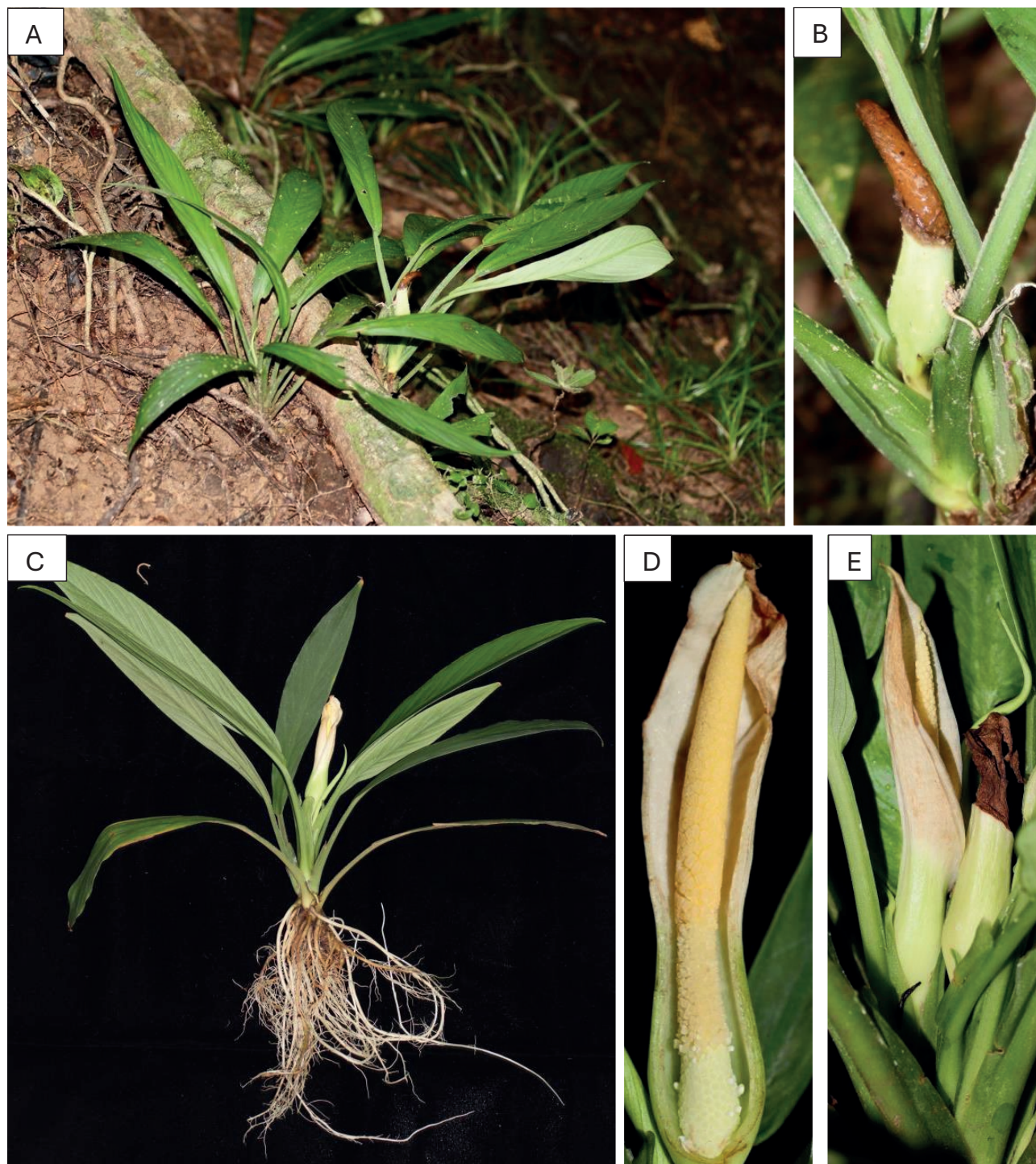


Figure 1. *Borneoa rawogensis* sp. nov. A: plants in habitat; B: spathe limb liquefying after staminate anthesis; C: whole plant prior to pressing; note hispid-scabrid petiole; D: inflorescence at late of pistillate anthesis (spathe artificially removed); E: flowering sympodial unit showing sequential development of inflorescences: pistillate anthesis (left), after staminate anthesis (right). All photographs by Kartini Saibeh.

ily, are derived from interbedded sandstone and mudstone/shale of the Sook Association. These soils are gen-

erally infertile and low in plant-available nutrients (Dyi et al. 2019).



Figure 2. Spadices of Sabahan *Borneoa* compared. A: *Borneoa rawogensis* Kartini & Nor Rasyidah; B: *Borneoa mons* (Kartini) S.Y.Wong & P.C.Boyce; C: *Borneoa zainuddinii* (Kartini, P.C.Boyce & S.Y.Wong) S.Y.Wong & P.C.Boyce. All photographs by Kartini Saibeh.

Notes

The Segaluid Lokan Forest Reserve covers an area of 57,247 ha. The reserve has been managed by KTS Plantation Sdn. Bhd since 1993 under the License Agreement for Timber Tree Plantation and Wood Processing Plant which has an effective period of 96 years.

Borneoa rawogensis is the first recorded species of *Borneoa* found in alluvial forest at 40 m a.s.l.

ACKNOWLEDGMENTS

This study was carried out under scientific expedition to Segaluid Lokan Forest Reserve, Sandakan, Sabah organized by KTS Plantation Sdn. Bhd. and Sabah Forestry Department. This project funded by UMS' Research Grant GKP00010-ST-2016, DN22102 and GUG0608.

REFERENCES

- Boyce PC, Wong SY. 2008. Studies on Schismatoglottideae (Araceae) of Borneo VII: *Schottarum* and *Bakoa*, two new genera from Sarawak, Malaysian Borneo. Botanical Studies (Taipei). 49: 393–404.
- Dyi EKM, Dullah S, Titin J. 2019. Soil Assessment of Sungai Rawog Conservation Area (SRCA) in Segaluid Lokan Forest Reserve, Sabah in SFD & KTS (2019) Proceedings of the Seminar on Sungai Rawog Conservation Area Scientific Expedition. 21st February 2019, Kota Kinabalu. Sabah Forestry Department & KTS Plantation Sdn. Bhd. 284 pp.
- Hay A., Yuzammi. 2000. Schismatoglottideae (Araceae) in Malasia I — Schismatoglottis. Telopea. 9(1): 1–177.
- Hay A, Herscovitch C. 2003. A New Species of *Schismatoglottis* (Araceae) from Sabah, Malaysia. Garden's Bulletin Singapore. 55(2003): 27–30.
- Kartini S. 2022. A New Species of *Schismatoglottis* (Araceae) from Sabah, Malaysian, Borneo. Webbia. 77(2):267–270.
- Kartini S, Boyce PC, Wong SY. 2017. Studies on Schismatoglottideae (Araceae) of Borneo LV: New *Schismatoglottis* species from Tawau Hills, Sabah. Nordic Journal of Botany. 35(6): 719–723.
- Low SL, Wong SY, Boyce PC. 2014. *Schottarum* (Schismatoglottideae: Araceae) substantiated based on combined nuclear and plastid DNA sequences. Plant Systematics and Evolution. 300(4): 607–617.
- Low SL, Wong SY, Boyce PC. 2018. Naming the chaos: generic redelimitation in Schismatoglottideae (Araceae). Webbia. 73(1): 1–100.
- Wong SY, Boyce PC, Sofiman Othman A, Leaw CP. 2010. Molecular phylogeny of tribe Schismatoglottideae based on two plastid markers and recognition of a new tribe, Philonotieae, from the neotropics. Taxon. 59(1): 117–124.
- Wong SY, Boyce PC. 2024. Schismatoglottideae (Araceae) of Borneo LXXVII - Circumscribing *Schismatoglottis sensu stricto*, and seven new genera. Webbia. Journal of Plant Taxonomy and Geography 79(2): 255–289.