



## *Homalomena bungamerah* (Araceae), a new species from Northern Sumatra, Indonesia

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**ABSTRACT:** A new lithophytic species of *Homalomena* from Sumatra, *Homalomena bungamerah*, is described. The new species is unique in having a plicate verrucose upper leaf surface combined with the absence of interpistillar staminodes. Owing to the ongoing threats and small population, *H. bungamerah* is provisionally assessed as Critically Endangered (CR B2 ab(iii,v)). Morphological descriptions, photographs, and notes are given.

**KEY WORDS:** aroids, *Homalomena asperifolia*, *Homalomena mobula*, *Homalomena scutata*, herbs, lithophyte, west Malesia.

### INTRODUCTION

*Homalomena* Schott (Araceae) is among the fastest-expanding tropical Asian genera in terms of the number of new species being proposed. The genus currently has about 160 accepted species (Boyce *et al.*, 2025) distributed in tropical Asia from NE India and SW China, through Indochina and Thailand and down through the Malay Archipelago, Malesia, and east to Solomon Islands (Mayo *et al.*, 1997; Wong *et al.*, 2016; Hariri and Irsyam, 2025a,b; Irsyam *et al.*, 2025a-e). In 2016, the Neotropical members of this genus were transferred to resurrected *Adelonema* Schott (1860) and consequently, *Homalomena* is now restricted to the Old World tropics (Wong *et al.*, 2016). The small genus *Furtadoa* M.Hotta, known from Sumatra and Peninsular Malaysia, was also incorporated into *Homalomena* (Irsyam *et al.*, 2025c).

Sumatra, the westernmost large island of the Sunda Shelf, is one of the centres of diversity for *Homalomena*, with 39 species known (ca. 26% of total global species), with 32 (82% per cent) of them endemic. Fourteen of the species were described since 2000 (Mustaqim *et al.*, 2021-onwards). Given that Sumatra is among the least-collected areas in terms of scientific plant collection (Ondo *et al.*, 2024), it is fully expected that numerous further species of *Homalomena* await discovery on Sumatra.

A lithophytic *Homalomena* was found in the northern part of Sumatra, which shows a unique combination of features among Sumatran species, characterized by the combination of the verrucose upper leaf surface and the absence of interpistillar staminodes. A literature and specimen examination showed that the plants belong to a species new to science.

### MATERIALS AND METHODS

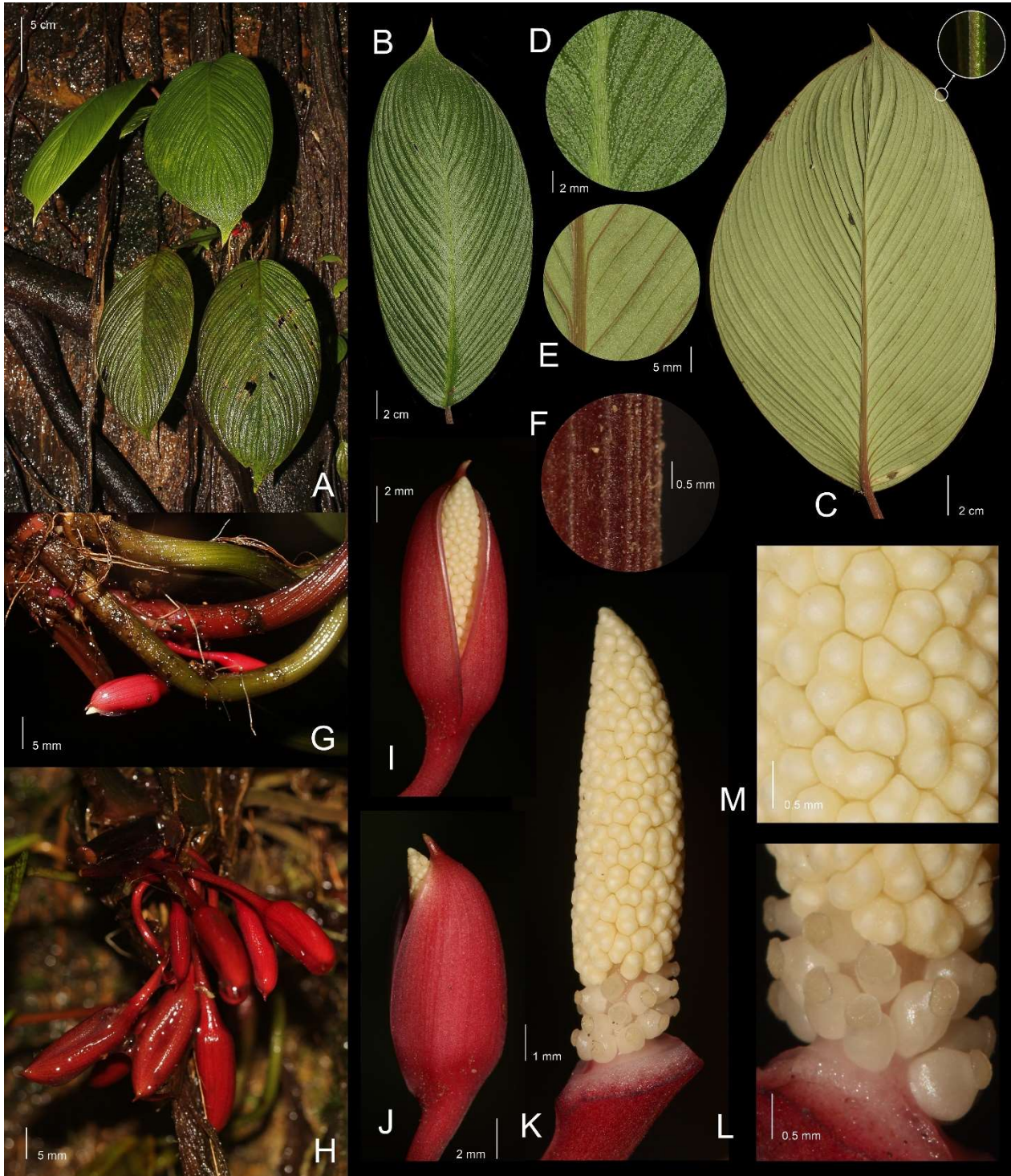
The descriptions were prepared based on measurements from living material *in situ*. Herbarium specimens were prepared following the standardised guidelines from Croat (1985) and Davies *et al.* (2023). Material identification was performed through comparison using relevant literature (Alderwerelt van Rosenburgh, 1922; Furtado, 1939; Hotta, 1985, 1993; Hay, 1999; Hay and Herscovitch, 2002; Boyce and Wong, 2012, 2013, 2015, 2016a,b; Wong *et al.*, 2016, 2020; Hariri and Irsyam, 2025a,b; Irsyam *et al.* 2025a-e), comparison to type and other herbarium materials directly accessed in BO and FIPIA or digital herbaria (ANDA, K, L) accessed through Global Biodiversity Information Facility (GBIF, <https://www.gbif.org>) as well as JSTOR Global Plants (<https://plants.jstor.org>). Conservation status assessment was conducted following the standard guideline from the IUCN Standards and Petitions Committee (2024) against the criteria in the IUCN (2012).

### TAXONOMIC TREATMENT

*Homalomena bungamerah* Mustaqim, A.S.D.Irsyam & M.R.Hariri, *sp. nov.* **Fig. 1**

**Type:** INDONESIA. Sumatra Utara Province, Langkat Regency, location withheld for conservation purposes, 13 Jan 2026, WA Mustaqim *et al.* 4107 (holo: FIPIA, iso: BO, UIDEP).

**Diagnosis:** This species is unique in having large and plicate leaves, a spathe that nodding at anthesis, and pistillate flowers without an interpistillar staminode. The most morphologically similar species is *H. mobula* P.C.Boyce



**Fig. 1.** Morphology of *Homalomena bungamerah* Mustaqim, A.S.D.Irsyam & M.R.Hariri, sp. nov. **A.** Living plant. **B.** Leaf, adaxial. **C.** Leaf, abaxial. **D.** Leaf, adaxial texture. **E.** Leaf, close up of abaxial. **F.** Close-up of petiole ribs. **G.** Synflorescence showing spathe which is nodding at anthesis. **H.** Synflorescence. **I.** Inflorescence, front view. **J.** Inflorescence, lateral view. **K.** Spadix with spathe removed. **L.** Female spadix zone. **M.** Male spadix zone. Photographs by Wendy A. Mustaqim.

& S.Y.Wong, but differs by the larger leaves (16.5–25.8 × 7.7–14.6 cm vs. 13–23 × 4–8 cm) with the lamina plicate (vs. non-plicate), the straight (vs. irregularly dentate) hyaline lamina margin, the shorter spathe (c. 13.5

mm vs. c. 20 mm), and the absence of interpistillar staminodes. *Homalomena bungamerah* is also similar to *H. asperifolia* Alderw. but may be distinguished by the smaller index of sheath to petiole length (1/10 vs. 1/3–



1/2), the larger leaf lamina (16.5–25.8 × 7.7–14.6 cm vs. 7.5–12 × 2.5–6 cm), and the absence of interpetillar staminodes.

**Description:** Lithophytic *herbs*, exposed tissues smelling strongly of turpentine. **Roots** wiry, 1–2 mm in diam., hairs patent. **Leaves** up to 5 per plant; petiole (12.0–)19.0–35.0 cm long, sheath (1.1–)1.8–3.5 cm, around 1/10 of the petiole length, petiole circular in cross section, longitudinally ribbed, ribs papillose along their tops; lamina elliptic or rarely ovate or obovate, 16.5–25.8 × 7.7–14.6 cm, apiculate at apex, apicule up to 2 cm long, tip with 1.5–2.0 mm long mucro, margin narrowly hyaline, revolute, entire, base cuneate to almost rounded; upper surface medium green, bluntly plicate, verruculose, lower surface pale green, smooth; midrib sunken above, raised beneath, reddish green; primary lateral veins in 8–12 pairs, sunken above, the larger ones usually also ribbed beneath, reddish; interprimary veins 1–2 between each pair of primaries, often highly similar to primaries but not reddish, sunken above, raised beneath. **Inflorescences** 4 to 8 in a synflorescence, opening sequentially, peduncle held horizontally at anthesis and spathe open nodding, red, 2.6–4.2 cm long, longitudinally ribbed, ribs papillose, peduncle later declinate after anthesis. **Spathe** ovoid, c. 13.5 mm long, c. 4.5 mm wide across the base, with c. 1.40 mm long terminal mucro, limb not constricted, dorsally ribbed and sparsely asperous; spathe inflating at anthesis, later closing and enclosing spadix. **Spadix** unequally inserted at the peduncle, shortly stipitate, slender conic, shortly exceeding the spathe at anthesis, c. 13.5 mm long, c. 3 mm in diam., fertile to apex, stipe light pink, with reddish coloration at the anterior side, c. 0.2 mm long; **pistillate flower** zone c. 2.5 mm long, pistil rather lax, in 2–3 spirals, white, broadly ovoid, 0.50–0.70 × 0.55–0.90 mm, stigma shortly stipitate, stipe 0.07–0.15 mm long, stigma head button shape, c. 0.40–0.45 mm across; interpetillar staminode absent; suprapistillar interstice absent; **staminate flower** zone c. 11 mm long, apex acute; staminate flowers densely arranged, each consisting of 3–4 stamens; stamens more or less dumbbell-shaped, often unequal or asymmetric, 0.70–1.20 mm across at the longest side, each consisting of 2 thecae, thecae cream with apex white. **Fruiting spathe** declinate to subhorizontal, red. **Fruits** and **seeds** not observed.

**Distribution:** Endemic to northern Sumatra, only known from the type locality.

**Habitat and ecology:** The species grows on vertical, permanently wet granitic rocks, in shaded sites of mixed dipterocarp forest, at elevations of 150 to 200 m asl.

**Phenology:** Flowering and fruiting observed in January.

**Etymology:** The specific epithet “*bunga merah*” is derived from the Malay language, reflecting the inflorescence (“*bunga*”) with red (“*merah*”) peduncle and spathe. Malay is the indigenous language in Langkat

Regency, where the type material was collected.

**Proposed IUCN conservation status:** The species is known from a single population and is already subject to commercial harvesting. Fewer than 100 mature individuals have been recorded, indicating an extremely high risk of extinction. As it is restricted to one location and faces ongoing threats, including wild plant collection for market sale and degradation of habitat quality, the species is best assigned as Critically Endangered (CR B2 ab(iii,v)).

**Notes:** *Homalomena bungamerah* is notable for its absence of interpetillar staminodes, a feature that already distinguishes it from other members of the genus in Sumatra. Outside Sumatra, the absence of interpetillar staminodes has also been recorded from other Sundaland species like *Homalomena scutata* S.Y.Wong & P.C.Boyce from Borneo, but the latter has a constricted and larger spathe (c. 6 × 2 cm vs. 1.35 × 0.4 cm in *H. bungamerah*) (Wong and Boyce, 2014). Furthermore, the absence of interpetillar also can be found in several New Guinean species (Hay, 1991; Herscovitch and Hay, 2003; Irsyam *et al.*, 2025d).

Two other Sumatran species have a rough upper leaf surface, i.e., *Homalomena asperifolia* and *Homalomena mobula*. *Homalomena asperifolia* was initially collected from Haboko, an area located in the modern Asahan Regency, North Sumatra Province (Alderwerelt van Rosenburgh, 1922), which was recollected around a decade ago (Boyce and Wong, 2016). Meanwhile, *H. mobula* is so far endemic to the western part of Sumatra. It grows on vertical moss-covered granite (Boyce and Wong, 2016).

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