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

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ABSTRACT: *Begonia lucivenia*, a new species of *Begonia* sect. *Coelocentrum* from Guangxi, China, is described and illustrated. It resembles *B. zhuoyuniae* but can be distinguished by its rhizome and internodes length, stipules size, petiole length and leaf blade size and indumentum. It also resembles *B. porteri* but differs in leaf blade shape, color and indumentum, and flower color. Detailed description is provided.

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

INTRODUCTION

Begonia L. (Begoniaceae), encompasses 2198 species distributed in tropical and subtropical areas worldwide (Hughes *et al*., 2015–). In china, the number of species of *Begonia* has rapidly increased to 304 (including subspecies, varieties and natural hybrid species) during recent years, from 173 species recorded in Flora of China (Gu *et al*., 2007; iBegonia, 2024; Guan *et al.*, 2025; Hu *et al.*, 2025; Tian *et al.*, 2025; Wang *et al.*, 2025a,b; Xi *et al*., 2025; Zhou *et al*., 2025). The karst region of Guangxi is one of the distribution centers of *Begonia* in China and 103 species have been recognized in Guangxi (iBegonia 2024; Guan *et al*., 2025; Hu *et al*., 2025; Wang *et al*., 2025b; Xi *et al*., 2025; Zhou *et al*., 2025).

Begonia sect. *Coelocentrum* Irmscher, comprises 102 species distributed in the karst regions of southern China and northern Vietnam (Hughes *et al*., 2015–). In Guangxi, nearly two thirds (65 species) of *Begonia* species belong to this section (iBegonia 2024; Guan *et al.*, 2025; Wang *et al.*, 2025b; Xi *et al.*, 2025; Zhou *et al.*, 2025). Most species of the section are characterized by a rhizomatous habit, staminate flowers with (2)4 tepals, pistillate flowers with (2)3 tepals, ovary 1-locular and placentation parietal (Doorenbos *et al.*, 1998; Shui *et al.*, 2002, 2019; Gu *et al.*, 2007; Chung *et al.*, 2014).

During a field survey of karst areas of western Guangxi, China in November 2024, an unknown *Begonia* species belonging to Sect. *Coelocentrum* was collected on a limestone mountain in Bama County. After specimens examination and literature review of similar species of *B.* sect. *Coelocentrum*, we drew the conclusion that it represents a potential new taxon, and described and illustrated it below.

TAXONOMIC TREATMENT

Begonia lucivenia W.G.Wang, R.K.Li & H.C.Xi, ***sp. nov.*** **顯脈秋海棠 Figs. 1 & 2**

sect. *Coelocentrum*

***Type*: China**, Guangxi Zhuang Autonomous Region, Bama County, Xishan Township, near Powang Tiankeng, on rock surface by the roadside, 24°19′54.87″N, 107°11′59.25″E, elev. 724 m, 28 Nov. 2024, *Ren-Kun LI, Xiao-Jing WANG & Han LAI, KQ2284* (holotype: HITBC0134647!; isotype: HITBC!).

***Diagnosis*:** The new species differs from the most similar species *Begonia zhuoyuniae* (Liu *et al*., 2020) in rhizome and internodes not elongated, stipules larger, petioles longer, leaf blade larger and adaxially more densely villous.

***Description*:** Herbs perennial, rhizomatous, to 18 cm tall. **Rhizome** creeping, dark red, 7–11 cm long, 5–7 mm in diameter, internodes *ca*. 5 mm long, aerial stem absent. **Leaves** basal. **Stipules** red, ovate-triangular, *ca*. 11 mm long, 7 mm wide, adaxially glabrous, abaxially sparsely villous to subglabrous, awn at apex, 1.5–2.5 mm long, margin subentire. **Petiole** red, cylindrical, 2.5–9 cm long, 2–3 mm in diameter, densely white villous. **Leaf blade** asymmetric, broadly reniform, 4–8.6 × 3.3–6.6 cm; adaxially dark green (sometimes tinged with reddish tint) between primary and secondary veins, light green along primary and secondary veins, moderately densely white villous, sometimes mixed with sparsely to densely white tomentose, abaxially sparsely to densely white tomentose between veins, densely red villous on veins; venation palmate, primary veins 5–7; base cordate, often slightly overlapped, apex obtuse to almost round; margin subentire, ciliate. **Cymes** basal, dichasial, 4–17-flowered, 10–17 cm long, branched 2–4 times; peduncles red to

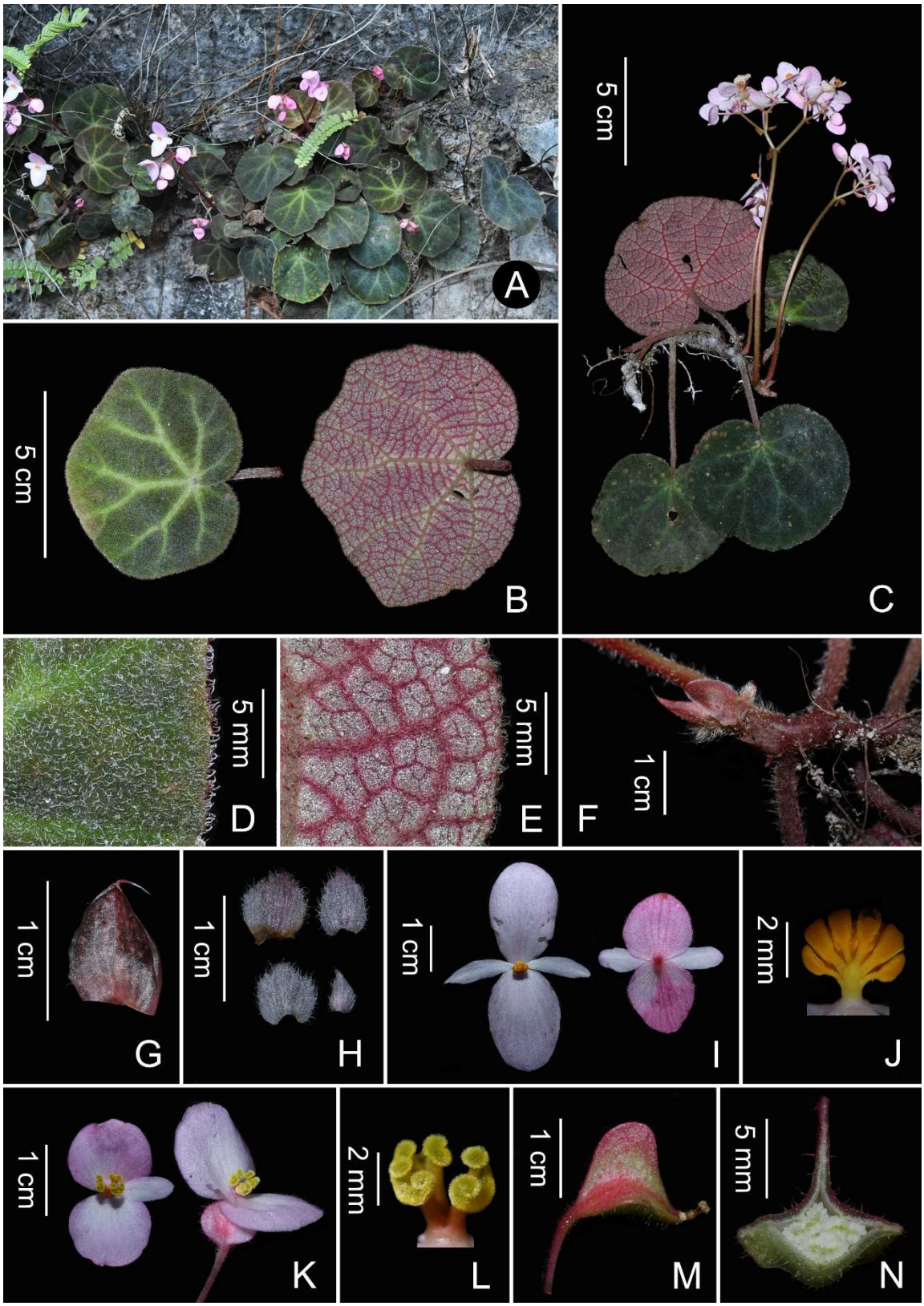

Fig. 1. Illustration of ***Begonia lucivenia*** W.G. Wang, R.K. Li & H.C. Xi. **A.** Habitat. **B.** Leaf blade, adaxial and abaxial view. **C.** Plant. **D–E.** Adaxial and abaxial leaf surfaces showing indumentum. **F.** Rhizome, stipules and part of petioles. **G.** Stipule. **H.** Bracts. **I.** Staminate flower, adaxial and abaxial view. **J.** Androecium. **K.** Pistillate flower, front and side view. **L.** Pistil. **M.** Immature capsule. **N.** Dissected ovary, showing parietal placentation.

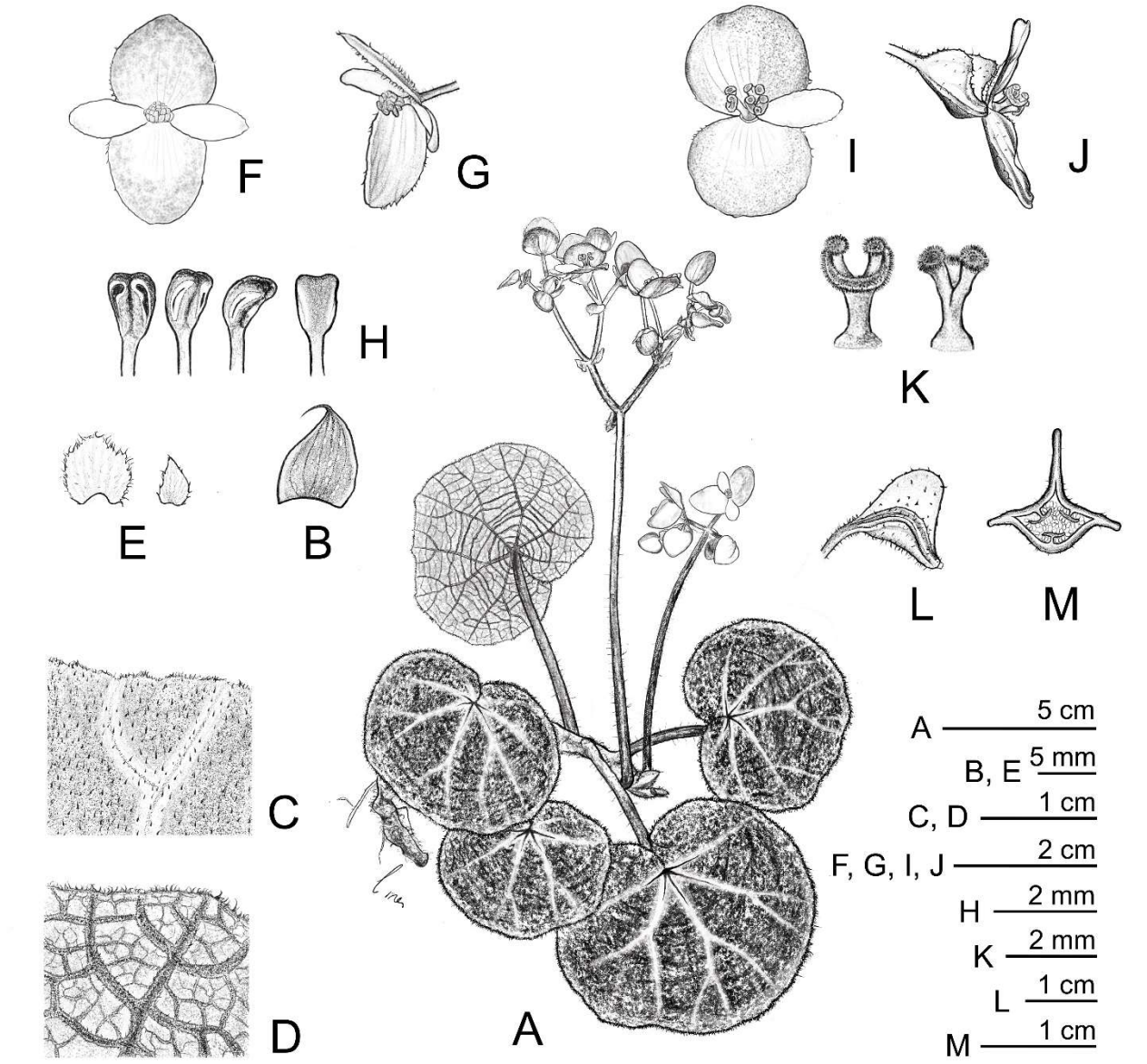

Fig. 2. Line drawing of ***Begonia lucivenia***. **A.** Plant. **B.** Stipule. **C–D.** Adaxial and abaxial leaf surfaces showing indumentum. **E.** Bracts. **F–G.** Staminate flowers, adaxial and side view. **H.** Stamens, different views. **I–J.** Pistillate flower, adaxial and side view. **K.** Styles and stigmas. **L.** capsule. **M.** Dissected ovary, showing parietal placentation. (Drawn by Yong-Cheng Hu)

light green, 8–13 cm long, 2–3 mm in diameter, villous. **Bracts** pink, pinkish-white to white, ovate to broadly ovate, 4–6 × 2–6 mm, abaxially villous to subglabrous, margin ciliate. **Staminate flower**: pedicel pinkish-white to pink, 5–8 mm long, *ca*. 1 mm in diameter, villous; flower size 22–44 × 17–33 mm; tepals 4; outer 2 pinkish-white to pink, ovate, broadly ovate to suborbicular, 11–22 × 10–16 mm, adaxially glabrous, abaxially white villous to subglabrous, margin ciliate to subentire; inner 2 white to pinkish-white, narrowly obovate, oblong to lanceolate, 8–16 × 2–5 mm, glabrous, margin entire; androecium zygomorphic, 3–4 mm long, 3.5–4.5 mm in diameter; stamens 18–21; filaments 1–1.5 mm long, fused on a short stalk, stalk *ca*. 1 mm long; anthers obovoid, 1–1.5 mm long, apex emarginate. **Pistillate flower**: pedicel light green to pink, 6–12 mm long, *ca*. 1 mm in diameter, villous; flower size 20–28 × 11–12 mm; tepals 3; outer 2 pinkish-white to pink, broadly ovate to suborbicular, 10–14 × 11–12 mm, adaxially glabrous, abaxially white villous to subglabrous, margin ciliate to subentire; inner 1 white to pinkish-white, oblong to narrowly obovate, *ca*. 5 × 2.5 mm, glabrous, margin entire; pistil *ca*. 4 mm long, *ca*. 4 mm in diameter; styles 3, fused at base; stigmas spiraled; ovary pinkish-white, villous, 1-loculed, placentation parietal. **Capsule** nodding, light green, tinged with red tint, *ca*. 1.3 cm long, villous, unequally 3-winged; abaxial wing *ca*. 7 mm high; lateral wings shorter, ca. 1.5 mm high.

Table 1. Morphological comparison of ***Begonia lucivenia, B. zhuoyuniae*** and ***B. porter***.

Characters	***Begonia lucivenia***	***Begonia zhuoyuniae***	***Begonia porteri***
Rhizome	7–11 cm long, internodes *ca*. 5 mm long	elongated to 80 cm long, internodes 5–25 mm long	somewhat elongated, internodes 8–17 mm long
Stipules	11 × 7 mm	5 × 5 mm	
Petiole	2.5–9 cm long	1.5–4.5 cm long	3.5–15 cm long
Leaf shape	broadly reniform	ovate to reniform	obliquely ovate, broadly ovate, or suborbicular
Leaf size	4–8.6 × 3.3–6.6 cm	2.5–5 (–6.5) × 2–4 (–5.5) cm	3–13 × 2–11 cm
Leaf color	adaxially light green along veins, dark green (sometimes tinged with reddish tint) between veins; abaxially red on veins, white between veins	adaxially pale green or dark green with purple red between veins; abaxially red on veins and somewhat reddish	adaxially green or brownish-green; abaxially pale green or reddish
Leaf indumentum	adaxially moderately densely white villous; abaxially sparsely to densely white tomentose between veins, densely red villous on veins	adaxially sparsely hirtellous and punctate, abaxially densely pilose to tomentose	adaxially moderately densely setulose; abaxially white pilose-tomentose to sparsely villous
Flower color	pinkish-white to pink	pink	white, sometimes tinged with pinkish tint

***Etymology*:** The specific epithet "*lucivenia*" refers to the bright and clearly visible color of the primary and secondary veins of leaf blade. Chinese name is proposed here as "顯脈秋海棠".

***Phenology*:** *Begonia lucivenia* was observed flowering in November to December.

***Distribution and Habitat*:** *Begonia lucivenia* is currently known only from the type locality and found growing on rock surface by the roadside on a limestone mountain at an elevation of *ca*. 700 m a.s.l.

***Conservation assessment*:** Only one population with less than 100 mature individuals of *Begonia lucivenia* has been found to date. The extent of occurrence (EOO) is less than 100 km^2 and the area of occupancy (AOO) is less than 10 km^2. Therefore, the level of threats of the new species could be assessed as "Critically Endangered" (CR, B1B2ab(iii,v)C2a(ii)) based on the IUCN Red List Categories and Criteria (IUCN Standards and Petitions Committee, 2024).

***Notes*:** The new species is most morphologically similar to *Begonia zhuoyuniae* in leaf blade shape and color, but can be distinguished by its rhizome length (7–11 cm *vs*. elongated to 80 cm), internodes length (*ca*. 5 mm long *vs*. 5–25 mm long), stipules size (11 × 7 mm *vs*. 5 × 5 mm), petiole length (2.5–9 cm *vs*. 1.5–4.5 cm), leaf blade size (4–8.6 × 3.3–6.6 cm *vs*. 2.5–5 (–6.5) × 2–4 (–5.5) cm) and indumentum adaxially (moderately densely villous *vs*. sparsely hirtellous and punctate). *Begonia lucivenia* also resembles *B. porteri* (Léveillé, 1910) but differs from it in leaf blade shape (broadly reniform vs. obliquely ovate, broadly ovate, or suborbicular), color (adaxially light green along veins, dark green (sometimes tinged with reddish tint) between veins; abaxially red on veins, white between veins *vs*. adaxially green or brownish-green; abaxially pale green or reddish) and indumentum abaxially (sparsely to densely white tomentose between veins, densely red villous on veins *vs*. white pilose-tomentose to sparsely villous), and flower color (pinkish-white to pink *vs*. white, sometimes tinged with pinkish tint). A detailed morphological comparison of these three species is presented in Table 1.

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