



## *Begonia longlingensis*, a new species of *Begonia* (Begoniaceae) from Yunnan, China

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**ABSTRACT:** *Begonia longlingensis* Y.H.Tan & H.B.Ding, a new species of Begoniaceae from Southwest Yunnan, China, is described and illustrated. Morphologically, it is primarily similar to *B. wenshanensis* in same section but differs by its hairy inflorescences and ovary (vs. glabrous), five tepals of pistillate flower (vs. three tepals), bracteoles under the ovary (vs. without) and rhizomes well developed (vs. poorly developed).

**KEY WORDS:** *Begonia* sect. *Diploclinium*, *B. wenshanensis*, bracteole, morphology, new taxon.

### INTRODUCTION

*Begonia* L. is the sixth largest genus of angiosperms, and the number of accepted species of *Begonia* currently reaches 2066 species (Hughes *et al.*, 2015–). Up to 18 January 2022, Yunnan has 117 species of *Begonia* among the 250 species from China (e.g., Gu *et al.*, 2007; Shui and Chen 2017; Wang *et al.*, 2019; Ding *et al.*, 2020; Guo *et al.*, 2021; Tian *et al.*, 2021; Cai *et al.*, 2022). Among the currently known Begonias in China, only *Begonia yui* Irmischer (1951: 36) has paired bracteoles below the ovary.

During the botanical surveys of the Transboundary Cooperation on Biodiversity Research and Conservation in Gaoligong Mountains in 2021, the authors collected an unknown *Begonia* species with bracteoles present. After careful reference the literature and specimens with its similar species, including several recently described Begonias (e.g. *B. casseabri* Y.H.Tan, M.B.Maw & H.B.Ding, *B. persistens* Y.H.Tan, M.B.Maw & H.B.Ding, *B. latibracteata* Y.H.Tan, M.B.Maw & H.B.Ding) with bracteoles in northern Myanmar (Maw *et al.*, 2021), and then we confirmed that it is a species new to science. Here, the new species *Begonia longlingensis* Y.H.Tan & H.B.Ding is described from Yunnan, China.

### TAXONOMIC TREATMENT

*Begonia longlingensis* Y.H.Tan & H.B.Ding, *sp. nov.*

龙陵秋海棠 Figs 1 & S1

**Type:** CHINA. Yunnan Province: Baoshan City, Longling County, Longling Xiaoheishan Provincial Natural Reserve, 24°50'57" N, 98°45'48" E, elev. 2144 m, 14 September 2021, Yun-Hong Tan, Hong-Bo Ding & Yao-Ke Li T1431 (holotype: HITBC! [0067967], isotypes: HITBC! [0067968], PE!).

**Diagnosis:** *Begonia longlingensis* is morphologically similar to *B. wenshanensis* C.M.Hu ex C.Y.Wu & T.C.Ku (Wu and Ku, 1995: 262) in having similar leaves and caulescent habit. But it can be distinguished from the similar species by the following characters: puberulous inflorescences (vs. glabrous), five tepals of pistillate flower (vs. three tepals), bracteoles under the ovary (vs. without), ovary densely red succulent strigose (vs. glabrous) and rhizomes well developed (vs. poorly developed).

**Description:** Herbs, monoecious, 30–80 cm tall, rhizomatous, rhizomes elongate, 0.5–1.3 cm in diameter, bright red, puberulous; aerial stems erect, puberulous. **Leaves** cauline, **stipule** ovate, 5–7 × 2–4 mm, yellow-green, subglabrous, keeled, apex cuspidate, margin entire, caducous; **petiole** 4–15 cm long, yellow-green to reddish brown, hirsute or sparsely so; **blade** triangular-ovate, asymmetric, 9–15 × 6–13 cm, abaxial surface hispidulous along veins, adaxial surface hirsute, base oblique, cordate, margin irregularly denticulate and shallowly lobed, apex attenuate to caudate-acuminate; venation palmate, 5–7-nerved. **Inflorescences** axillary cymes, 5–16 cm long, puberulous, peduncle 4–11 cm long, yellow-green or white to reddish brown; bracts ovate, 6–11 × 2–4 mm, yellow-green, subglabrous, caducous. **Staminate flower:** pedicel 0.5–1.8 cm long, puberulous or subglabrous, tepals 4, white to pink, unequal, outer 2, broadly ovate, 2.0–2.2 × 1.8–2.0 cm, abaxially red hirsute, inner 2, obovate, 1.2–1.6 × 0.8–1.0 cm, glabrous, androecium actinomorphic, 70–100 stamens, filaments 1–1.8 mm long, subequal, fused at base into a short column, anther obovate, yellow, ca. 1.2 mm long, apex obtuse to truncate, shorter than filaments. **Pistillate flower:** pedicel 1.3–2.2 cm long, puberulous or subglabrous, with 2 bracteoles under the ovary, **bracteoles** ovate, 10–12 × 6–10 mm, red

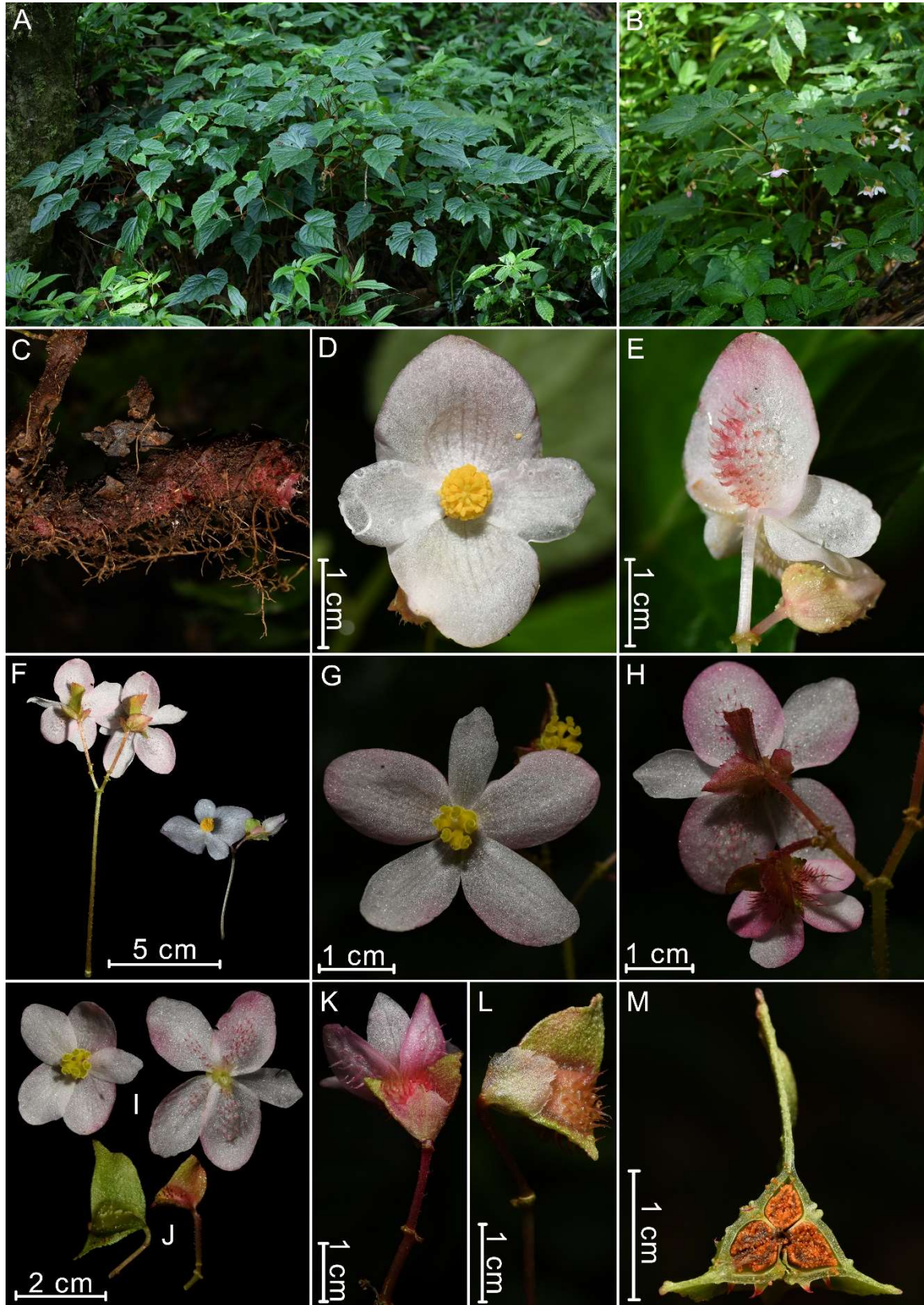


Fig. 1. *Begonia longlingensis* Y.H.Tan & H.B.Ding, *sp. nov.* A–B. habit; C. rhizome; D. staminate flower (front view); E. staminate flower (back view); F. inflorescence; G. pistillate flower (front view); H. pistillate flowers (back view); I. pistillate flowers; J. fruits; K–L. pistillate flower showing bracteoles under the ovary; M. cross section of fruit.



or yellow-green, subglabrous, keeled, margin irregularly denticulate and ciliate, persistent; **ovary** 3-locular, densely red succulent strigose, placentation axillary, placentae 2 per locule; **tepals** 5, white to pink, unequal, outer 4, broadly ovate to obovate, 2.0–2.2 × 1.2–1.5 cm, abaxially red hirsute, inner 1, obovate, 1.8–1.9 × 0.7–0.8 cm, glabrous; **styles** 3, ca. 5 mm long, golden yellow, stigma spirally twisted. **Fruit**: nodding, capsule ovoid, 1.5–2.4 × 1.0–1.3 cm, green or reddish brown, densely red succulent strigose, unequally 3-winged, abaxial wing obliquely triangular, 0.8–1.5 × 1.0–1.2 cm, lateral wings lunate, 0.4–0.5 × 0.8–1.0 cm.

**Phenology**: Flowering from August to September, fruiting from September to October.

**Etymology**: The specific epithet '*longlingensis*' refers to the name of Longling County, which includes the type locality of the new species.

**Habitat and Distribution**: The new species is currently known from Longling Xiaoheshan Provincial Natural Reserve of Baoshan City, and, Linxiang District of Lincang City, Yunnan Province, China. It grows in moist environment in broad-leaved evergreen forests, at 2100–2300 m elevation.

**Additional specimens examined**: CHINA. Yunnan Province, Lincang City, Linxiang District, 23°54'28" N, 99°56'04" E, elev. 2270 m, 22 August 2021, *Yan-Xiong Gong G389* (HITBC); Same locality as holotype, 24°50'58" N, 98°45'48" E, elev. 2168 m, 14 September 2021, *Yun-Hong Tan, Hong-Bo Ding & Yao-Ke Li T1433* (HITBC); Same locality as holotype, 24°51'03" N, 98°45'48" E, elev. 2130 m, 14 September 2021, *Yun-Hong Tan, Hong-Bo Ding & Yao-Ke Li T1437* (HITBC).

**Notes**: *Begonia longlingensis* has caulescent rhizomatous habit, four tepals of staminate flowers, five tepals of pistillate flower, 3-locular ovary with three unequal wings and three styles, an axillary placenta and two branches per locule. So, we tentatively classify this species in *Begonia* section *Diploclinium* (Klotzsch) A. DC. (Doorenbos *et al.*, 1998; Moonlight *et al.*, 2018) based on the morphology.

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