A new species of Begonia section Baryandra from Zamboanga Peninsula, Southwestern Philippines

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Abstract. A new species of Begonia sect. Baryandra, B. sebodensis, from Zamboanga del Norte, southwestern Philippines is described and illustrated. Begonia sebodensis is morphologically similar to B. anisoptera in obliquely ovate to widely ovate leaves, four-tepaled staminate and pistillate flowers and three locular ovary but differs in glabrescent stipules, sericeous petioles, leaf margins distantly serrate and ciliate, many-flowered inflorescences, capsule wings subequal and flat. Following IUCN criteria, we propose B. sebodensis as Endangered (EN).

Keywords: Begonia anisoptera, endemic, lithophyte, taxonomy, Zamboanga del Norte.

INTRODUCTION

With at least 2116 species, Begonia L. (Begoniaceae) is considered the sixth-largest genus of flowering plants (Hughes et al. 2015--; Moonlight et al. 2018). In the Philippines, 163 species are recognized and distributed in 3 sections, namely; B. sect. Petermannia, B. sect. Baryandra A. de Candolle (1859: 122) and B. sect. Platycentrum (Amoroso et al. 2023; Hughes et al. 2015--; Mazo and Rubite 2022; Mazo et al. 2022; Rubite et al. 2022).

The region of Zamboanga Peninsula, southwestern Mindanao is one of the botanically unexplored areas in the Philippines. Based on herbarium records and literature, 17 species and one subspecies of Begonia were recorded in Zamboanga Peninsula (Naive et al. 2022; Mazo et al. 2022). Begonia sect. Baryandra is represented by a single species in the region, Begonia anisoptera Merr., and all the remaining taxa belong to Begonia sect. Petermannia.

During a botanical exploration in the municipality of President Manuel A. Roxas (PMAR), Zamboanga del Norte (Fig. 1), a rhizomatous Begonia with 4-tepaled staminate and pistillate flowers, and 3-locular ovary was documented. These characters indicate that it is a member of the B. sect. Baryan-
Based on a detailed examination of morphological characters of the collected material and closely related species, we concluded that it is new to science, which is hereby named Begonia sebodensis Mazo & Rubite (Fig. 2) and described as the second representative of the B. sect. Baryandra in Zamboanga Peninsula, Philippines.

MATERIALS & METHODS

Fruiting and flowering materials of the B. sebodensis were collected in June 2023. The descriptions were based on both living and dried collections vouchered under Wildlife Gratuitous Permit (GP) No. IX-2023-11 issued by the Department of Environment and Natural Resources (DENR) Region 9. Protologues, herbarium specimens, and other relevant literature were examined for morphological comparisons. B. sebodensis closely resembles B. anisoptera (Fig. 3) the only Begonia sect. Baryandra representative in the region. The conservation status was assessed following the International Union for Conservation of Nature (IUCN) criteria (IUCN Standards and Petitions Subcommittee 2022).

TAXONOMIC TREATMENT

Begonia sebodensis Mazo & Rubite, sp. nov. (Figure 2); Sect. Baryandra

Type: Philippines, Mindanao, Zamboanga del Norte, municipality of President Manuel A. Roxas, barangay Sebod, 8°22'12.40"N, 123°11'39.13"E, 350 m. a.s.l., June 4, 2023, K.R.F. Mazo 113 (holotype PNH).

Diagnosis

Similar to Begonia anisoptera in having obliquely ovate to widely ovate leaves, 4-tepaled staminate and pistillate flowers and three winged capsules. However, the new species can be easily distinguished in having stipules glabrescent (vs. densely hirsute), petioles 16.5–28.0 cm long, indumentum reddish-maroon, appressed (vs. 4–12 cm long, hairs brown and spreading), larger leaves 8–17 × 7.0–11.5 cm, distantly serrate (vs. 6–12 × 4–8 cm, entire), inflorescence cymosely branching 5–7 times (vs. 2–3 times), oblanceolate inner staminate and pistillate tepals (vs. obovate to cuneiform) with rounded apex (vs. truncate to slightly retuse), capsule recurved or pendulous (vs. splash cup), wings subequal and flat (vs. strongly unequal, abaxial wing cucullate, lateral wings curved).

Description

Herbaceous, lithophytic, rhizomatous, perennial, monoecious. Rhizome creeping up to 13 cm long, 9–15 mm thick, puberulent, reddish to maroon, prominent petiolar scars, internodes 10–23 mm long. Stipules persistent, triangular 11.5–13.5 × 6–8 mm, reddish, adaxially glabrescent, abaxially glabrous, herbaceous, strongly keeled with reddish brown hairs fused at the keel, margin slightly revolute, apex aristate (3.5 mm long). Leaves alternate; petiole terete, 16.5–28.0 cm long, 5–7 mm
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Figure 2. Begonia sebodensis Mazo & Rubite. A. Habit; B. Stipules (st) and portion of the petioles (pe); C. Leaf adaxial surface; D. Leaf abaxial surface; E. Leaf margin; F. Pistillate flower, side view showing the ovary; G. Inflorescences, inset: front view of the staminate flower; H. Cross-section of the ovary; I. Capsules and fruit. All from K.R.F. Mazo 113.
thick, maroon, sericeous; leaf blade asymmetric, succulent, oblique, ovate to widely ovate, (8–)13–17 × (7–)9.5–11.5 cm, broad side width 6.5–8.3 cm, basal lobes cordate, sinus overlapping, margin distantly serrate, slightly undulate, ciliate (hairs 0.6 mm), apex acuminate; adaxially green, glabrous, abaxially ivory, lanate, reddish hirsute trichomes on veins (hairs 0.5 mm long); venation palmate, 7–8 primary veins, abaxially raised, branching dichotomously, tertiary veins reticulate. Inflorescence axillary, erect, bisexual, protandrous, cymosely branching 5–7 times; peduncle 16–35 cm long, red, sparsely puberulent in newly develop and turning glabrous. Bracts caducous, widely ovate, boat-shaped, 6–7 × 5.3–5.6 mm, pale green, glabrous, margin entire, apex rounded. Staminate flower pedicel 7–11 mm long, pale green to red, puberulent, tepals 4; outer 2, widely ovate,
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9.5–11.0 × 8.5–9.0 mm, pinkish to white, adaxial surface sparsely puberulent to glabrous, venation distinct, apex rounded; inner 2 ob lanceolate, 8–9 × 3.5–4.0 mm, white, glabrous both surfaces; androecium actinomorphic, 3.5–4.5 mm in diameter; stamens yellow, 35–40, filaments shortly fused at the base; anthers obovate, ca. 1 mm long, apex retuse. Pistillate flower pedicel 2.5–5.5 mm long, pale green to red, puberulent, tepals 4; outer 2 suborbicular, 9.5–10.5 × 8.5–10.0 mm, pinkish to white, adaxially glabrous, abaxially sparsely puberulent to glabrous, venation distinct, apex rounded; inner 2 elliptic to oblanceolate, 8–8.5 × 3.8–4.5 mm, white, glabrous both surfaces, apex rounded; ovary trigonous-ellipsoid, 4.5–5.5 × 3.0–3.5 mm, green to red, sparsely puberulent to glabrous; wings 3, subequal, flat, 7.8–8.2 × 3.0–3.6 mm, proximally cordate, distally rounded to truncated at an angle, margin entire; ovary 3-locular, placenta bilamellate; styles 3, 4.8–5.0 mm long, fused at the base at 1.5 mm; stigma spirally twisted and papillose all around. Capsule recurved or pendulous 10.0–11.5 × 8.0–12.6 mm, wings subequal, flat 1.7–11.0 mm long, 1.5–3.5 mm wide, truncate to slightly retuse proximally, rounded to truncate distally, dehiscing along the attachment with the wings.

**Etymology**

The specific epithet derived from the locality where the new species was collected.

**Phenology**

Observed flowering and fruiting from March to June.

**Distribution and ecology**

*Begonia sebodensis* is endemic to Zamboanga Peninsula and is currently known only from the municipalities of President Manuel A. Roxas, and Katipunan, Zamboanga del Norte (Fig. 1). It grows on rocks and vertical cliffs in shady areas at elevations of 200–500 meters above sea level. In the type locality, the plant associated with *B. sebodensis* includes *Homalomena philippinensis* Engl. (Araceae), *Monophyllaea merrilliana* Kraenzl. (Gesneriaceae), and species of *Ficus* L. (Moraceae), *Elato stema* J.R.Forst. & G.Forst. (Urticaceae), and *Calamus* L. (Arecaceae).

**Proposed conservation assessment**

*Begonia sebodensis* is only known from two barangays of two different municipalities in Zamboanga del Norte: Barangay Sebod, President Manuel A. Roxas, and Barangay Miatan, Katipunan. In the two barangays, total of 10 to 15 subpopulations were recorded with less than 100 mature individuals. The type locality is near a waterfall which is being developed as a tourist destination, vegetation in the area is being cleared and planted with ornamental plants, the falls is frequently visited by local tourists. The two barangays are near farm lots and charcoal making was also observed. These barangays where the *B. sebodensis* were recorded are currently not protected under the country’s National Integrated Protected Areas System by the Department of Environment and Natural Resources. Following IUCN red list and criteria (IUCN 2022), *Begonia sebodensis* is hereby proposed as Endangered [EN, D].

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