
Chiritopsis jingxiensis, a New Species of Gesneriaceae from a Karst Cave in Guangxi, China

Wei-bin Xu and Yan Liu*

Guangxi Institute of Botany, Guangxi Zhuangzu Autonomous Region, and the Chinese Academy of Sciences, Yanshan, Guilin, Guangxi 541006, People's Republic of China.

*Author for correspondence: liu@gxib.cn

Hai-shan Gao

Enshi Vocational and Technical College, Enshi, Hubei 445000, People's Republic of China

ABSTRACT. *Chiritopsis* W. T. Wang (Gesneriaceae) is endemic to China, where the genus consists of 10 species and three varieties. In the course of our floristic investigation of karst caves in Guangxi in 2005, the new species *C. jingxiensis* Yan Liu, W. B. Xu & H. S. Gao was discovered in a karst cave from the Guangxi Zhuang Autonomous Region of China, and the new taxon is described and illustrated here. This new species is similar to *C. mollifolia* D. Fang & W. T. Wang in its leaf shape, corolla, and staminodes, but it can be distinguished by its smaller leaves, the lax, 1-branched cymes with one to three flowers, and the capsule that is twice as long as the calyx.

Key words: China, *Chiritopsis*, Gesneriaceae, Guangxi, IUCN Red List.

Chiritopsis W. T. Wang (Gesneriaceae) is an endemic genus of 10 species and three varieties found exclusively in China. The genus consists of the one species, *C. xiuningensis* X. L. Liu & X. H. Guo, distributed in Anhui Province; three species and one variety in Guangdong Province; and six species and two varieties in Guangxi Zhuang Autonomous Region. The karst region of Guangxi–Guangdong may be the center of distribution and diversification of *Chiritopsis*.

In the course of floristic investigation of karst caves in 2005, we discovered a rare plant in Jingxi County, southwestern Guangxi, China, identified as belonging to the genus of *Chiritopsis*. After consulting local and national floras and relevant literature (Wang, 1981, 1982, 1986, 1990, 1992; Liu & Guo, 1989; Fang et al., 1993; Wang et al., 1998; Li & Wang, 2004; Liu et al., 2006; Wen et al., 2008) as well as herbarium specimens, we determined the plant to represent a new species, which is described here.

Chiritopsis jingxiensis Yan Liu, W. B. Xu & H. S. Gao, sp. nov. TYPE: China. Guangxi Zhuang

Autonomous Region: Jingxi Co., on moist limestone rock face in karst cave, 17 Aug. 2005, Yan Liu, Wei-bin Xu & Hai-shan Gao L1260 (holotype, IBK; isotype, PE). Figure 1.

Haec species *Chiritopsi mollifoliae* D. Fang & W. T. Wang affinis, sed ab ea lamina foliari minore (1–2 × 0.5–1 vs. 2–4.8 × 2–4.5 cm) basi attenuata vel cuneata (vs. rotundata vel cordata), cymis semel ramosis (vs. bis terve ramosis), stigmatibus 2-lobulatis (vs. integro) atque capsula calyce 1-plo longiore (vs. subaequilonga) differt.

Herbs perennial, stemless; rhizome 5–15 × 3–4 mm diam. Leaves 7 to 17, basal, carnose, papery when dry; petiole flattened, 6–20 × 1–2 mm, villous; blades obovate or elliptic to suborbicular, 1–2 × 0.5–1 cm, villous, base attenuate to cuneate, margin subentire, apex obtuse to subrounded; lateral veins 2 or 3, inconspicuous. Cymes lax, 2 to 5 per rosette, axillary, 1-branched, each 1- to 3-flowered; peduncle 3–6 cm, pubescent; bracts 2, opposite, linear-lanceolate, 1–2 × 0.3–0.5 mm, margin entire, pubescent; pedicel 5–15 mm, pubescent. Calyx 5-lobed, dissected to near base, segments narrowly linear-lanceolate, 3–3.5 × 0.5–1 mm, apex acute, externally pubescent, internally sparsely puberulent, margins entire; corolla purplish, 10–13 mm, externally pubescent, internally sparsely puberulent; corolla tube ca. 9 × 4 mm; limb distinctly 2-lipped, white; adaxial lip ca. 2 mm, 2-parted to base, lobes 2.5–3 mm wide; abaxial lip 3–4 mm, 3-parted to near middle, lobes rounded-ovate, 3–3.5 mm wide; stamens 2, adnate to 2.5–3 mm above corolla base; filaments lanceolate-subulate, 3–4 mm, ± geniculate near middle, glabrous; staminodes 2, ca. 1.5 mm, glabrous, linear, apex capitate, adnate to 1.5–2 mm above corolla base. Disc annular, ca. 0.7 mm in height, glabrous; pistil ca. 8 mm, ovary narrowly ovoid, 2–3 × ca. 1 mm, puberulent; style 5–6 mm, puberulent; stigma obtuse-trapeziform, ca. 0.5 mm, 2-lobed. Capsule ellipsoidal, 6–8 × 1.5–2 mm, twice as long as calyx.

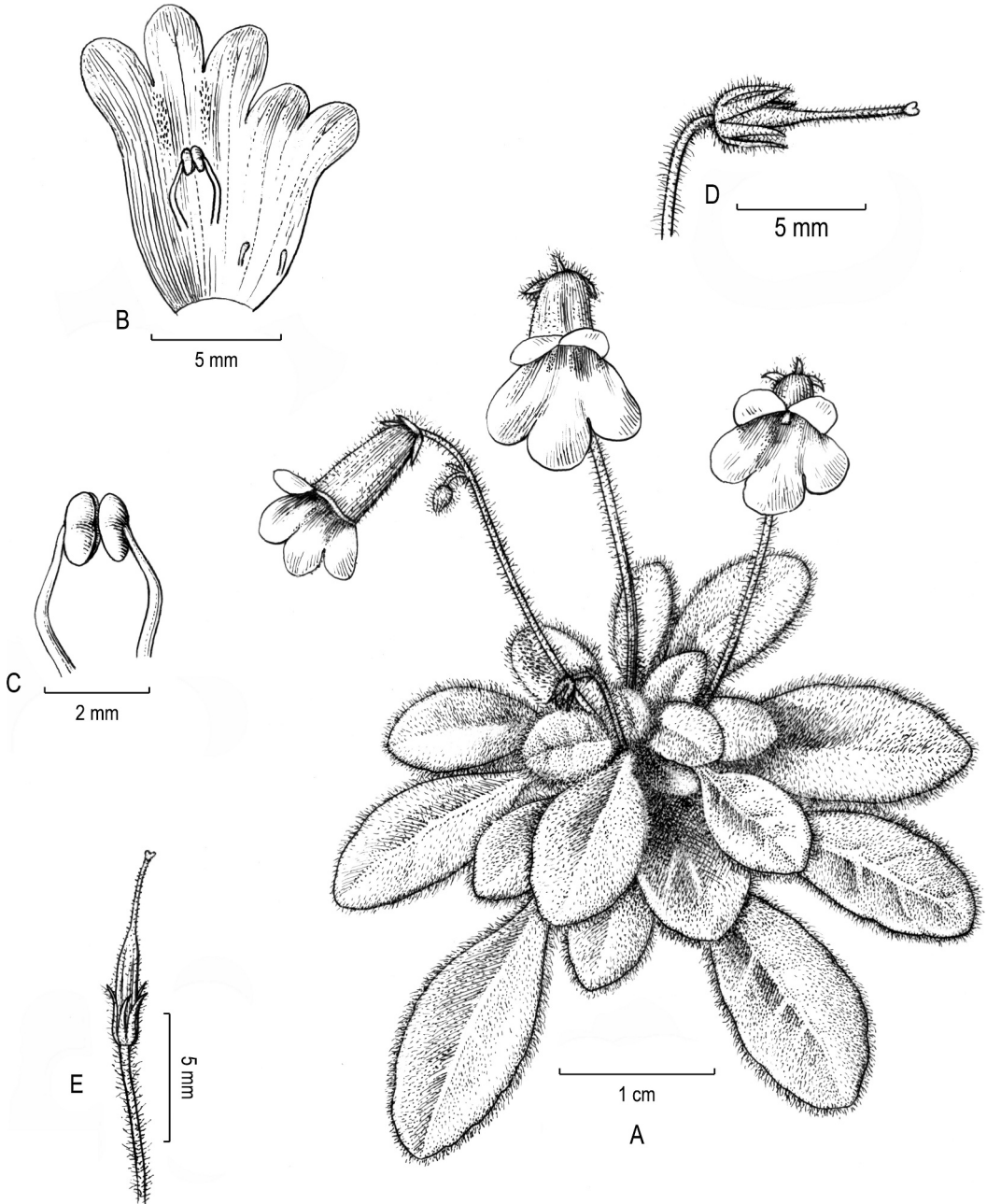


Figure 1. *Chiritopsis jingxiensis* Yan Liu, W. B. Xu & H. S. Gao. —A. Habit. —B. Corolla opened with stamens and staminodes. —C. Stamens. —D. Calyx and pistil. —E. Fruit. Drawn by S. Q. He from the holotype Yan Liu *et al.* L1260 (IBK).

Distribution and ecology. *Chiritopsis jingxiensis* is known only from one population on moist limestone rock face in a karst cave in Jingxi County, southwestern Guangxi, China, at ca. 900 m.

IUCN Red List category. The new species has an estimated population size of fewer than 250 mature

individuals and is known only from one site. We therefore assess *Chiritopsis jingxiensis* as Critically Endangered (CR) according to IUCN Red List criteria (IUCN, 2001).

Phenology. *Chiritopsis jingxiensis* has been collected in flower from July to September and in fruit from August to October.

Table 1. Morphological comparison of *Chiritopsis jingxiensis*, *C. mollifolia*, and *C. xiuningensis*.

	<i>C. jingxiensis</i>	<i>C. mollifolia</i>	<i>C. xiuningensis</i>
Leaf blade (cm)	1–2 × 0.5–1	2–4.8 × 2–4.5	2–9 × 1–6
Leaf base	attenuate to cuneate	rounded to cordate	widely cuneate, shallowly cordate to subrounded
Cymes	2 to 5, single-branched, with 1 to 3 flowers	cymes 4 to 10, 2- or 3-branched, with 7 to 20 flowers	cymes 1 to 7, 1- or 2-branched, with 2 to 10 flowers
Corolla limb	distinctly 2-lipped, with the adaxial lip ca. 2 mm, the abaxial lip ca. 3–4 mm	distinctly 2-lipped, with the adaxial lip ca. 2.2 mm, the abaxial lip ca. 3 mm	obscurely 2-lipped, with the adaxial lip ca. 3 mm, the abaxial lip ca. 2 mm
Staminodes	apex capitate	apex capitate	apex not capitate
Disc	annular	annular	2-lobed
Stigma	2-lobed	not divided	2-lobed
Capsules	twice as long as calyx	not exceeding calyx	not exceeding calyx

Etymology. The specific epithet commemorates Jingxi County, the type locality for the new species.

Relationships. *Chiritopsis jingxiensis* is similar to *C. mollifolia* D. Fang & W. T. Wang in its leaf shape, corolla, and staminodes, but it can be distinguished by its smaller leaves (1–2 × 0.5–1 cm vs. 2–4.8 × 2–4.5 cm), attenuate to cuneate leaf base (vs. rounded to cordate), cymes two to five, 1-branched, with one to three flowers (vs. cymes four to 10, 2- or 3-branched, with seven to 20 flowers), 2-lobed stigma (vs. not divided), and capsules that are twice as long as the calyx (vs. not exceeding calyx). Table 1 summarizes the morphological differences between *C. jingxiensis* and two similar species.

Paratypes. CHINA. **Guangxi Zhuang Autonomous Region:** Jingxi Co., 17 Aug. 2005, Yan Liu, Wei-bin Xu & Hai-shan Gao LI261 (MO), 19 Sep. 2006, Yan Liu & Wei-bin Xu LI380 (IBK).

Acknowledgments. We thank Fa-nan Wei (IBK) and Ching-I Peng (HAST) for their help in preparing the paper; we also thank Shun-qing He (IBK) for the handsome drawing. This study was supported by the Western Program for Fostering Personal Ability, Chinese Academy of Sciences (2007), to Yan Liu (IBK) and the Fundamental Research Fund of Guangxi Institute of Botany (GZY 09004) to Wei-bin Xu (IBK).

Literature Cited

- Fang, D., D. H. Qin & L. Zeng. 1993. New plants of Gesneriaceae from Guangxi of China. *Acta Phytotax. Sin.* 31: 470–471.
- IUCN. 2001. IUCN Red List Categories and Criteria, Version 3.1. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland, and Cambridge, United Kingdom.
- Li, Z. Y. & Y. Z. Wang. 2004. Plants of Gesneriaceae in China. Henan Science and Technology Publishing House, Zhengzhou.
- Liu, X. L. & X. H. Guo. 1989. A new species of *Chiritopsis* from Anhui. *Bull. Bot. Res.*, Harbin 9(3): 51–54.
- Liu, Y., Y. G. Wei & S. C. Tang. 2006. *Chiritopsis lingchuanensis* Yan Liu & Y. G. Wei, a new species of Gesneriaceae from Guangxi, China. *Acta Phytotax. Sin.* 44: 340–344.
- Wang, W. T. 1981. *Quinque genera nova gesneriacearum* E Sina. *Bull. Bot. Res.*, Harbin 1(3): 21–28.
- . 1982. *Notulae de Gesneriaceis Sinensibus*, IV. *Bull. Bot. Res.*, Harbin 2(4): 54–55.
- . 1986. *Notulae de Gesneriaceis Sinensibus*, VII. *Guihaia* 6: 6–11.
- . 1990. *Flora Reipublicae Popularis Sinicae*, Vol. 69. Science Press, Beijing.
- . 1992. *Notulae de Gesneriaceis Sinensibus*, X. *Guihaia* 12: 296–300.
- , K. Y. Pan, Z. Y. Li, A. L. Weitzman & L. E. Skog. 1998. Gesneriaceae. Pp. 345–348 in Z. H. Wu & P. H. Raven (editors), *Flora of China*, Vol. 18. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis.
- Wen, F., Q. X. Zhan & Y. Wang. 2008. A new variety of *Chiritopsis* (Gesneriaceae) from Guangxi, China—*Chiritopsis glandulosa* var. *yangshuoensis*. *Guihaia* 28(3): 290–291.