Phytotaxa 697 (3): 282–287
https://www.mapress.com/pt/

Article

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

https://doi.org/10.11646/phytotaxa.697.3.7

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

FREDDIE A. BLASCO[1a*], GRECEBIO JONATHAN D. ALEJANDRO[2,c] & ROSARIO R. RUBITE[3,b]
[1]*College of Arts & Sciences and Teacher Education Department, Saint Theresa College of Tandag, Tandag City 8300, Surigao del Sur, Philippines*
[2]*College of Science and Research Center for the Natural and Applied Science, University of Santo Tomas, España, Manila 1015, Philippines*
[3]*Department of Biology, College of Arts and Sciences, University of the Philippines Manila, Padre Faura, Manila, Philippines*
[a] *fred8mse@gmail.com; https://orcid.org/0000-0001-7157-1853*
[b] *rrrubite@up.edu.ph; https://orcid.org/0000-0002-1704-1533*
[c] *gdalejandro@ust.edu.ph; https://orcid.org/0000-0003-4524-0385*
**Author for correspondence*

Abstract

Begonia aristata is described as a new species endemic to the Philippines. It grows on rocky slopes in semi-shaded coconut farm habitat along the coast of Matho, Cortes, Surigao del Sur. *Begonia aristata* resembles *Begonia benitotanii* Rubite, Tandang & C.W.Lin in having erect and branching stems, ovate-lanceolate leaves with a serrate margin, 2-tepaled staminate flowers and 5-tepaled pistillate flowers with 3 equal wings but differs in being shorter (ca. 45 cm tall vs. 2–4 m tall), having triangular stipules (vs. oblong), obtuse leaf base (vs. obliquely cordate), adaxially dark green and scabrid (vs. emerald green with white patches), and oblong ovary (vs. elliptic). Based on IUCN criteria we proposed data deficient (DD) since there is only one population currently known.

Key words: *Begonia benitotanii, Begonia longistipula,* Mindanao, Surigao provinces, taxonomy

Introduction

The genus *Begonia* Linnaeus (1753: 1056) is one of the largest angiosperm genera with *ca*. 2150 species classified into seventy sections (Hughes *et al*. 2015–; Moonlight *et al*. 2024). It is found in both the Neotropical and Paleotropical regions, with *ca*. 177 species recorded from the Philippines (Ang *et al*. 2024; Pelser *et al.* 2011–). The *Begonia* of the Philippines are classified into 3 sections: *Baryandra* de Candolle (1859: 122), *Petermannia* Klotzsch (1854: 124) de Candolle (1859: 128) and *Platycentrum* (de Candolle 1859: 134) (Ang *et al.* 2024; Hughes *et al*. 2015–). Based on herbarium specimens in PNH and relevant literature, there are nine recorded *Begonia* section *Petermannia* collected in Surigao Provinces, namely: *Begonia abhak* Blasco *et al*. (2024b: 48), *B. benitotanii* Rubite *et al*. (2021: 259), *B. colorata* Warburg (1904: 54), *B. contracta* Warburg (1904: 54), *B. lanuzaensis* Blasco *et al*. (2021: 205), *B. longistipula* Merrill (1911: 379) *Begonia matahom* Blasco *et al*. (2024a: 63), *B. mindanaensis* Warburg (1904: 54) and *B. noraaunoriae* Blasco *et al.* (2023: 194), and four section *Baryandra*, *B. acuminatissima* Merrill (1911: 395), *B. amparoae* Blasco *et al*. (2022: 137), *B. longiscapa* Warburg (1904: 52) and *B. makuruyot* Rule *et al*. (2020: 227).

During a field work in 2022 an interesting begonia was found near the coast of Matho, Cortes, Surigao del Sur, at that time there were no inflorescences found. Recollection by the first author in October 2024 when the species was in full bloom enabled a thorough study. The complete inflorescences were found and the stipules showed a unique character in which they are attached to the petiole sometimes in triplets, rather than the usual 1 or 2 (Fig. 2b). This new species falls in section *Petermannia* due its cane-like structure; inflorescences axillary or terminal where male flowers are distal and female flowers basal, protogynous; generally, two-tepaled staminate flowers and five-tepaled pistillate flowers (Rubite, 2012). We propose *Begonia aristata* Blasco, Alejandro & Rubite (figs. 1, 2 & 3), a new species under section *Petermannia*.

 Accepted by Mark Hughes: 4 Apr. 2025; published: 17 Apr. 2025

Materials and Methods

Fieldwork was done in Matho, Cortes, Surigao del Sur where the *Begonia* species was found. Morphological characterization of vegetative and reproductive parts was conducted following Blasco *et al*. (2024a) and Rubite *et al*. (2021). Detailed examination of reproductive parts was based on preserved collections. Collected samples were then deposited to PNH, further morphological comparisons were made based on literature, herbarium specimens and living collection of plants.

FIGURE 1. *Begonia aristata* Blasco, Alejandro & Rubite. A & B. Habit and habitat. All from *Freddie A. Blasco 22-007*.

Taxonomy

Begonia aristata Blasco, Alejandro & Rubite *sp. nov.* sect. *Petermannia* (Figs. 1, 2 & 3)

Type: PHILIPPINES: Mindanao, Surigao del Sur, Matho, Cortes, Surigao del Sur elevation *ca*. 0–10 m. asl. on coconut farm near a coast, May 10, 2022, *Freddie A. Blasco 22-007* (holo PNH).

Diagnosis:—*Begonia aristata* resembles *Begonia benitotanii* Rubite, Tandang & C.W.Lin in having erect and branching stems, ovate-lanceolate leaves with a serrated margin, 2-tepaled staminate flowers, and 5-tepaled pistillate flowers with 3 equal wings on the ovary but differs in being 45 cm tall (vs. 200–400 cm), having smaller triangular stipules, 11–14 × 5–7 mm (vs. oblong, 25–30 × 4–10 mm) with aristate apex (vs. mucronate), smaller leaf blade 13–15 × 5–6 cm (vs. 8–21 × 6–12), adaxially brownish scabrid (vs. emerald green with white patches), base obtuse (vs. obliquely cordate), female flowers in pairs are of equal height with the branching staminate flowers (vs. female flowers basal to staminate flowers) and oblong capsule 15–16 × 19–20 mm (vs. elliptic 30–38 × 20–36 mm).

Monoecious perennial herb, standing *ca*. 45 cm. tall, **stem** erect and branching, sometimes curved, reddish to greenish, glabrous, 6–7 mm in diameter, **internodes** 5–8 cm long, nodes slightly swollen. **Stipules** triangular**,** persistent, solitary, sometimes triplets, the other 2 guardians are caducous, prominently keeled when young, keel cease to be visible when mature; greenish when young, pinkish to reddish when mature, 11–14 × 5–7 mm, adaxial and abaxial surface glabrous, base truncate to cordate, margin entire, apex aristate, arista 0.05–1 mm. **Petioles** terete, succulent, greenish to reddish, 6–7 × 3–4 mm in diameter, glabrous. **Leaves** alternate, ovate-lanceolate, lamina green, 13–15 cm × 5–6 cm, adaxial surface scabrid, dark green, sometimes with brown to gray patches between veins, abaxial surface brownish, scabrid, base obtuse, margin serrate with slightly red tiny bristles along its side, venation palmate, primary veins 5–6, veins glabrous, apex long acuminate. **Inflorescence** axillary, protogynous, peduncle *ca*. 5 cm

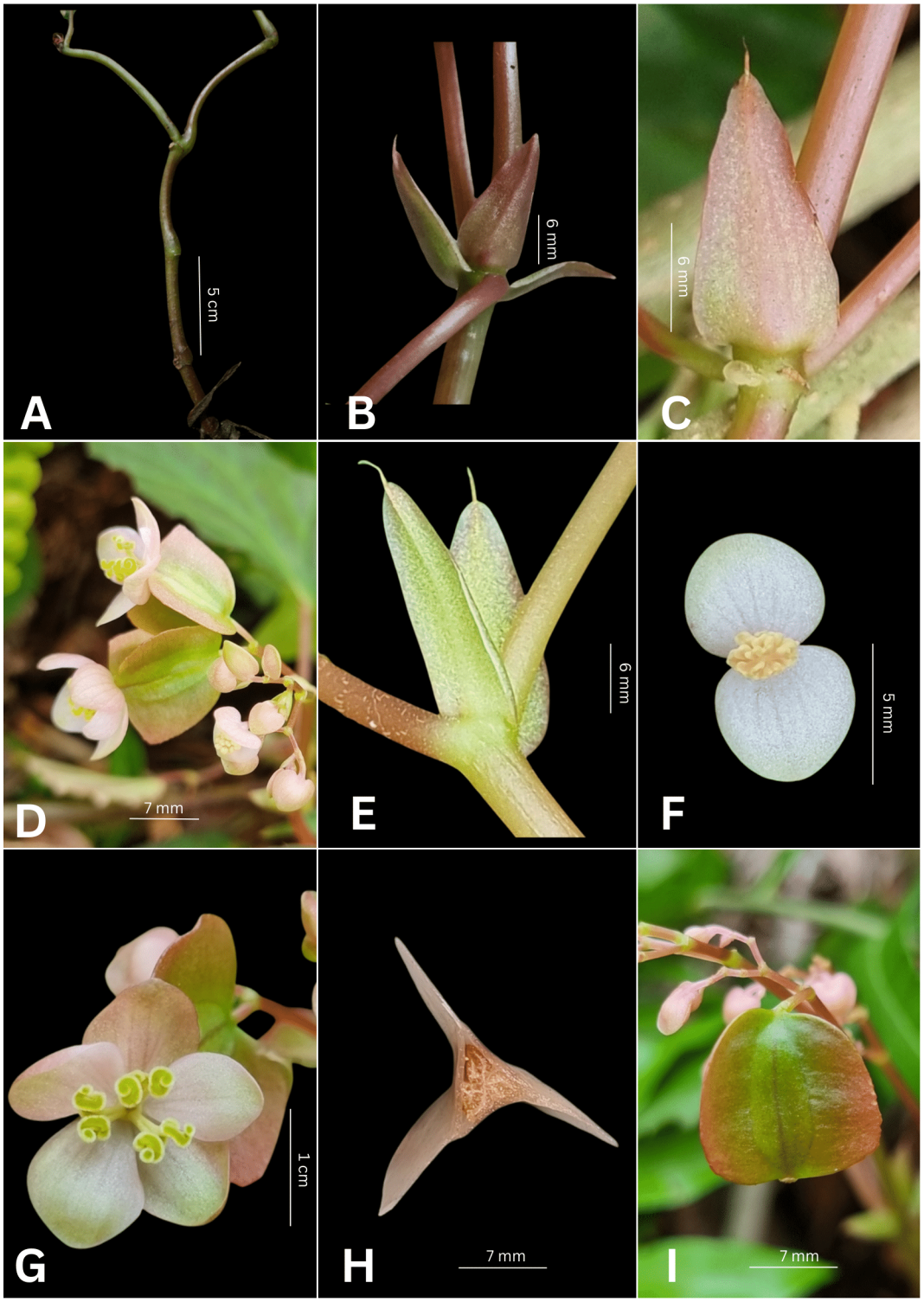

FIGURE 2. *Begonia aristata* Blasco, Alejandro & Rubite. A. Stem, B. Young stipules, C. Mature stipule. D. Inflorescence. E. Bracts, F. Staminate Flower, G. Pistillate flower, H. Cross section of the ovary, I. Capsule. All from *Freddie A. Blasco 22-007*.

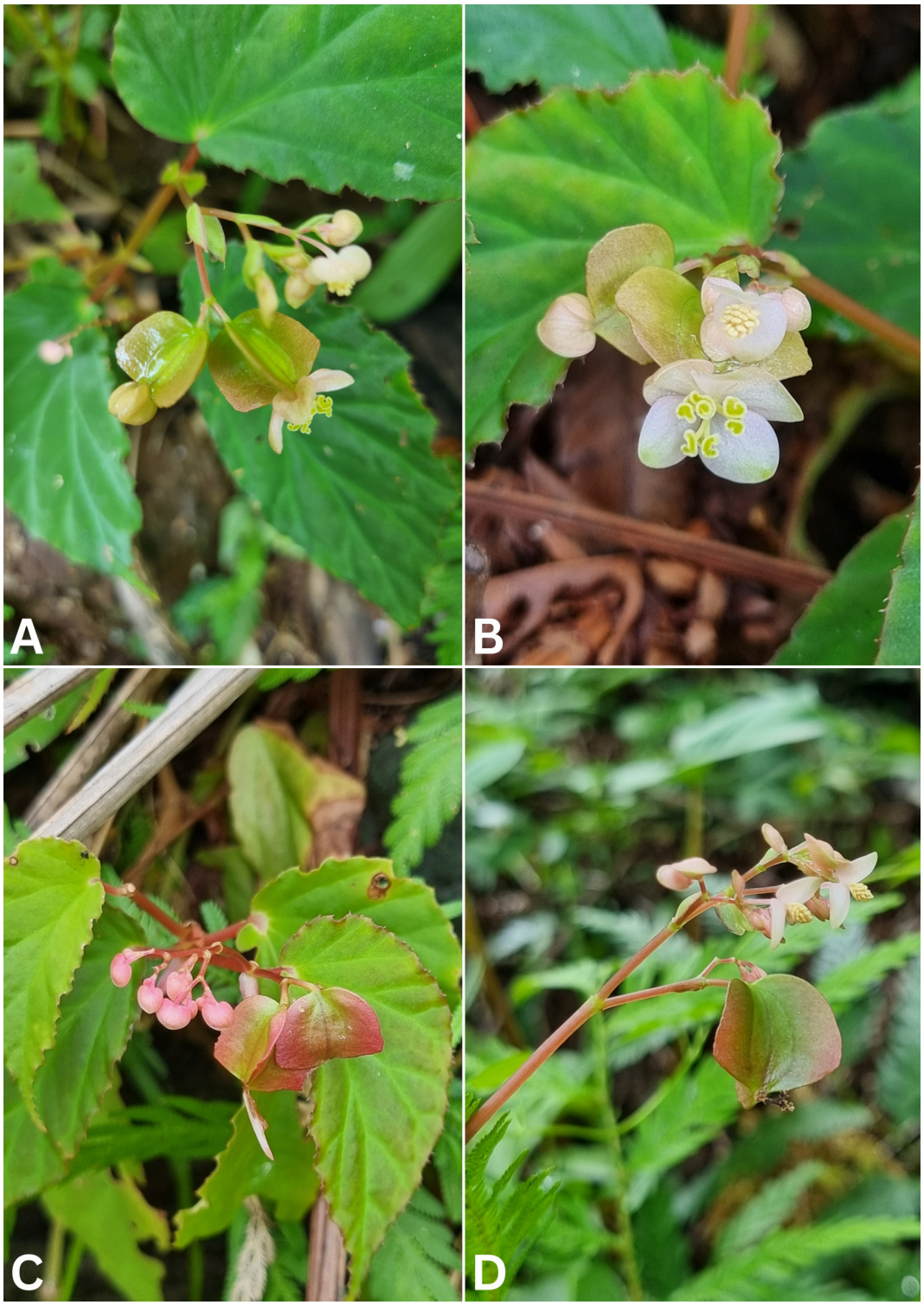

FIGURE 3. *Begonia aristata* Blasco, Alejandro & Rubite. A., B., C., & D. Different stages of the inflorescence. All from *Freddie A. Blasco 22-007*.

then separates between male and female; female inflorescence with peduncle *ca*. 2 cm, female flowers borne in pairs (not basal to staminate); male inflorescence with peduncle *ca*. 2 cm, short cymes branching 3–5 times.**Bracts** semi-persistent at the base of the inflorescence, light green with transparent pinkish along its margin, basal pairs, lanceolate, 13–15 × 4–5 mm, margin entire, apex aristate, arista 2–3 mm. **Staminate flowers** pedicel 5–6 mm, tepals 2, light pink, broadly ovate to orbicular 5–6 × 5–6 mm, margin entire, apex obtuse to orbicular, androecium actinomorphic 3 × 3 mm in diameter, stamens 15–20, yellow; filaments 0.3–0.5 mm, slightly fused at the base to dehiscing 2 slits that runs along the length, anthers obovate *ca.* 0.5 mm, apex retuse . **Pistillate flowers** pedicel 5–6 mm, tepals 5, pink to white, turns white as it goes maturity, uniformly obovate, 10–12 × 5–6 mm, margin entire, apex roundly obtuse; ovary greenish with pink wings, oblong 15–17 × 19–20 (wings included), locular part 13–15 × 5–6 mm (wings excluded), 3-locular, placentation axile, wings 3, pink, sub-equal surrounding and extending beyond the locules 15–16 × 10–11 mm, angular, apex sharply obtuse, styles 3, yellow, *ca*. 2 mm long, apically two-cleft, stigmas in a curled, spirally extended band and conspicuously feathery. **Capsule** nodding, drying pale brown, glabrous, trigonous oblong, 15–16 × 19–20 mm (wings included), pedicel 5–6 mm, wings 3, sub-equal, apex truncate to roundly obtuse, base cordate.

Phenology:—Observed flowering and fruiting in September and October (in full bloom).

Etymology:—The epithet refers to the prominent aristate apex of the bracts and stipules.

Distribution and Ecology:—Endemic to the province of Surigao del Sur, Caraga Region, Eastern Mindanao, Philippines. It thrives with banana and coconut plants on rocky slopes near the coast of Matho, Cortes, Surigao del Sur, elev. 0–10 m asl.

Proposed IUCN category:—We only observed one population of this new species, consisting of perhaps 20 individuals. The precise population size and distributional range of *B. aristata* has not yet been discovered. Information about the species will become available through more investigations in the remaining forest regions close to the type site and its surrounding municipalities. We propose that this new species be classified as Data Deficient [DD] (IUCN, 2022).

Notes:—*Begonia aristata* also resembles *Begonia longistipula* Merr. in having glabrous, erect, and branching stems, long acuminate leaf apex, lanceolate bracts, 2-tepaled staminate flowers, 5-tepaled pistillate flowers, ovary with 3 equal wings and nodding glabrous capsules, but differs in having stipules with aristate apex (vs. acuminate), ovate leaves with an obtuse base (vs. oblanceolate, base acute or obtuse), serrated margin (vs. denticulate), semi-persistent bracts with aristate apex (vs. deciduous with acuminate apex), female flowers in pairs at equal height with the staminate flowers (vs. solitary female flower basal to staminate flowers), and capsule with cordate base (vs. acute).

Acknowledgements

The authors would like to thank Mr. Mark Angelo C. Bucay for securing the necessary permits, the Mayor of Cortes, Hon. Josie M. Bonifacio for granting us permission to conduct this study and the Department of Environment and Natural Resources (DENR), Biodiversity Management Bureau, Diliman, Quezon City, for the gratuitous permit (Wildlife Gratuitous Permit No. 345).

References

Ang, Y.P., Blasco, F.A., Bucay, M.A.C., Calaramo, M.A., Chung, K.-F., Dela Cruz, C.J.P., Hughes, M., Mazo, K.R.F., Medicilo-Guiang, M., Naive, M.A.K., Pranada, McA.K., Talaña, A.D., Tandang, D.N., Rubite, R.R. & Rule, M.G.Q. (2024) Photographic Guide to Selected Species of Philippine *Begonia*. *In*: Rubite, R.R., Chung, K.-F. & Hughes, M. (Eds.) *Begonia of the Philippines*. KBCC Press, Taipei, Taiwan, 276 pp.

Blasco, F.A., Rubite, R.R., Cortes, J.C. & Alejandro, G.J.D. (2021) *Begonia lanuzaensis* (sect. *Petermannia*, Begoniaceae) a new species from Surigao del Sur, Mindanao Island, Philippines. *Phytotaxa* 523 (3): 203–207. https://doi.org/10.11646/phytotaxa.523.3.1

Blasco, F.A., Alejandro, G.J.D., Tandang, D.N., Vales, M.B. & Rubite, R.R. (2022) *Begonia amparoi* (Begoniaceae, section *Baryandra*) a new species from Linungaw Twin Islands, Surigao del Sur, Mindanao, Philippines. *Phytotaxa* 549 (2): 136–140. https://doi.org/10.11646/phytotaxa.549.2.2

Blasco, F.A., Tandang, D.N., Alejandro, G.J.D., Bucay, M.A.C., Cortes, J.C. & Rubite, R.R. (2023) *Begonia noraaunorae* (section *Petermannia*, Begoniaceae) a new species endemic to Surigao del Sur, Mindanao Island, Philippines. *Phytotaxa* 620 (2): 193–197.

https://doi.org/10.11646/phytotaxa.620.2.8

Blasco, F.A., Alejandro, G.J.D., Tandang, D.N. & Rubite, R.R. (2024a) *Begonia matahom* (Section *Petermannia,* Begoniaceae), a new species from Tago, Surigao del Sur, Philippines. *Taiwania* 69 (1): 62–66. https://doi.org/10.36253/jopt-15356

Blasco, F.A., Alejandro, G.J.D., Tandang, D.N. & Rubite, R.R. (2024b) *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. https://doi.org/10.36253/jopt-15356

de Candolle, A. (1859) Memoire Sur La Famille Des Begoniacees. *Annales des Sciences Naturelles; Botanique* 11: 122–134.

Elmer, A.D.E. (1910) New species of *Begonia*. *Leaflets of Philippine Botany* 2 (43): 735–740.

Hughes, M., Moonlight, P.W., Jara-Muñoz, A., Tebbitt, M.C., Wilson, H.P. & Pullan, M. (2015–continuously updated) Begonia Resource Centre. Available from: http://padme.rbge.org.uk/begonia/ (accessed 16 April 2025)

IUCN Standards & Petitions Committee (2022) Guidelines for Using the IUCN Red List Categories and Criteria. Version 15.1. Available from: https://www.iucnredlist.org/documents/RedListGuidelines.pdf (accessed 16 April 2025)

Klotzsch, J.F. (1854) Begoniaceen-Gattungen und Arten. *Abhandlungen der Koniglichen Akademie der Wissenschaften zu Berlin* 1854: 194–243.

Linnaeus, C. (1753) *Species Plantarum*. Vol 2. Laurentius Salvius, Stockholm, 639 pp.

Merrill, E.D. (1912 [1911]) The Philippine species of *Begonia. Philippine Journal of Science* section C 6: 369–406.

Moonlight, P.W., Baldaszti, L., Cardoso, D., Elliot, A., Sarkinen, T. & Knapp, S. (2024) Twenty years of big plant genera. *Proceedings of the Royal Society B* 291*:* 20240702. https://doi.org/10.1098/rspb.2024.0702

Pelser, P.B., Barcelona, J.F. & Nickrent, D.L. (Eds.) (2011–onwards) Co's digital flora of the Philippines. Available from: http://www.philippineplants.org (accessed 16 April 2025)

Rubite, R.R., Brillantes, R.Y., Tandang, D.N., Moran, C.B., Rule, M.G.Q. & Lin, C.W. (2021) *Begonia benitotanii* (section *Petermannia*, Begoniaceae) a new species endemic to the Philippine island of Bucas Grande. *Phytotaxa* 513 (3): 257–264. https://doi.org/10.11646/phytotaxa.513.3.5

Rubite, R.R, (2012) Delimitation of *Begonia* L. sections *Diploclinium* and *Baryandra* (Begoniaceae) in the Philippines. *Asia Life Sciences* 21: 363–373.

Rule, M.G.Q., Ang, Y.P., Rubite, R.R., Docot, R.V.A., Bustamante, R.A.A. & Robinson, A.S. (2020) *Begonia makuruyot* (Begoniaceae, section *Baryandra*) a new species from Surigao del Norte Province, Philippines. *Phytotaxa* 470 (3): 226–234. https://doi.org/10.11646/phytotaxa.470.3.2

Warburg, O. (1904) Begoniaceae. *Fragmenta Florae Philippinae*. Gebrüder Borntraeger, Leipzig, pp. 51–56.