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Primulina gigantea (Gesneriaceae), a new species from Guangxi, China

Wen-Hua Luo¹, Bo Pan¹ & Fang Wen^{1,2,*}

¹ Guilin Botanical Garden, Guangxi Institute of Botany, Guangxi Zhuangzu Autonomous Region and the Chinese Academy of Sciences, CN-541006 Guilin, China

² Gesneriad Conservation Center of China (GCCC), Guangxi Key Laboratory of Plant Conservation and Restoration Ecology in Karst Terrain, Guangxi Institute of Botany, Guangxi Zhuangzu Autonomous Region and the Chinese Academy of Sciences, CN-541006 Guilin, China (*corresponding author's e-mail: wenfang760608@139.com)

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Luo W.H., Pan B. & Wen F. 2016: *Primulina gigantea* (Gesneriaceae), a new species from Guangxi, China. — *Ann. Bot. Fennici* 53: 426–430.

A new species of Gesneriaceae, *Primulina gigantea* F. Wen, B. Pan & W.H. Luo from Guanyang County, Guangxi Zhuang Autonomous Region, China, is described and illustrated. It is known from fewer than one hundred mature individuals so it appears to be endangered. *Primulina gigantea* is compared with the morphologically close *P. lungzhouensis* and *P. roseoalba*.

Primulina (Gesneriaceae) was traditionally considered a monotypic genus containing just *P. tabacum* in the subfamily Cyrtandroideae (Wang *et al.* 1990, Wang *et al.* 1998, Li & Wang 2004). A few years ago it was redefined and expanded to include around 130 species, all of *Chirita* sect. *Gibbosaccus* and *Chiritopsis*, and two species of *Wentsaiboea* (Li & Wang 2007, Wang *et al.* 2011, Weber *et al.* 2011, Weber *et al.* 2013). Recent studies have increased the number of species to around 170 (Möller *et al.* 2016).

In July 2013, during a field survey of the limestone flora of Guangxi in Guanyang County, Guangxi Zhuangzu Autonomous Region, one of the authors (BP) collected a flowering specimen of an unknown *Primulina* species. Especially the extraordinary size of the plants caught the attention. The leaves are up to ca. 40 cm long and 30 cm wide, while those of the hitherto largest described species are much smaller (e.g. *P. alutacea* 27 × 18 cm, *P. flavimaculata* 26 ×

14 cm, *P. liguliformis* 20 × 10 cm, *P. swinglei* 19 × 17 cm, *P. versicolor* 18 × 16.5 cm, *P. lungzhouensis* 18 × 10 cm, *P. brassicoides* 15.5 × 14 cm, *P. lunghinensis* 12 × 11.5 cm, *P. guihaiensis* 11 × 8.5 cm) (Wang 1981, 1984, 1985, Wang *et al.* 1990, 1998, Wei *et al.* 2007, 2010, Weber *et al.* 2011, Pan *et al.* 2016). By comparison with herbarium specimens, living plants and literature (Wang *et al.* 1990, 1998, Pham-Hoang 2000, Li & Wang 2004, Wei *et al.* 2010, Weber *et al.* 2011, Möller *et al.* 2016) of *Primulina* species occurring in China and adjacent regions in north Vietnam, we concluded that we had an undescribed species at hand.

***Primulina gigantea* F. Wen, B. Pan & W.H. Luo, *sp. nova* (Figs. 1 and 2)**

TYPE: China. Guangxi Zhuangzu Autonomous Region: Wenshi town, Guanyang County, growing in moss and tufa on limestone cliff, in broad-leaved forests, 25°42'38.60"N,

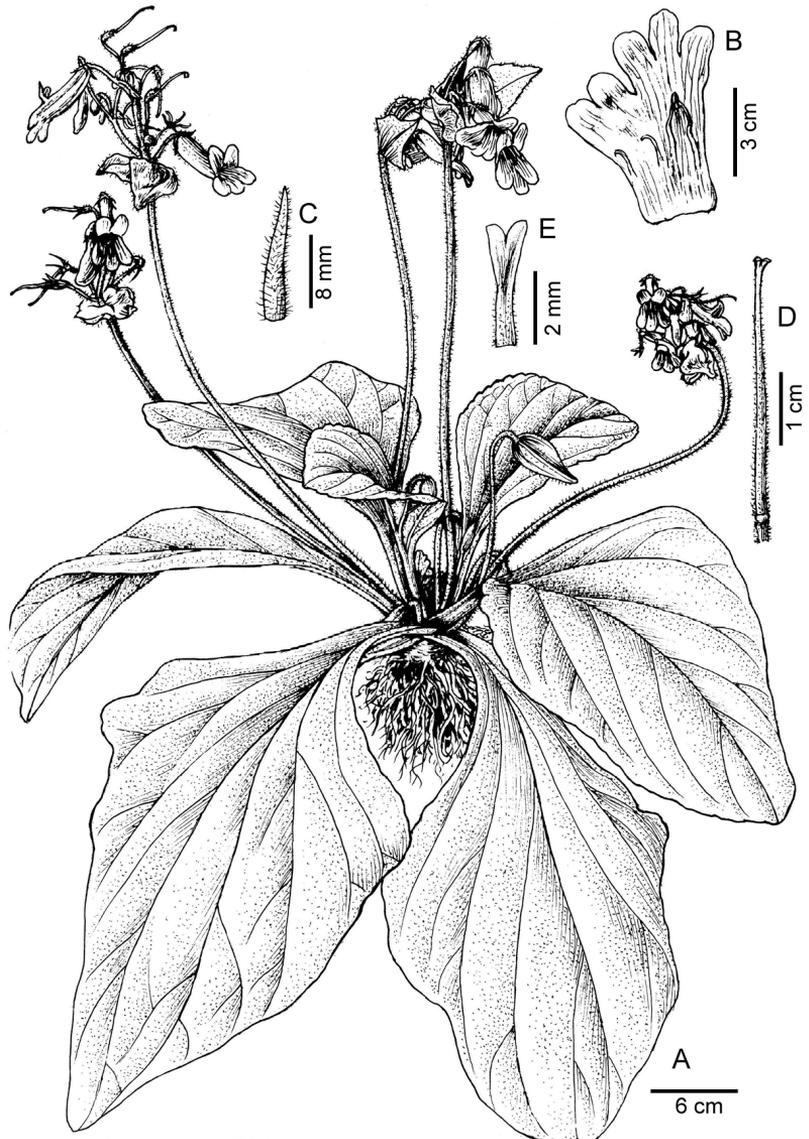


Fig. 1. *Primulina gigantea* (from the holotype). — **A:** Habit in flowering. — **B:** Cut-open flower showing stamens and staminodes. — **C:** Adaxial surface of calyx lobe. — **D:** Pistil: disc, ovary, style, stigma. — **E:** Stigma lobes.

111°11'26.64"E, alt. 220 m a.s.l., 8 July 2013 *Bo Pan et al.* BP 130708-01 (holotype IBK; isotype IBK). — **PARATYPES:** Same locality, 31 July 2014 *Bo Pan et al.* BP140731-01 (IBK).

ETYMOLOGY: The species epithet is derived from the remarkably large leaves and the plant itself.

Perennials. Rhizomes subterete, 2–5 cm long, 2.51–5 cm in diameter. Leaves 4–10, basal; petiole flattened, 8–10 cm long, 2–2.5 cm wide, purplish red pubescent; blade fleshy, when dry leathery, nearly symmetric or symmetric, ovate-oblong, elliptic to nearly rhombic, 25–40 cm long, 16–30 cm wide, sparsely strigose on both sur-

faces, base broadly cuneate, margin crenate, apex obtuse to rounded; lateral veins 4–5 on each side of mid-vein, inconspicuously sunken on adaxial surface, and conspicuously raised on abaxial surface. Cymes 2–5, axillary, 1(–2)-branched, 2–8-flowered; peduncle 30–40 cm long, ca. 3 mm in diam., densely eglandular-pubescent, hairs erect and purple; bracts 2, opposite, lanceolate, ca. 5 cm long, ca. 2 cm wide, margin entire to slightly serrate, apex acute, abaxial surface puberulent, adaxial surface glabrous; pedicel 1.5–2.5 cm long, densely eglandular pubescent. Calyx 5-partite to near base; lobes lanceolate, 1–1.5 cm

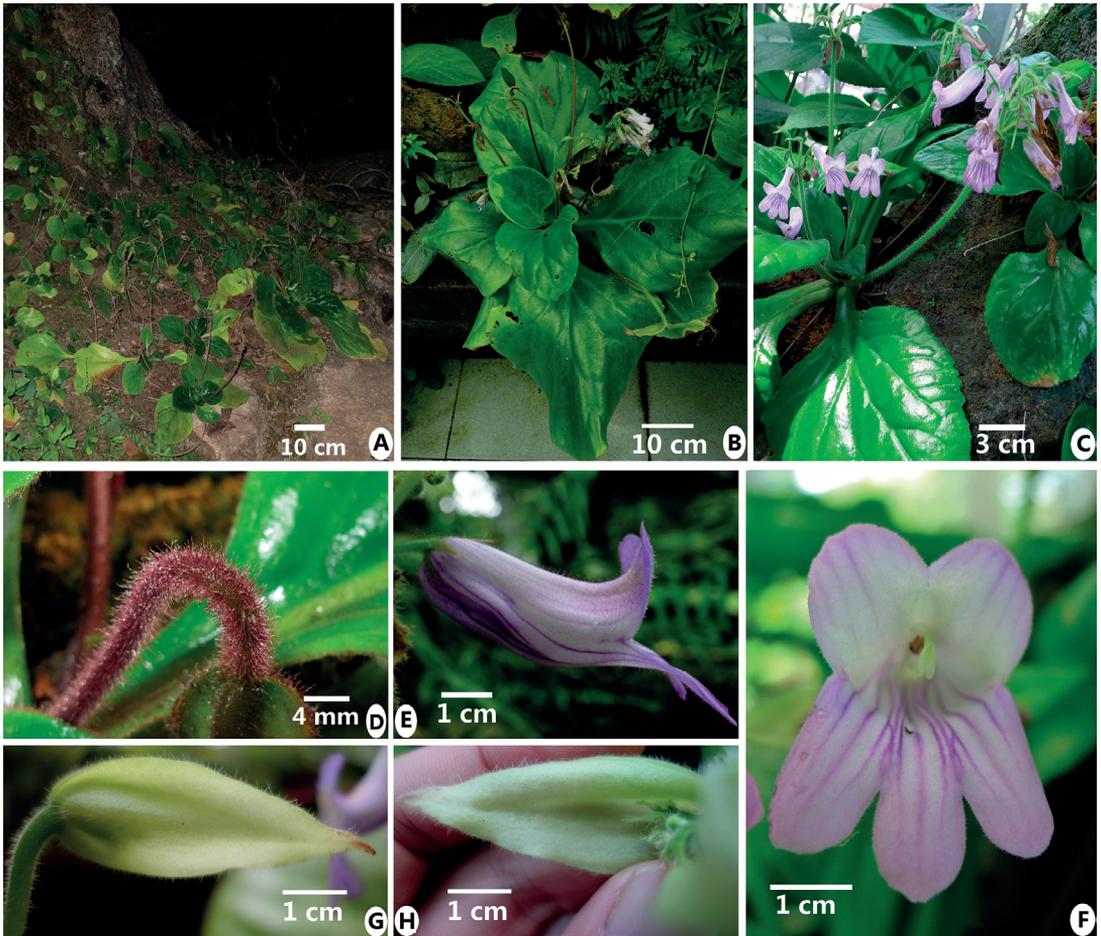


Fig. 2. *Primulina gigantea*. — **A:** Habitat. — **B:** Plant flowering. — **C:** Cymes and flowers. — **D:** Peduncle. — **E:** Lateral view of corolla. — **F:** Frontal view of corolla. — **G:** Abaxial surface of bracts. — **H:** Adaxial surface of bracts.

long, 3–4 mm wide at base, margin entire, apex acuminate, densely puberulent on both surfaces. Corolla pinkish purple, outer surface pale pink to pinkish white, inner surface with dark purple stripes, ca. 7 cm long, outer surface purplish red pubescent, hairs glandular, inner surface glabrous; corolla tube narrowly infundibuliform, ca. 2.5 cm long, upper side narrower than lower side, proximal part laterally flattened, with a prominent keel on lower side from middle to base; limb distinctly 2-lipped, pale purple; lower lip 3-lobed at least to middle of lip, lobes oblong, apex rounded, 7–9 mm long, ca. 1 cm wide at base; upper lip 2-partite at least to middle of lip, lobes ovate, 6–7 mm long, 6.5–7.5 mm wide at base, with a brownish yellow spot between lobes, surface of spot glandular-pubescent; stamens 2, adnate to

corolla tube on lower ca. 12 mm from corolla base; filaments linear, purple, ca. 12 mm long, geniculate at middle, sparsely pubescent; anthers coherent, elliptic to reniform, ca. 4.5 mm long, ca. 2 mm wide, dorsifixed, glabrous; staminodes 3, lateral two ca. 6 mm long, slightly curved, apex capitate, glabrous, adnate to ca. 10 mm above base of corolla tube, central one ca. 0.7 mm long, usually curly, apex capitate, glabrous, adnate to near base of corolla tube. Disc annular, ca. 1 mm high, margin dentate, glabrous. Pistil 3.5–4 cm long, densely pubescent from ovary to style, hairs eglandular and glandular, ovary linear, ca. 2.3 mm long, ca. 1.5 mm in diam.; stigma obtrapeziform, ca. 2 mm long, 1–1.5 mm wide, apex 2-lobed. Fruits and seeds not seen. Flowering from July to September.

Table 1. Morphological comparison of *Primulina gigantea*, *P. lungzhouensis* and *P. roseoalba*.

Characters	<i>P. gigantea</i>	<i>P. lungzhouensis</i>	<i>P. roseoalba</i>
Leaf blade			
size (cm)	25–40 × 16–30	8–18 × 4.5–10	6.8–12.5 × 4–8
margin	crenate	dentate or denticulate to serrate	crenulate to remotely dentate
apex	obtuse to rounded	acute	obtuse
indumentum	sparsely strigose on both surfaces	sparsely appressed puberulent, more densely so on margin and veins, eglandular	sparsely strigose, eglandular
Bracts			
shape	lanceolate	ovate	linear-lanceolate
margin	entire to slightly serrate	denticulate	entire
Pedicel			
length (mm)	15–25	6–11	10–25
indumentum	densely purplish red pubescent, hairs eglandular	densely puberulent, hairs glandular	puberulent, some hairs glandular
Corolla			
shape	upper side narrower than lower side, proximal part laterally flattened, with a prominent keel on lower side from middle to base	upper side not narrower than lower side	upper side not narrower than lower side, proximal part laterally flattened, with a prominent keel on lower side from middle to base
indumentum	outer surface purplish red pubescent, hairs glandular, inner surface glabrous	outer surface sparsely white puberulent, some hairs glandular, inner surface puberulent below upper lip and stamens	outer surface puberulent, inner surface of upper lip puberulent
Filaments	sparsely pubescent glandular	sparsely puberulent, hairs pubescent, apex sparsely puberulent with glandular hairs	base sparsely
Anthers	glabrous	puberulent	sparsely puberulent
Pistil	densely pubescent, hairs eglandular and glandular	densely puberulent	puberulent
Florescence	July to September	April to May	July

Primulina gigantea grows on rock surfaces at the foot of a limestone hill in a subtropical evergreen broad-leaved forest in Tongren village, Wenshi town, Guangxi Zhuangzu Autonomous Region, China, at an elevation of 440 m a.s.l. The average temperature in the locality is 18.2 °C, and the average annual precipitation is about 1299 mm. As we found fewer than 100 mature individuals, the species might be endangered but more data is needed to assess that reliably.

Morphologically *P. gigantea* resembles *P. lungzhouensis* and *P. roseoalba*, but there are clear differences (Table 1).

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