



Citation: Blasco, F.A., Alejandro, G.J.D., Tandang, D.N., & Rubite, R.R. (2024). *Begonia abhak* (section *Petermannia*, Begoniaceae) a new species from Lanuza, Surigao del Sur, Philippines. *Webbia. Journal of Plant Taxonomy and Geography* 79(1): 47-50. doi: 10.36253/jopt-15356

Received: November 18, 2023

Accepted: December 12, 2023

Published: March 19, 2024

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Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Editor: Mark Hughes

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Begonia abhak (section *Petermannia*, Begoniaceae) a new species from Lanuza, Surigao del Sur, Philippines

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Abstract. A new *Begonia* species, *Begonia abhak*, from section *Petermannia* is described and illustrated. Growing on shady, moist, rocky slopes alongside a small creek of Bujon, Lanuza, Surigao del Sur. The new species resembles *Begonia panayensis* in having glabrous stems, membranous, shiny leaves, oblong to oblanceolate lamina, acuminate apex and green ovary with pink wings but is distinct in having short stems, broadly ovate stipules, acute leaf base, serrated margins, and the slashed or jagged to almost entire margins of the capsule wings. Based on IUCN criteria, *B. abhak* is hereby proposed as Least Concern (LC).

Keywords: *Begonia panayensis*, medicinal plants, Mindanao, Surigao provinces, taxonomy.

INTRODUCTION

The Pantropical genus *Begonia* Linnaeus (1753: 1056) 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 has *ca.* 165 species (Pelser et al. 2011–; Hughes et al. 2015–) recognized and categorized in 3 sections, namely: *Petermannia*, Klotzsch (1854: 124), *Baryandra* A. de Candolle (1859: 122), 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 discoveries *B. fritchiana* Amoroso et al. (2023:42), *B. seabodensis* Mazo and Rubite (2023: 88), and *B. noraunorae* Blasco et al. (2023: 194). Based on PNH herbarium specimens and relevant literature, there are ca.11 recorded *Begonia* species in Surigao provinces (Blasco et al. 2023; Hughes et al. 2015–) including *B. noraunorae* Blasco et al., (2023: 194). In addition, there are numerous medicinal plants and endemic species in the province of Surigao del Sur in southern Mindanao, however there are little data on their identification and conservation (Blasco et al. 2014).

Bujon creek is located in the municipality of Lanuza, Surigao del Sur and bounded by the adjacent municipalities of Cortes and Cantilan (Ilagan et al. 2022). During our field work at Bujon creek to document medicinal plants of Surigao del Sur, we discover a new species of *Begonia* growing abundantly on a shady, moist rocky slopes on both sides of a creek at lower elevation ca. 10 m. We assumed the species belongs to section *Petermannia* Klotch. From the first to the fourth location, we did not find any flowers but only capsules. Upon thorough examination of the capsule, we noticed its distinct morphology: the jagged edge and the sliced or slashed shaped of the wings of the capsules. One of our field guides said, we called that portion *abhak* in *Bisayan*, which means the margins of the capsule wings are somewhat sliced or slashed. Finally on the fifth location we found a complete inflorescence. We then confirmed its placement to *Petermannia* due to its axillary or terminal inflorescences, where male flowers are distal while the female flowers basal, with two-tepaled staminate flowers and five-tepaled pistillate flowers (Rubite 2012). According to our herbalist field guides, the species is locally called *dap-dap* which means succulent and with sour taste. It is edible and used to treat coughs, colds and skin rashes. We then got the idea from our field guides to name the new species to *Begonia abhak* due to its sliced or slashed margins of the capsule wings. We propose *Begonia abhak* Blasco, Tandang, Alejandro & Rubite (Figures 1 & 2) a new species under section *Petermannia*. The descriptions and color plates are hereby provided.

MATERIALS & METHODS

Fieldwork was done in Bujon creek, Lanuza, Surigao del Sur where the *Begonia* species was found. Morphological characterization of vegetative and reproductive parts was conducted following Blasco et al. (2021) and Rubite et al. (2021). Detailed examination of reproduc-

tive 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.

TAXONOMIC TREATMENT

Begonia abhak Blasco, Alejandro, Tandang & Rubite, **sp. nov.** (Figs. 1 & 2); Sect. *Petermannia*.

Type: Philippines: Mindanao, Surigao del Sur, Lanuza. Bujon. ca. 10 m. on shady, moist, rocky slopes alongside a small creek, 06 June 2022, *Freddie A. Blasco 22- 009* (holotype PNH, Isotype HNUL).

Diagnosis

Begonia abhak resembles *B. panayensis* Merrill in having tall, erect and glabrous stems, oblanceolate leaves, glossy surface adaxially, light green abaxially, acuminate apex, acute base, 2 tepaled staminate flowers, 5 tepaled pistillate flowers and green ovaries with pink wings. However, *B. abhak* differs in having shorter stems at 1.3 m (vs. 1.5 m), stipules broadly ovate at 19–20 × 9–10 mm (vs. oblanceolate 15–20 mm long), smaller lamina at 14–15 × 5.5–6 cm (vs. 16–20 × 4–6 cm.) with serrated margins (vs. dentate), broadly ovate male tepals (vs. orbicular), shorter and narrower capsules at 16–17 × 14–15 mm. (vs. longer and wider 25 × 20 mm).

Description

Monoecious, perennial herb. Stem stands 1.3 m. tall, green to brownish, glabrous, erect, 7–8 mm in diam-



Figure 1. *Begonia abhak* Blasco, Alejandro, Tandang & Rubite, sp.nov. A. & B. Habit and Habitat. All from Freddie A. Blasco 22-009.



Figure 2. *Begonia abhak* Blasco, Alejandro, Tandang & Rubite, sp. nov. A. Stem, B. Stipule, C. Bracts, D. Staminate flowers, E. Young pistillate flower, F. Mature pistillate flower, G. Pistillate flower side view, H. & I. Immature capsules, J. Matured capsule, K. Cross section of the ovary. All from *Freddie A. Blasco 22-009*.

eter, internodes 9–12 cm. Stipules caducous, green, 19–20 × 9–10 mm. broadly ovate, margin entire, apex sharply acute, glabrous. Petioles terete, succulent, green, 6–10 mm long and 3–4 mm in diameter with tiny hairs near the lamina. Leaves alternate, lamina green membranous, oblong to oblanceolate 14–15 cm × 5.5–6 cm, apex acuminate, adaxial surface shows spaced tiny bristles, glossy, dark green, abaxial surface light green and glabrous, base obliquely acute, margin broadly serrate with slightly red tiny bristles and a red to brown stripe along its side, primary veins 3 or 4, hairs on the veins present. Inflorescences separate male and female; female inflorescence on short peduncle 2–3 cm, flowers solitary, basal to staminate flowers; male inflorescence with longer peduncle 9–10 cm, flowers apical on short cymes branching 4–6 times. Bracts persistent, light green with light pink color on the side, basal pairs, triangular, 9–10 × 3–4 mm, margin entire, apex acuminate. Staminate

flowers pedicel 5–6 mm, tepals 2 pink, broadly ovate, 4–5 × 4–5 mm, margins entire, apex roundly obtuse, androecium actinomorphic 3 × 2 mm in dia. stamens 15–20 yellow, filaments 0.5–1 mm, exserted, exceedingly scattered at the top, anthers widely ovate, apex rounded ca. 0.5 mm. Pistillate flowers pedicel 2–4 mm, tepals 5 light pink, lanceolate to ovate 10–11 mm × 5–6 mm, margins entire, apex roundly acute, ovary light green oblong with pink wings 12–13 × 8–9 mm (wings included) locules at 9–10 × 2–3 mm, 3 locular placentation axile, 3 winged surrounding and extending beyond the ovary, wings pink unequal, abaxial wing 10–11 × 7–8 mm broadly ovate, lateral wings 9–10 × 5–6 mm ovate, 3 styles, yellow ca. 3mm long, apically 2-cleft, stigmas in spiral band. Capsule nodding drying pale brown, glabrous, pedicel 9–10 mm, trigonous elliptic, 16–17 × 14–15 mm (wings included) 3 unequal wings, abaxial wing 18–19 × 9–10 mm, slashed or jagged edge to entire margin, lateral wings 17–18 × 6–7 mm, shallowly rounded, apex truncate to rounded, base truncate to cordate.

Etymology

The specific epithet *abhak* is derived from the *Bisayan/Cebuano* word, which means sliced or slashed, referring to the margin of the capsule wings.

Phenology

Observed flowering and fruiting in April to June.

Distribution and ecology

Endemic to the province of Surigao del Sur, Caraga Region, Eastern Mindanao, Philippines. It grows on shady, moist, rocky slopes alongside a small creek of Bujon, Lanuza, Surigao del Sur on lower elev. ca. 10 m.

Proposed conservation assessment

Least Concern (LC), (>1000 individuals in 6 locations). Populations consists of ca. 250–300 plants in each of the 6 locations including both young and mature individuals. At the moment, *B. abhak* is only known from the type locality. The location is not a protected area. Based on what we observed, the species grow abundantly on both sides of the creek and some areas nearby. There are still locations that are not being explored due to time constraints. We are not allowed to stay overnight at the location due to peace and order situation. According to the locals, there are proposals from different mining companies to convert the location into a mining site but the local government, the church, the nearby indigenous inhabitants and the locals refused the offer. We proposed Least Concern [LC] (IUCN, 2022).

ACKNOWLEDGEMENTS

FAB would like to thank the Department of Science and Technology (DOST) through the Science of Educational Institute under Accelerated S & T Human Resource Development program for the Scholarship grant and Ms. Marianita B. Vales of Saint Theresa College of Tandag. Likewise, The authors would like to thank Hon. Mayor Anilao P. Dawog of Lanuza, Surigao del Sur and the Department of Environment and Natural Resources (DENR), CARAGA Regional Office, Butuan City, for the issuance of gratuitous permit (Wildlife Gratuitous Permit No. R13-2021-24).

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