



## *Begonia matahom* (Section *Petermannia*, Begoniaceae), a new species from Tago, Surigao del Sur, Philippines

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**ABSTRACT:** In a recent field survey at Mt. Tingtingan, Badong, Tago, Surigao del Sur, an interesting *Begonia* with a robust habit was found. With the cane-like, erect and ascending or spreading suffrutescent stem, 2-tepaled staminate flowers and 5-tepaled pistillate flowers, this species belongs to section *Petermannia*. It's worth noting that the staminate and pistillate flowers of this species exhibit different tepal colors. This new *Begonia* resembles its Surigao ally *B. benitotanii* in having erect and glabrous stems, leaf adaxial surface with sparsely white spots between veins, obliquely cordate base, acuminate apex and serrated margin, but the new species named *Begonia matahom* is distinct in having larger stems that are woody and thick, ovate to triangular leaf shape, larger lamina, longer petioles, longer bracts, glabrous staminate tepals, yellowish-green pistillate flowers, stigmas in a curled spirally extended band with prominent cilia to conspicuously feathery, and smaller green ovary with glabrous and thick, unequal wings.

**KEY WORDS:** *Argostemma*, *Begonia benitotanii*, limestone forest, Mindanao, Mt. Tingtingan, taxonomy.

### INTRODUCTION

The Pantropical genus *Begonia* Linnaeus (1753) is one of the largest angiosperm genera with *ca.* 2120 species classified into 70 sections (Hughes *et al.*, 2015–; Moonlight *et al.*, 2018). The Philippines recorded *ca.* 160 species (Hughes *et al.*, 2015–) recognized and categorized in 3 sections, namely: *Petermannia* Klotzsch (1854), *Baryandra* A. de Candolle (1859), and *Platycentrum* (Amoroso *et al.*, 2023; Hughes *et al.*, 2015–; Mazo *et al.*, 2023). Currently the island of Mindanao recorded 42 known species of *Begonia* (Hughes *et al.*, 2015–) including the latest discovery *B. fritchiana* Amoroso *et al.* (2023), *B. seabodensis* Mazo *et al.* (2023), and *B. noraunorae* Blasco *et al.* (2023). Based on PNH herbarium specimens and relevant literature, there are *ca.* 12 recorded *Begonia* species in Surigao provinces (Blasco *et al.*, 2023; Hughes *et al.*, 2015–).

Mt. Tingtingan is located in the municipality of Tago, Surigao del Sur and bounded by the adjacent municipalities of San Miguel, Tandag, Bayabas, Cagwait and Marihatag (Ilagan *et al.*, 2022). To date, only the base of the mountain is explored and the inland forest has not been previously explored due to peace and order situation. In a recent fieldwork at Mt. Tingtingan, an unknown *Begonia* species was discovered in a limestone forest growing with *Argostemma* and ferns. They grow abundantly on the base of the mountain up to lower

elevation *ca.* 10 m. Upon thorough examination of the species, we noticed distinct morphology of the species: the yellowish-green color of the pistillate flowers, and the pale pink for staminate flowers which is unusual for a *Begonia* to have two different colors of inflorescence. We then confirmed its placement to section *Petermannia* due to the cane-like structure of the stems, axillary inflorescences where staminate flowers are distal and pistillate flowers basal, 2-tepaled staminate flowers and 5-tepaled pistillate flowers (Rubite, 2012) and we hereby describe it as *Begonia matahom* Blasco, Alejandro, Tandang & Rubite (Figs. 1 & 2), a new species under section *Petermannia*. The descriptions and color plates are hereby provided.

### MATERIALS AND METHODS

Fieldwork was done in Mt. Tingtingan, Sitio Tingtingan, Badong, Tago, Surigao del Sur, Philippines, where the *Begonia* species was found. Morphological characterization of vegetative and reproductive parts was conducted following Rubite *et al.* (2021) and Blasco *et al.* (2023). Detailed examination of reproductive parts was based on preserved collections. Collected samples were then deposited to the PNH, and HNUL as holotype and isotype, respectively. Further morphological comparisons were made based on literature, herbarium specimens and living collection of plants.

**Table 1.** Morphological comparison between *Begonia matahom* and *Begonia benitotanii*.

Characters	<i>Begonia matahom</i>	<i>Begonia benitotanii</i>
<b>Stem</b>	ascending and spreading, woody and thick	semi-succulent
Length	1.2 m.	2–4 m.
Diameter	14–15 mm. (larger)	7–12 mm.
Internodes	7–9 cm.	7–12 cm.
<b>Stipule</b>	persistent with caudate apex 22–23 × 6–7 mm	deciduous with mucronate apex 25–30 × 4–10 mm.
<b>Petiole</b>	(longer) 15–16 cm., dia. 5–6 mm.	4–7 cm., dia. 2.5 mm
<b>Leaf</b>	ovate to triangular adaxial surface dark green, sometimes sparsely spaced, minimal circular white spots abaxial surface, red to maroon size (larger) 26–27 × 11–12 cm. margin serrate to repand without stripe	obovately oblong uniformly emerald green, sometimes sparsely fused, evenly to well scattered circular white spots pale green to pinkish 8–21 × 6–12 cm. irregularly serrate and undulate with white stripes
<b>Bracts</b>	(longer) persistent, narrowly triangular 13–15 × 4–6 mm.	deciduous, lanceolate 9–11 × 2–3 mm.
<b>Staminate flower</b>	tepals (larger), smooth, pale pink 6–7 × 4–6 mm. stamens exerted	wrinkled, pink 4–5 × 4–5 mm. fused at the base
<b>Pistillate Flower</b>	twins do not mature simultaneously. tepals (smaller) curved, thick, yellowish-green, broadly ovate, 11–12 × 5–6 mm. stigmas curled, spirally extended band, prominently ciliate or conspicuously feathery	twins mature simultaneously. Flat, succulent, pink, obovate 11–15 × 4–11 mm. shorter and slender
<b>Ovary</b>	(smaller) green 10–11 × 5–6 mm. wings unequal, light green, glabrous and thick	light green to pink 10–14 × 9–11 mm. equal, pink, wrinkled, transparent and succulent
<b>Capsule</b>	(smaller) 20–21 × 29–30 mm.	30–38 × 20–36 mm.
Wings	3 unequal	3 equal
Base	cordate	cuneate

## TAXONOMIC TREATMENT

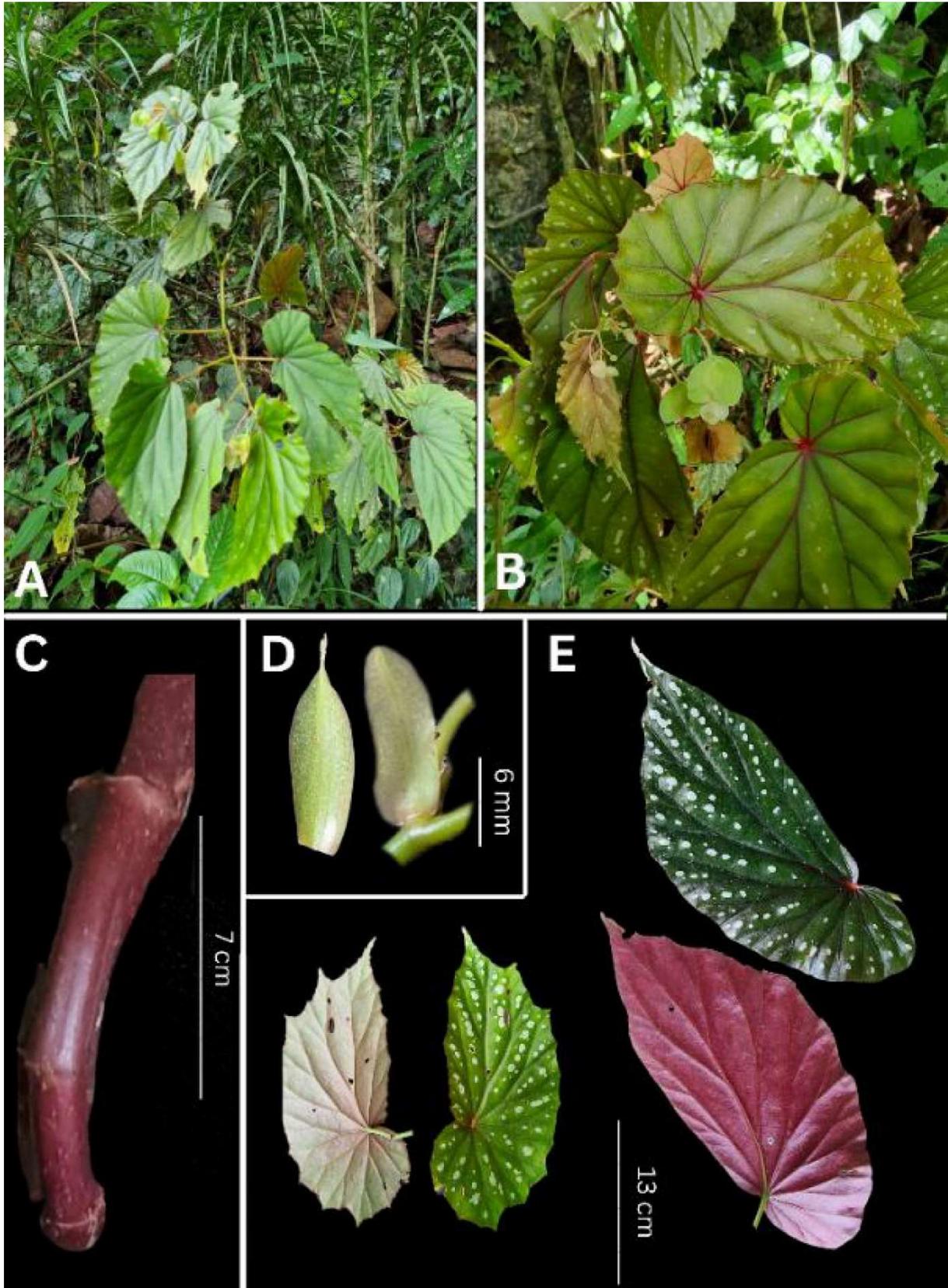
*Begonia matahom* F.A.Blasco, Alejandro, Tandang & Rubite, *sp. nov.* **Figs. 1 & 2**  
Section *Petermannia*.

**Type:** PHILIPPINES, Eastern Mindanao, Surigao del Sur, Tago, Badong, Mt. Tingtingan, Sitio Tingtingan, lower elev. 10 m, 22 May 2022 *Freddie A. Blasco 22-003* (holotype PNH, Isotype HNUL).

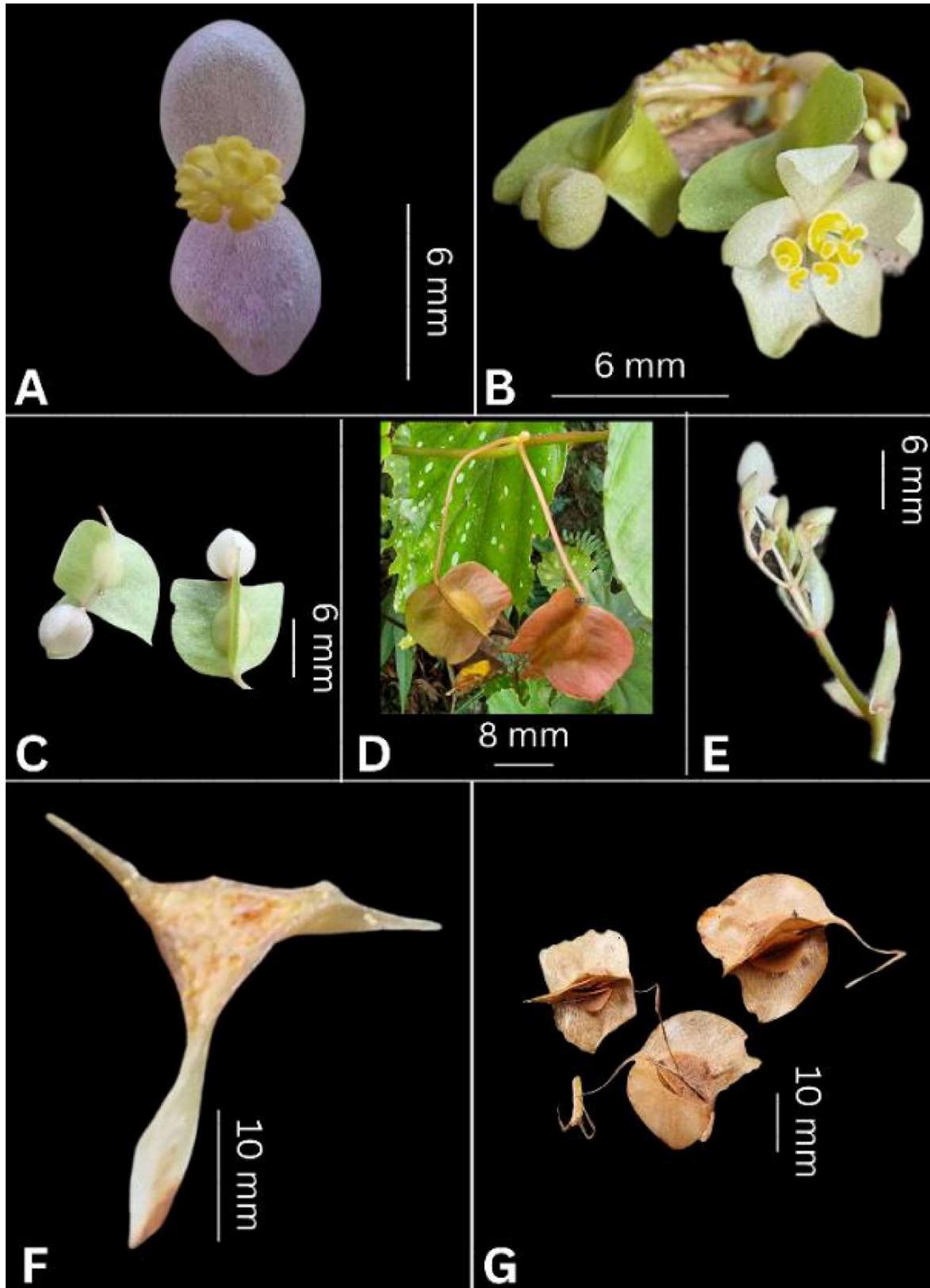
**Diagnosis:** *Begonia matahom* resembles its Surigao ally *B. benitotanii* Rubite, Tandang & C.W. Lin in having erect and glabrous stems, leaf adaxial surface having sparse white spots between veins, obliquely cordate base, acuminate apex, with 2-tepaled staminate flowers and 5-tepaled pistillate flowers, but differs in having woody and thick stems (vs. semi-succulent), larger leaves 26–27 × 11–12 cm (vs. 8–21 × 6–12 cm), smooth staminate tepals (vs. wrinkled), curved and thick pistillate tepals (vs. flat and succulent), unequal capsule wings (vs. equal). Table 1 offers a thorough comparison of *B. matahom* and *B. benitotanii*.

**Description:** Monoecious, perennial herb, glabrous. **Stem** woody and thick, erect and ascending or spreading, stands *ca.* 1.2 m or longer, 14–15 mm in diameter, green to brown or red, internodes 7–9 cm. **Stipules** persistent, obovately oblong, green when young, greenish to reddish when mature, slightly keeled, 22–23 × 6–7 mm, margin entire, apex caudate. **Petioles** green, terete, 15–16 cm

long, 5–6 mm in diameter, glabrous. **Leaves**, alternate, glabrous, ovate to triangular, 26–27 × 11–12 cm, asymmetric, base obliquely cordate, apex acuminate, margin serrate to repand with minutely bristles, without stripes, adaxially light green when young, dark green when mature, sometimes with sparsely spaced minimal circular white spots between veins, abaxially pale red to green when young, red to maroon when mature, venation palmate, primary veins 7–8. **Inflorescence** separate between staminate and pistillate, glabrous; pistillate inflorescence with short peduncle 10–12 mm long, flowers basal to staminate, born in pairs (do not mature simultaneously); staminate inflorescence with longer peduncle 6–7 cm long, flowers apical on short cymes branching 4–6 times. **Bracts** persistent, light green, basal pairs, narrowly triangular 13–15 mm × 4–6 mm, margin entire, apex acuminate. **Staminate flowers** pedicel 6–7 mm, smooth; tepals 2, pale pink, 6–7 × 4–6 mm, orbicular to elliptic, margin entire, apex rounded to roundly obtuse, androecium actinomorphic 4–5 × 2–3 mm in diam, stamens 15–20, yellow, filaments 0.5–1 mm long, exerted, exceedingly scattered, anthers widely obovate, *ca* 1 mm long, apex truncate to rounded. **Pistillate flowers**, pedicel 2–3 cm long, tepals 5, curved, thick, pale pink to pale yellow when young and yellowish-green with a shade of pale pink down the base of the tepals when mature, broadly ovate, 11–12 × 5–6 mm, margin entire, apex roundly acute, ovary green, obovoid to elliptic, 20–



**Fig. 1.** *Begonia matahom* F.A.Blasco, Alejandro, Tandang & Rubite. (Vegetative Parts) **A.** and **B.** Habit and Habitat: Matured (L), Young (R), **C.** Stem, **D.** Stipules: Young (L), Matured (R), **E.** Leaves (Young and Mature). All from *Freddie A. Blasco 22-003*.



**Fig. 2.** *Begonia matahom* F.A.Blasco, Alejandro, Tandang & Rubite. (Reproductive Parts). **A.** Staminate flower, **B.** Pistillate flowers **C.** Young pistillate flowers, **D.** Drying capsules in pairs, **E.** Staminate inflorescence with bracts, **F.** Cross section of the ovary, **G.** Matured capsules. All from *Freddie. A. Blasco 22-003*.



21 × 25–26 mm (wings included), 10–11 × 5–6 mm locular part excluding wings, 3-locular, placentation axile, 3-winged surrounding and extending beyond the ovary, wings with a light green color, glabrous surface and thick, unequal, abaxial wing 12–13 × 7–8 mm, angular to rounded, lateral wings 10–11 × 5–6 mm, narrowly triangular, styles 3, yellow, *ca.* 3 mm. long, apically 2-cleft, stigmas in a curled, spirally extended band with prominent cilia or conspicuously feathery. **Capsule** nodding, trigonous, globose to obovoid, 20–21 × 29–30 mm (wings included) pedicel 4–5 cm long, wings 3 unequal, abaxial wing 20–21 × 15–16 mm, angular to rounded, lateral wings 17–18 × 12–13 mm, shallowly angular, apex truncate to angular, base cordate to rounded.

**Etymology:** The specific epithet *matahom* is an archaic *Bisayan* word in the southern Philippines, which means beautiful, lovely, unique, and rare, referring to the distinct colors of the inflorescence.

**Phenology:** Observed flowering and fruiting in April to May where the dry season is at its peak.

**Distribution and habitat:** Endemic to the province of Surigao del Sur, Caraga Region, Eastern Mindanao, Philippines. It grows on limestone forest in Mt. Tingtingan, Sitio Tingtingan, Badong, Tago, Surigao del Sur, on lower elev. *ca.* 10 m.

**Proposed conservation status:** *Begonia matahom* is currently known only from the type locality, with one population and several individuals. The area is not protected under the country's National Integrated Protected Areas System by the Department of Environment and Natural Resources. The conservation status of the species is hard to assess, Mt. Tingtingan has not been fully botanized due to peace and order situation. Therefore following IUCN red list and criteria (IUCN, 2022), *B. matahom* is hereby proposed as Data Deficient (DD).

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