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## *Begonia amparoi* (Begoniaceae, section *Baryandra*) a new species from Linungaw Twin Islands, Surigao del Sur, Mindanao, Philippines

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### Abstract

We describe *Begonia amparoi*, a new species of *Begonia* section *Baryandra* from Linungaw Twin Islands, Mindanao, Philippines. It grows on limestone and has a robust habit, with a thick rhizome and large leaves. *Begonia amparoi* is currently known only from the type locality in a coastal island forest of Tandag City, Province of Surigao del Sur. Based on IUCN red list criteria, *B. amparoi* is considered Vulnerable (VU).

**Key words:** *Begonia calcicola*, endemic, limestone, taxonomy, Vulnerable

### Introduction

The genus *Begonia* Linnaeus (1753: 1056) is one of the largest angiosperm genera, with currently 2084 species (Hughes *et al.*, 2015–). It is found in both neotropical and paleotropical regions with ca. 151 species recorded from the Philippines (Mazo and Rubite, 2022, Hughes *et al.*, 2015–). The *Begonia* of the Philippines are classified into two sections: *Baryandra* A. de Candolle (1859: 122) and *Petermannia* (Klotzsch 1854: 124) de Candolle (1859: 128). The former was recently delimited by Rubite (2013). The total number of species recognized within *Begonia* section *Baryandra* increased to 80 distinct species in total, with 77 species in the Philippines (Hughes *et al.* 2015–). Based on PNH herbarium specimens and literature, there are six *Begonia* sect. *Petermannia* species collected in Surigao provinces, namely *B. colorata* Warburg (1904: 54), *B. contracta* Warburg (1904: 54) *B. longistipula* Merrill (1911: 379) *B. mindanaensis* Warburg (1904: 54) *B. benitotanii* Rubite *et al.* (2021a: 259) and the latest discovery *B. lanuzaensis* Blasco *et al.* (2021: 205); while for section *Baryandra*, *B. longiscapa* Warburg (1904: 52) and the recently added *B. makuruyot* Rule *et al.* (2020: 227) are recorded.

In a quest to document medicinal plants in Surigao del Sur an interesting *Begonia* was discovered in Linungaw Twin Islands of Tandag City (Figs. 1 & 2). According to the locals living in the area and some indigenous people in the nearby barangays, the petiole of this begonia is edible mixed with little salt to treat coughs and colds. The new species is categorized under *Begonia* sect. *Baryandra* A.DC. following the recircumscription of Rubite *et al.* (2013). The description as well as illustration of *B. amparoi* is hereby provided.

## Materials and methods

Fieldwork was done in Linungaw Twin Islands, where the *Begonia* species was found. Initial diagnosis was done in the field. Morphological characterization of the vegetative and reproductive parts was conducted following Rubite *et al* (2021b). Samples were collected for herbarium purposes and deposited to the PNH and STCH. Further morphological studies and comparisons were made based on literature, herbarium specimens, and living plants.

## Taxonomy

*Begonia amparoi* Blasco, Alejandro, Tandang & Rubite, *sp. nov.* § *Baryandra* (Figs. 1 & 2)

**Type:**—PHILIPPINES: Mindanao, Surigao del Sur, Tandag City, Linungaw Twin Islands (main island), elevation ca. 170 m, on limestone rocks in semi-shaded broadleaf forest at seashore, 30 May 2013, *Freddie A. Blasco* 13–945 (holotype PNH, isotype STCH).

**Diagnosis:**—*Begonia amparoi* resembles *B. calcicola* Merr. in habit and having thick rhizomatous brown stems but differs in petioles with 3 mm red hairs from the top near the junction of lamina becoming glabrous down the base (vs. with numerous, scattered, brown, fimbriate 3mm palea); glabrous and longer leaves 33–35 cm (vs. hairy 10–20 cm); long peduncles, 68 cm (vs. 45 cm) and larger capsules 15–17 × 17–19 mm, broadly ovate, apex roundly acute, base obtuse (vs. 8 × 12 mm, obovoid, apex truncate, base rounded).

Lithophytic, rhizomatous, perennial, monoecious herb. **Rhizome** brown, rhizomatous, ca. 10 cm or longer, 2.5–3 cm in diameter, glabrous, internodes 1 cm long. Stipules persistent, asymmetric, red, triangular, 22–25 × 12–15 mm, adaxially glabrous, abaxially puberulous, keel attached near the right side with fleshy red hairs from the base to the apex, margin entire, apex aristate, arista 5–8 mm long. **Leaves** on curved petioles; petiole red, terete 40–43 cm long, 12–15 mm in diameter, with 3 mm red hairs from the top near the junction of lamina becoming glabrous down the base; lamina thick and fleshy, broadly ovate, glabrous, 33–35 × 26–28 cm; base cordate and overlapping, margin repand, shallowly denticulate almost entire, reddish brown with tiny bristles, apex mucronate; adaxially dark green, abaxially pale green; venation palmate, primary veins ca. 10. **Inflorescence** axillary, arising directly from the rhizome, erect, ca. 72 cm long; dichasial cymes branching 4–6 times; peduncle greenish when young reddish when mature, ca. 68 cm long, glabrous. **Bracts** caducous, broadly ovate, glabrous, margin entire, apex obtuse, 5–6 × 4–5 mm. **Staminate flower:** pedicel 10–12 mm long, glabrous, 4 tepals, uniformly very pale pink or white, outer tepals orbicular, 10–11 × 8–9 mm; inner tepals obovate 6–7 × 4–5 mm, stamen 30–35, filaments ca. 1 mm long, united at the base; anthers yellow, obovate, apex rounded, ca. 1 mm long. **Pistillate flower** pedicel 15–17 mm long, glabrous; ovary green, glabrous, 12 × 15 mm (wings included), 3 locular, placentae bifid; wings 3 unequal surrounding the ovary, pale pink to light green; tepals not found. **Capsule** nodding, 15–17 × 17–19 mm (wings included), pedicel 20–22 mm long, drying pale brown, glabrous, broadly ovate, apex roundly acute, base obtuse, straight with 3 unequal wings, apex truncate, base rounded; abaxial wing 15–18 × 10–12 mm, angular to rounded; lateral wings 10–11 × 5–6 mm shallowly angular.

**Additional specimen examined:**—PHILIPPINES. Mindanao: Surigao del Sur, Tandag City, Linungaw Twin Islands (grotto island), 30 May 2013, *Freddie A. Blasco* 13–931 (PNH, STCH).

**Phenology:**—Observed flowering and fruiting in May (dry season) to December (wet season).

**Etymology:**—The specific epithet “*amparoi*” is derived from Dr. Amparo A. Perez to honor her 50 years of unending service to Saint Theresa College of Tandag. Educator, dean, haciendera, philanthropist, and a dear friend.

**Distribution and Ecology:**—Endemic to the province of Surigao del Sur, Mindanao, Philippines. It grows on limestone rocks in semi-shaded broadleaf forest at the seashore of Linungaw Twin Islands, where it is found on both the main island (which is the type locality) and the grotto island.

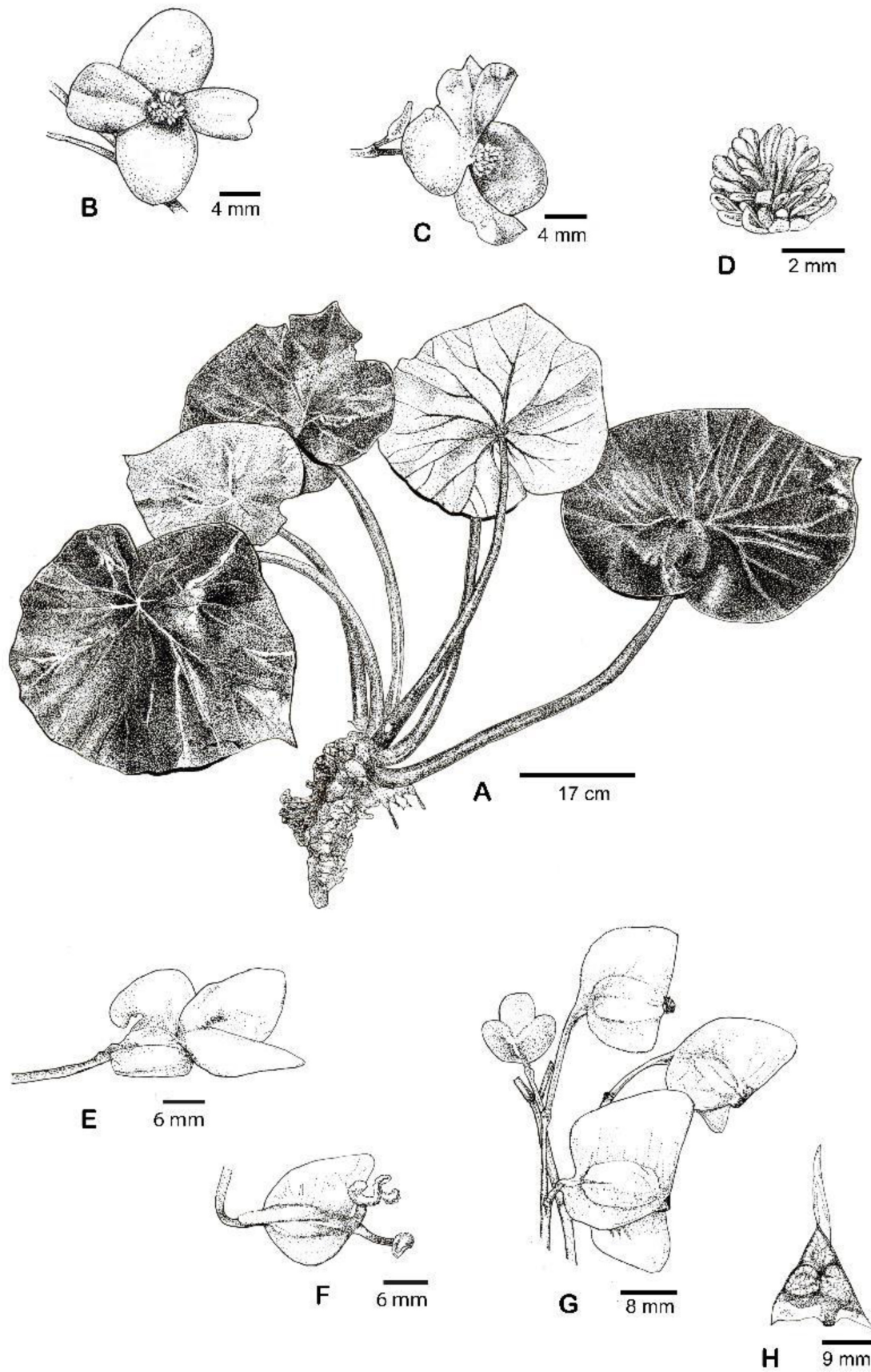
**Proposed IUCN category:**—Vulnerable (VU) under D1 & D2 (<1000 individuals and <5 locations). At the moment it is only known from two sites on Linungaw Twin Islands. The species is locally known as *iba-iba* due to its sour taste and is quite uncommon. Hence, we can consider any collection for consumption would cause a potentially harmful reduction in the number of individuals of the species (IUCN, 2019).





**FIGURE 1.** *Begonia amparoi* Blasco, Alejandro, Tandang & Rubite. A, Rhizome; B, Habit; C, Habitat; D, Leaf abaxial view; E, Leaf margin; F, Inflorescence; G, Staminate flower side view; H, Staminate flower front view; I, Young fruits (Photos of the type collection).





**FIGURE 2.** *Begonia amparoi* Blasco, Alejandro, Tandang & Rubite. A, Habit; B, Staminate flower front view; C, Staminate flower side view; D, Stamens; E, Pistillate flower bud; F, Young fruit with style and stigma; G, Young fruits; H, Cross section of the ovary. (Illustration by Danilo N. Tandang, based on the type collection).

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