

Primulina huaijiensis (Gesneriaceae), a new species from Guangdong, China

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Primulina huaijiensis Z.L. Ning & J. Wang *sp. nova* (Gesneriaceae) from Guangdong, China is described and illustrated. It is similar to *P. renifolia*, but differs from *P. renifolia* in several morphological characters, both vegetative and reproductive as well as in having a different flowering period (October–December).

Recent molecular phylogenetic analyses have altered our concept of generic delimitations among Old World members of Gesneriaceae and have verified that the large genus, *Chirita*, is paraphyletic (Möller *et al.* 2011, Wang *et al.* 2011, Weber *et al.* 2011). Based on the phylogenetic analysis of ITS and *trnL*-F sequences, all species of *Chirita* section *Gibbosaccus*, *Chiritopsis* and *Wentsaiboea* were incorporated into *Primulina*, which previously had only one species, *P. tabacum* (Hance 1883, Wang 1990, Wang *et al.* 1998, Li & Wang 2004, Wei *et al.* 2010).

During investigations of living collections of Gesneriaceae in October 2011, we collected specimens of an unrecognized *Primulina* species in a limestone cave in northwest Guangdong, China. This unusual species has reniform leaf blades, obliquely campanulate and abaxially swollen corollas, and hipocrepiform stigmas. All of these characteristics are similar to *P. renifolia* (formerly *Wentsaiboea renifolia*). After consulting relevant literature (Wang *et al.* 1990,

1998, Fang *et al.* 2004, Li & Wang 2004, Wei *et al.* 2010, Liu *et al.* 2010, Wen *et al.* 2012) as well as herbarium specimens, we concluded that our specimens represented a new species of *Primulina*, which is described and illustrated here.

***Primulina huaijiensis* Z.L. Ning & J. Wang, *sp. nova* (Figs. 1 and 2)**

TYPE: China. Guangdong: Zhaoqing City, Huaiji county, 24°36'N, 112°02'E, on limestone rock face in a karst cave, 21 Oct. 2011 G. F. Li *et al.* HJ01 (holotype IBSC). — PARATYPE: Same locality, 21 Oct. 2011 G. F. Li *et al.* HJ02 (IBSC).

ETYMOLOGY: The specific epithet is derived from the name of the type locality, Huaiji County, Guangdong province, China.

Perennial herbs. Rhizome subterete, 1.5–2.5 cm long, ca. 1 cm in diameter. Leaves 5–20, all basal. Petiole 5–14 cm long, ca. 2–3 mm thick, pubescent. Leaf blade coriaceous, reni-

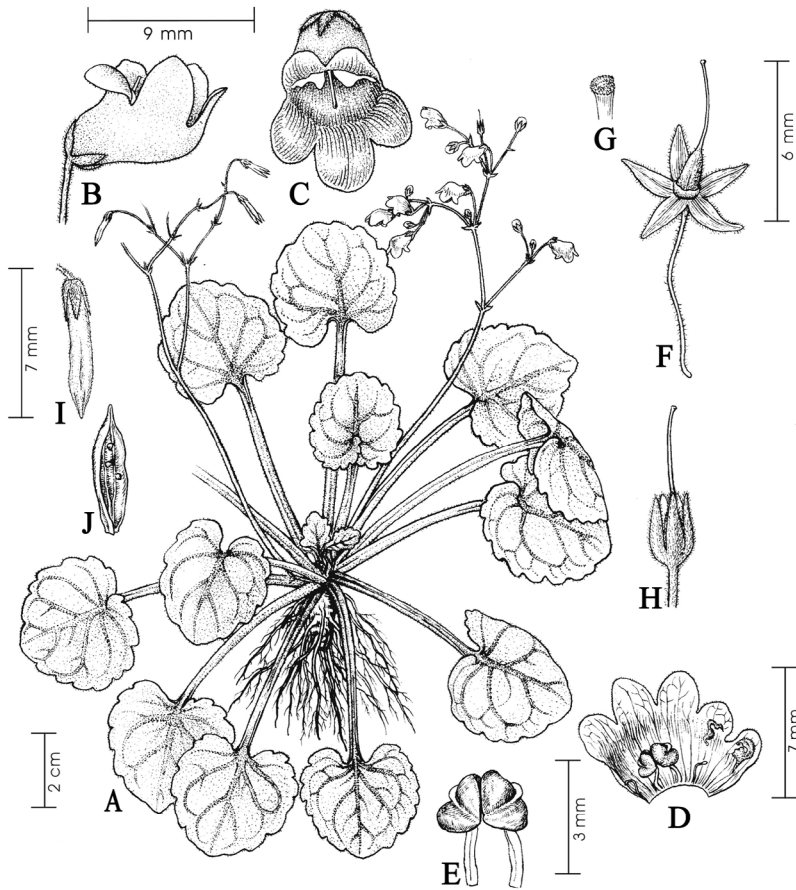


Fig. 1. *Primulina huaijiensis* (from the holotype, drawn by Yun-Xiao Liu). — **A:** Habit. — **B and C:** Corolla. — **D:** Corolla opened, with stamens and staminodes. — **E:** Stamens. — **F and H:** Calyx and pistil. — **G:** Stigma. — **I and J:** Capsule.

form, 2.5–4.0 × 2.8–4.5 cm, apex rounded or obtuse, base cordate or deeply cordate, margin crenate or repand, densely pubescent adaxially, glabrous abaxially, palmate veins 5–7, conspicuously prominent on both sides, silvery-white on the upper surfaces. Cymes 7–10, 1–3-branched, 3–15-flowered; peduncle 6–14 cm long, pubescent; bracts 2, opposite, linear or narrowly lanceolate, 2–3 × ca. 1 mm, margin entire, apex acute, pubescent. Pedicel 6–17 mm long, pubescent. Calyx 5-lobed nearly to the base, lobes linear-triangular, 1.5–2.0 × 0.4–0.6 mm, margin entire, glandular pubescent abaxially, sparsely glandular pubescent adaxially. Corolla white, obliquely campanulate, abaxially swollen, 7–9 mm long, sparsely glandular pubescent outside, glabrous inside; tube 4–6 mm long, orifice ca. 5.5 mm in diameter; adaxial lip distinctly 2-lobed, 1/6 to 1/5 of total corolla length, lobes sub-rounded, 1.2–1.8 × 1.5–2 mm, apex rounded, with sub-rounded lamellar appendages inside;

abaxial lip 3-lobed, 1/4 to 1/3 of total corolla length, lobes broadly ovate, apex rounded or obtuse, 2.0–2.5 × ca. 2.2 mm. Fertile stamens 2, adnate to near corolla tube base; filaments linear, ca. 2 mm long, arcuate, glabrous; anthers reniform, ca. 1 mm long, glabrous. Staminodes 2, glabrous, slightly enlarged at apex, adnate to near corolla tube base. Disc annular, ca. 0.3 mm in height, glabrous, margin repand. Pistil 4–5 mm long, ovary broadly ovoid, ca. 1.5 × 0.6 mm, glandular puberulent; style 2–3 mm long, glabrous; stigma hippocrepiform, ca. 0.5 mm. Capsule linear-oblong, 5–7 mm long, ca. 1.5 mm in diameter, pubescent when young. Flowering October–December, fruiting from November to January.

DISTRIBUTION AND HABITAT. *Primulina huaijiensis* is only known from the type locality in Huaiji county of northwest Guangdong, China. It grows mostly on wet rocks in limestone caves.

Primulina huaijiensis is similar to *P. renifolia*

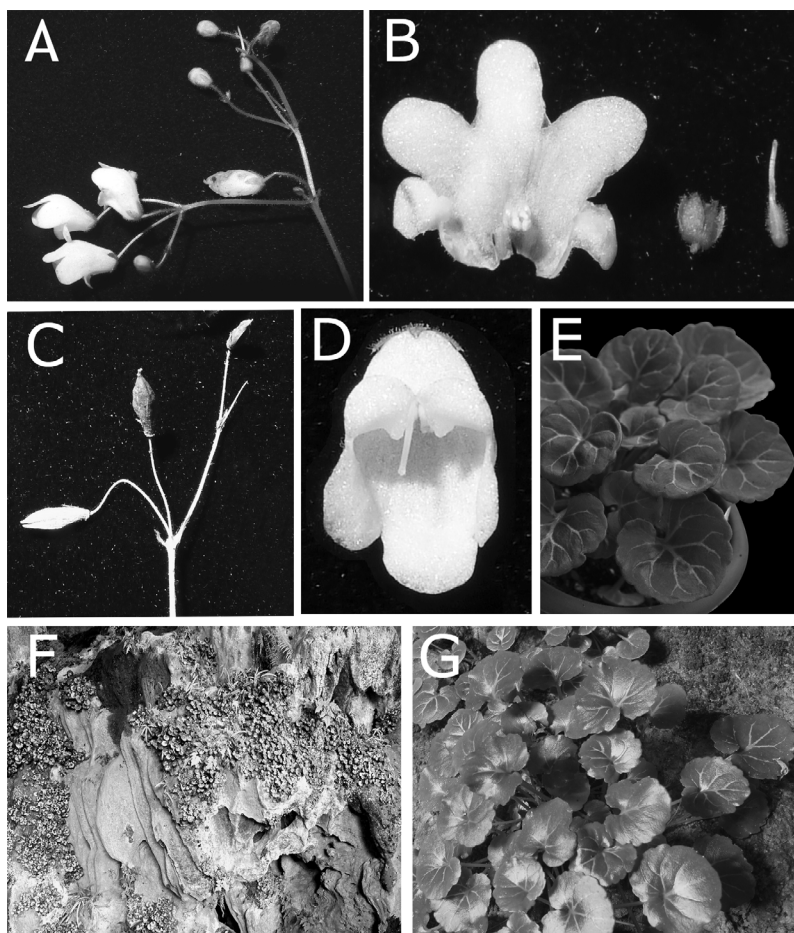


Fig. 2. *Primulina huaijiensis*. — **A:** Flowers. — **B:** Flower opened showing stamens. — **C:** Capsules. — **D:** Flower face view. — **E:** Plant. — **F and G:** Habit.

in its reniform, palmately nerved leaf blades and zygomorphic corollas that are obliquely campanu-

late and abaxially swollen. It is distinguished from *P. renifolia* by the characters given in Table 1.

Table 1. Morphological comparison of *Primulina huaijiensis* and *P. renifolia*.

Characters	<i>P. huaijiensis</i>	<i>P. renifolia</i>
Leaf blade	coriaceous, densely pubescent adaxially, glabrous abaxially	chartaceous, sub-glabrous on both sides
Leaf margin	crenate or repand	sub-entire, rarely repand
Leaf nerves	palmate veins 5–7, conspicuously prominent on both sides and silvery-white on the upper surfaces	palmate veins 3–5, inconspicuous on both sides, green
Corolla	corolla white, without purple longitudinal striae inside, lobes sub-rounded or broadly ovate, apex rounded or obtuse, adaxial lip 2-lobed with sub-rounded lamella appendages inside	tube white, with purple longitudinal striae inside, limb pale purple, lobes rounded, apex rounded, lobes without appendage inside
Stamens	adnate to near the corolla tube base	adnate to 0.25–0.5 mm above base of corolla tube
Ovary	broadly ovoid	narrowly ovoid
Flowering	October–December	April–May

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