



Begonia pingxiangensis, a new species of *Begonia* sect. *Coelocentrum* (Begoniaceae) from Guangxi, China

Hou-Cheng XI¹, Fu-Yang NONG², Jian-Yong SHEN¹, Xing-Da MA¹, Li-Ju JIANG¹, Wen-Guang WANG^{1,*}

1. Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, Mengla, Yunnan, 666303, China. 2. Pingxiang Port Economic Zone Management Committee, Pingxiang, Guangxi, 532600, China. *Corresponding author's emails: wangwenguang@xtbg.ac.cn

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ABSTRACT: *Begonia pingxiangensis*, a new species from Guangxi, China, is described and illustrated. The new species resembles *B. daxinensis* in the leaf blade and flower, but can be distinguished by its leaf blade shape (ovate to broadly ovate vs obliquely ovate to suborbicular), size (4–8 × 3–7 cm vs 10–24 × 10–17 cm), flower color (white vs white or pinkish), smaller staminate flower (outer two 5–8 × 6–10 mm, inner two ca. 3–4 × 2 mm vs outer two 12–19 × 10–16 mm, inner two 12–14 × 4–5 mm) and pistillate flower (outer two tepals 7–8 × 8–10 mm, inner one 3–4 × 2 mm vs outer two tepals 10–15 × 10–12 mm, inner one 5–7.5 × 2–5 mm) sizes.

KEY WORDS: *Begonia*, *Begonia daxinensis*, China, Guangxi, new taxon, taxonomy.

INTRODUCTION

The genus *Begonia* L. (Begoniaceae), distributed in tropical and subtropical areas of Asia, Africa, and America, comprises 2158 species and the number of known species has been increasing rapidly (Hughes *et al.* 2015–). In China, 173 species of *Begonia* were documented in Flora of China and the distribution center is Southeast Yunnan and Southwest Guangxi (Gu *et al.* 2007). After recent years' taxonomic study of the genus, up to now, 288 species (including subspecies, varieties and natural hybrid species) have been recognized in China (Borah *et al.*, 2024a,b; Tian *et al.*, 2024a,b; Wang *et al.*, 2024; Zhou *et al.*, 2024). The *Begonia* section *Coelocentrum*, distributed in the karst limestone areas from southern China to northern Vietnam, including 93 species (Hughes *et al.*, 2015–). Most of them are endemic species, and grow in narrow limestone habitats. In Guangxi, 94 species of *Begonia* have been found to date (Liu *et al.*, 2020; Feng *et al.*, 2023; Wang *et al.*, 2024; Zhou *et al.*, 2024), and 61 species belong to *B.* sect. *Coelocentrum*. The karst region of Guangxi and northern Vietnam is definitely the distribution center of *B.* sect. *Coelocentrum*, which possibly has more than 100 species (Wang *et al.*, 2024).

During a field survey of Pingxiang, Guangxi, China in November 2020, an unknown *Begonia* species with relatively small leaves was collected on a limestone mountain, and brought into cultivation in Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences. After consultation of herbarium specimens and review of relevant literature, a conclusion was made that it is a potential new species. Hence it is described and illustrated below. A detailed morphological comparison of the closely related species is presented in Table 1.

TAXONOMIC TREATMENT

Begonia pingxiangensis W.G.Wang, F.Y.Nong & H.C.Xi, *sp. nov.* 凭祥秋海棠 **Fig. 1**

Sect. *Coelocentrum*

Type: **China**, the voucher from a cultivated plant at Xishuangbanna Tropical Botanical Garden, Academy of Sciences, introduced from Puzhai Community, Youyi Town, Pingxiang City, Guangxi Zhuang Autonomous Region, 14 Aug. 2021, *Wen-guang Wang & Hou-cheng Xi 43* (holotype: HITBC0122059!; isotype: HITBC!).

Diagnosis: The new species resembles *Begonia daxinensis* T. C. Ku (Wu and Ku, 1997) in the leaf and flower, but can be distinguished by its leaf blade shape (ovate to broadly ovate vs obliquely ovate to suborbicular), size (4–8 × 3–7 cm vs 10–24 × 10–17 cm), flower color (white vs white or pinkish), smaller staminate flower (outer two 5–8 × 6–10 mm, inner two ca. 3–4 × 2 mm vs outer two 12–19 × 10–16 mm, inner two 12–14 × 4–5 mm) and pistillate flower (outer two tepals 7–8 × 8–10 mm, inner one 3–4 × 2 mm vs outer two tepals 10–15 × 10–12 mm, inner one 5–7.5 × 2–5 mm) sizes.

Description: Perennial herb, to 20 cm tall. Rhizome creeping, ca. 10 cm long, 7–11 mm in diameter, internodes short, 1–1.5 cm long, aerial stem absent. Stipules persistent, triangular, ca. 8 × 5 mm, brown, adaxially sparsely villous, apex acuminate and aristate, arista 3–4 mm long. Leaves basal; petiole red or green, 8–15 cm long, 1.5–3 mm in diameter, densely or sparsely villous; leaf blade ovate to broadly ovate, asymmetric, 4–8 × 3–7 cm, adaxially green to dark green, sometimes with grey green patches or dots between veins, sparsely hispid, abaxially light pale green, villous on veins; base cordate, apex acuminate, margin subentire, ciliate; venation palmate, 6 or 7 primary veins, midrib distinct, with ca. 2 secondary veins on each side, secondary veins branching dichotomously or nearly so,

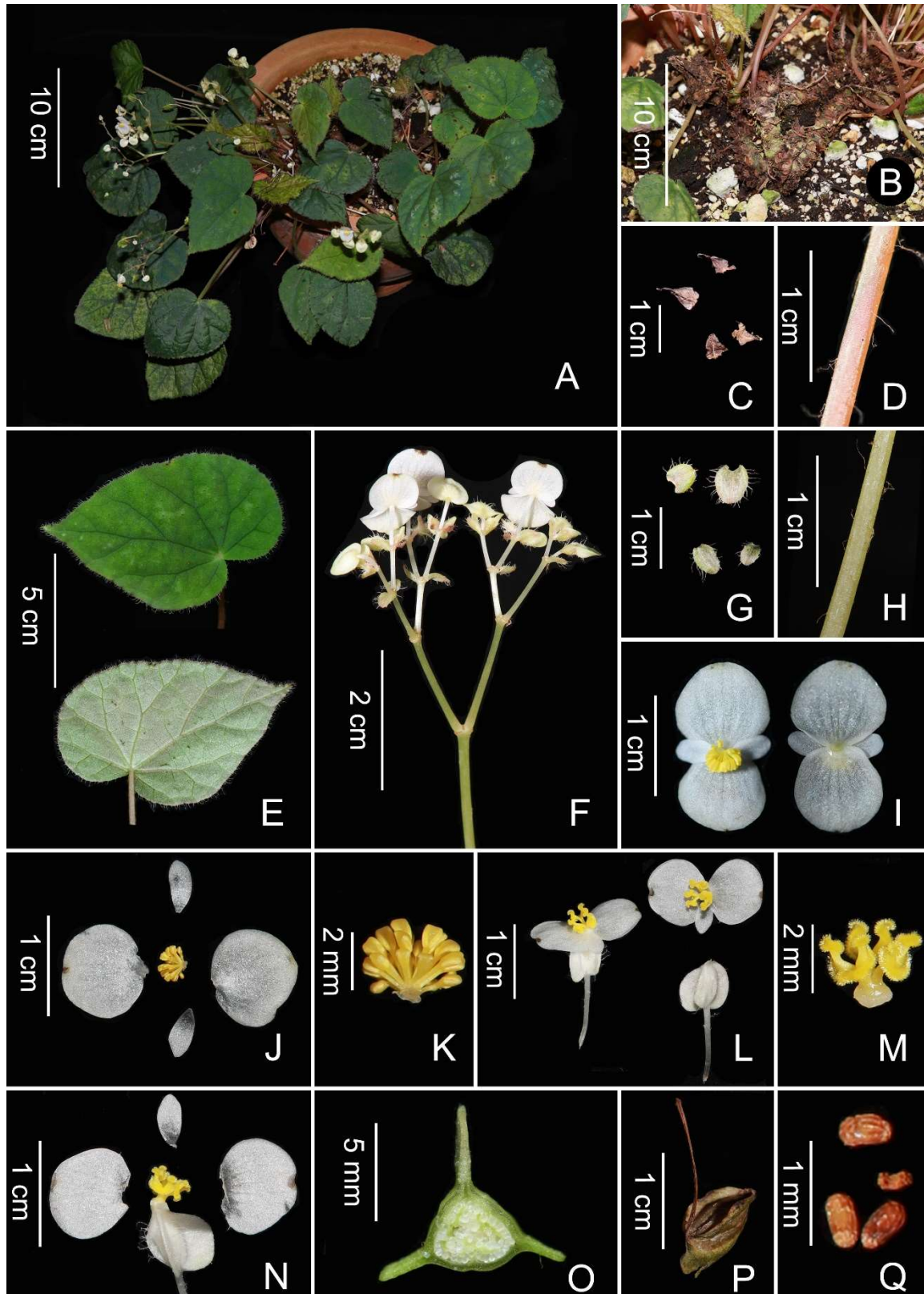


Fig. 1. Illustration of *Begonia pingxiangensis* W.G. Wang, F.Y. Nong & H.C. Xi. **A.** Cultivated plant. **B.** Rhizome. **C.** Stipules. **D.** Part of petiole. **E.** Leaf blade, adaxial and abaxial. **F.** Inflorescence. **G.** Bracts. **H.** Part of peduncle. **I.** Staminate flower, adaxial view and abaxial view. **J.** Dissected corolla of staminate flower. **K.** Androecium. **L.** Pistillate flower, different views. **M.** Pistil. **N.** Dissected corolla of pistillate flower. **O.** Dissected ovary, showing parietal placentation. **P.** Capsule. **Q.** Seeds.

**Table 1.** Morphological comparison between *Begonia pingxiangensis* and *B. daxinensis*.

Characters	<i>Begonia pingxiangensis</i>	<i>Begonia daxinensis</i>
Leaf color	adaxially green to dark green, sometimes with grey green patches or dots between veins	adaxially green, with a whitish ring-shaped belt
Leaf shape	ovate to broadly ovate	obliquely ovate to suborbicular
Leaf size	4–8 × 3–7 cm	10–24 × 10–17 cm
Leaf indumentum	adaxially sparsely hispid, abaxially villous on veins	adaxially glabrous, abaxially subglabrous or scaberulous
Flower color	white	white or pinkish
Staminate flower	outer two 5–8 × 6–10 mm; inner two ca. 3–4 × 2 mm	outer two 12–19 × 10–16 mm; inner two 12–14 × 4–5 mm
Pistillate flower size	outer two tepals 7–8 × 8–10 mm; inner one ca. 3–4 × 2 mm	outer two tepals 10–15 × 10–12 mm; inner one 5–7.5 × 2–5 mm

tertiary veins weakly percurrent or reticulate. Inflorescence axillary, bisexual, 12–20 cm long, 7–20-flowered; peduncles 9–16 cm long, 1.5–2 mm in diameter, light green to red, subglabrous. Bracts ovate to subrotund, 4–6 × 3–5 mm, margin fimbriate. Staminate flower: pedicel 7–11 mm long, white, subglabrous; corolla 1.2–1.6 × 0.8–1.1 cm; tepals 4, white; outer 2 broadly ovate to subrotund, 5–8 × 6–10 mm, adaxially glabrous, abaxially sparsely villous; inner 2 oblong to narrowly oblong, 3–4 × ca. 2 mm, glabrous; androecium zygomorphic, ca. 3 mm long, 3–4 mm in diameter; stamens 20–37; filaments ca. 1 mm long, free; anthers obovate, ca. 0.8 mm long, yellow, apex emarginate. Pistillate flower: pedicel 8–10 mm long, white, subglabrous; corolla 1.4–1.7 × 0.9–1.1 cm; tepals 3, white; outer 2 broadly ovate to suborbicular, 7–8 × 8–10 mm, adaxially glabrous, abaxially sparsely villous; inner 1 oblong, 3–4 × ca. 2 mm wide, glabrous; styles 3, fused at base, 3 mm long; stigmas 2, spiraled, yellow; ovary 1 loculed, placentation parietal. Capsule nodding, sparsely villous to subglabrous, unequally 3-winged; abaxial wing 9–11 × 3–4 mm; lateral wings shorter, 8–10 × ca. 2 mm. Seeds numerous, ovate, ca. 0.5 × 0.3 mm, brown.

Etymology: The specific epithet “pingxiangensis” refers to the type locality in Pingxiang City, Guangxi Zhuang Autonomous Region, China. Chinese name is proposed here as “凭祥秋海棠” (凭祥-refer to Pingxiang, 秋海棠-refer to *Begonia*).

Phenology: Flowering June - August.

Distribution and Habitat: The new species is endemic to Guangxi, China, and currently only known from Puzhai Community, Youyi Town, Pingxiang City. The plants grow on rock surface under the forest of karst mountains at an elevation of 320 m.

Conservation assessment: Endangered (EN) (B1B2aD) based on the IUCN Red List Categories and Criteria ((IUCN Standards and Petitions Committee, 2024). *Begonia pingxiangensis* is only known from the type locality with 5 small subpopulations of less than 60 mature individuals in nearly 2 km². However, further investigation is necessary on its actual distribution area and the number of populations and individuals.

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