

Homalomena sungaikeliensis, a new species of Bornean aroids from Indonesia

Irsyam A.S.D.¹, Setiawan A.A.² & M.R. Hariri^{3*}

¹Herbarium Bandungense, School of Life Sciences and Technology, Institut Teknologi Bandung,
Sumedang, West Java – 45363, Indonesia

²Jungle Plants Farm, Bogor, West Java – 16812, Indonesia

³Research Centre for Biosystematics and Evolution, National Research and Innovation Agency (BRIN),
Bogor, West Java – 16911, Indonesia

*E-mail: muha157@brin.go.id

Abstract: *Homalomena sungaikeliensis*, a new species within the family Araceae, is described from West Kalimantan, Indonesian Borneo. This species exhibits morphological characteristics that distinguish it from other previously documented scintillating-velutinous *Homalomena* in Borneo. While exhibiting affinities with *H. hottae*, *H. sungaikeliensis* can be differentiated by the arrangement of pistillate flowers in three spirals, globose creamy-white staminodes, and staminate flowers comprising three to four white stamens. A detailed morphological diagnosis is presented, accompanied by data on its geographic distribution, phenology, and taxonomic distinctions to support accurate delimitation and identification.

Keywords: Araceae, *Homalomena*, Malesia, Ngabang, Philodendreae.

Introduction

Borneo serves as a prominent centre of species diversity for the genus *Homalomena* Schott within the Malesian region, with more than 73 species currently documented on the island (POWO, 2025). Substantial taxonomic research on Borneo's *Homalomena* over the past decade, notably by Wong *et al.* (2020a, 2020b) and Wong and Boyce (2020a, 2020b, 2020c, 2021a, 2021b, 2022, 2023a, 2023b, 2023c), has led to the identification of 11 new species, addressed nomenclatural challenges, and provided detailed morphological descriptions.

Received: 28.01.2025; Revised & Accepted: 16.06.2025

Published Online: 30.09.2025

These studies have significantly advanced the taxonomic understanding of the genus on the island.

The potential for discovering new *Homalomena* species in Kalimantan remains considerable, as the full extent of its diversity in the region has yet to be thoroughly investigated, particularly in comparison to the more comprehensively studied areas of Sarawak and Sabah. The limited understanding of the geographical areas, coupled with the highly localized distributions typical of *Homalomena*, underscores the likelihood of uncovering novel species through targeted fieldwork in underexplored regions. The most recent new species from Kalimantan, *H. tirtae* Asih, Kurniawan & P.C.Boyce, was formally described by Asih *et al.* (2012).

We identified an undescribed species of *Homalomena* from West Kalimantan, Borneo, during our observations at a private nursery in Bogor in 2024. This nursery is owned by the second author, who also collected the specimen under study. This new species is distinguished by a set of unique morphological characteristics that clearly differentiate it from other *Homalomena* species previously documented in Borneo. Given these distinctive features, we formally describe and report this species as a novel taxon in the current study.

Materials and Methods

Morphological studies of the new species were carried out between July 2024 and January 2025, incorporating both private nursery-collected and herbarium material. Herbarium specimens were prepared following Davis *et al.* (2024), and taxonomic identification was based on the treatments by Wong *et al.* (2020a, 2020b) and Wong and Boyce (2020a, 2020b, 2020c, 2021a, 2021b, 2022, 2023a, 2023b, 2023c). Observations were initially conducted at a private nursery in Bogor, with supplementary material examined at the Herbarium Bogoriense (BO). The analysis focused on detailed morphological characterization, particularly of the inflorescence, which was documented using a Dino-Lite digital microscope at the National Research and Innovation Agency (BRIN) in Cibinong.

Taxonomic Treatment

Homalomena sungaikeliensis A.S.D.Irsyam & M.R.Hariri, **sp.nov.**

Fig. 1

Homalomena sungaikeliensis is similar to *H. hottae* S.Y.Wong, S.K.Chai & P.C.Boyce but differs in having a sheath $\frac{1}{2}$ to $\frac{1}{4}$ the length of the petiole (*vs.* $\frac{1}{3}$), broadly ovate leaf shape (*vs.* elliptic oblong to ovate), margins entire (*vs.* smooth or slightly sinuous), deep dark green and velvety adaxial leaf surface (*vs.* deep green to brownish maroon), purplish red abaxial leaf surface (*vs.* pale green to pale maroon), primary lateral veins 5–7 (*vs.* 4–6), exterior spathe red to dark red (*vs.* medium green or slightly flushed-pale red), interior spathe reddish white (*vs.* medium green), pistils in 3 spirals (*vs.* 2), lobed ovary (*vs.* not lobed), ovary creamy white (*vs.* green), staminode globose (*vs.* oblong), staminode creamy white (*vs.* lime-green), staminate flowers consist of 3–4 stamens (*vs.* 2).

Type: INDONESIA, **West Java**, Bogor, cultivated in a private nursery from material collected in the wild ex **West Kalimantan**, Landak Regency, Ngabang subdistrict, Sungai Keli (orig. coll. 22.10.2024, A.A. Setiawan *s.n.*), voucher 14.12.2024, M.R. Hariri & A.S.D. Irsyam *s.n.* (holo FIPIA!; iso BO!).

Rhizomatous herbs, up to 21.4 cm tall. Stems, 2.2–3.6 cm long; internodes obscured by

overlapping leaf bases. Leaves 2–6 per crown; sheath fully adnate to petiole, 2.1–4.9 cm long, margins clasping, apex acute, dark red; petiole 5.2–13.5 cm long, shallowly canaliculate, dark red; blade ovate to broadly ovate, 6.2–12.7 × 3.7–8.1 cm, base cuneate or subcordate, margins entire, apex apiculate, adaxial leaf surface deep dark green, brownish green in juvenile leaves, velvety, abaxial leaf surface purplish red, pinkish red in juvenile leaves, midrib dark red, raised abaxially; primary lateral veins 5–7 on each side. Inflorescences erect-spreading, 1–4 together; peduncle 1–2.4 cm long, cherry red. Spathe ellipsoid with asymmetric apex, without constriction, 16–22 × 4–5 mm, exterior red to dark red, interior reddish white, apex acute with a mucro to 1.5 mm long. Spadix sessile, *c.* 14.5 mm long, fertile to tip. Pistillate flower zone cylindrical, *c.* 3 mm long, $\frac{1}{3}$ the staminate zone; pistils few, in 3 spirals, bottle-shaped, orthotropic, lobed, *c.* 0.9 mm long, 0.6–0.8 mm in diam., creamy white, stylar region creamy white; stigma sessile, disc-like, 0.3–0.4 mm in diam., hairy, white; staminode 1 per pistillate flower, globose, sessile, *c.* 0.3 mm in height, *c.* 0.3 mm in diam., creamy white. Staminate flower zone conic, *c.* 11.5 mm long, apex acute; staminate flowers densely arranged, 0.3–1 mm long, consisting of 3–4 stamens; stamens 0.2–0.6 mm long, white to yellowish white; thecae globose to ellipsoid, 0.25–0.50 mm long, opening by a wide terminal pore, white. Fruiting spathe, fruits, and seeds not observed.

Flowering & fruiting: Flowering from October to January. Fruiting not observed.

Distribution: Only known from Sungai Keli, West Kalimantan.

Etymology: The specific epithet “*sungaikeliensis*” is named after the type locality.

Proposed conservation status: The species is currently classified as undetermined according to the criteria established by the IUCN Red List. Due to the limited available data, it is appropriately categorized as Data Deficient (DD).

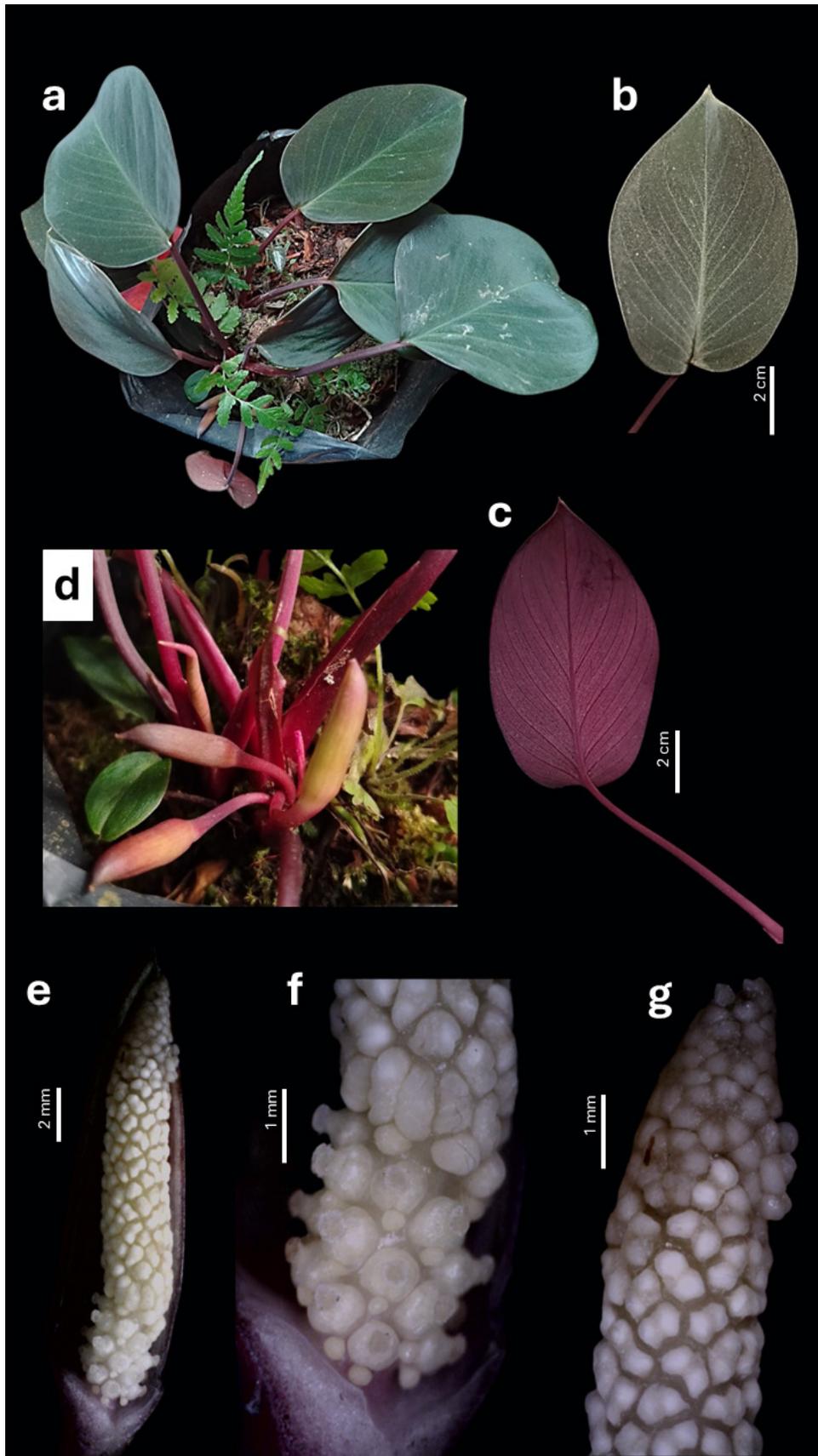


Fig. 1. *Homalomena sungaikeliensis* sp. nov.: **a.** Habit; **b.** Leaf–Adaxial surface; **c.** Leaf–Abaxial surface; **d.** Inflorescence with intact spathe; **e.** Spadix with half of spathe removed; **f.** Pistillate flowers; **g.** Staminate flowers.

Taxonomic notes: The newly described species, *H. sungaikeliensis*, is assigned to the scintillating-velutinous Bornean *Homalomena* group, a morphologically distinctive assemblage within the genus characterized by their softly velvety leaf surfaces, often exhibiting a striking iridescent or scintillating adaxial sheen under oblique light. Members of this group are typically lithophytic or rheophytic, occupying humid and shaded microhabitats. The group previously comprised *H. hottae*, *H. terajaensis* S.Y. Wong & P.C.Boyce, and *H. kionsomensis* Kartini, P.C.Boyce & S.Y.Wong. An updated key to the species based on Wong *et al.* (2020a) is provided below.

An updated key to scintillating-velutinous *Homalomena* species in Borneo (modified from Wong *et al.*, 2020a)

1. Spadix stoutly ellipsoid, briefly stipitate; stipe with conspicuous red or green glands; pistillate flowers in single row; pistil acroscopic; stigma tiny, pointed*H. terajaensis*
1. Spadix cylindrical to weakly ellipsoid; sessile or briefly stipitate, if stipitate then stipe lacking glands; pistillate flowers in two to four spirals; pistil orthotrophic; stigma large, disc-like .. 2
2. Spadix stipitate *H. kionsomensis*
2. Spadix sessile 3
3. Pistillate flowers in two spirals; staminode oblong, lime-green; staminate flowers consist of two stamens *H. hottae*
3. Pistillate flowers in three spirals; staminode globose, creamy white; staminate flowers consist of three to four stamens..... *H. sungaikeliensis*

Acknowledgements

We sincerely extend our deepest appreciation to the Directorate for Scientific Collection Management – BRIN for granting permission to access and observe the specimens, which were integral to the success of this research. This study was supported by funding from the National Research and Innovation Agency’s Call for Joint

Research Collaboration (CfJRC) under the Rumah Program Organisasi Riset Hayati dan Lingkungan for the year 2025, as specified in contract number B-3605/III.5/PR.03.06/12/2024. Our heartfelt gratitude also goes to the editors and reviewers for their unwavering dedication, thorough evaluation, and insightful suggestions, which have greatly enhanced the quality and rigour of this manuscript. Furthermore, we are profoundly grateful to Dr. Dian Latifah for her generosity in granting permission to utilize the Dinolite, which was instrumental to the success of this research.

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