
Petrocosmea huanjiangensis, a New Species of Gesneriaceae from Limestone Areas in Guangxi, China

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ABSTRACT. A new species of Gesneriaceae, *Petrocosmea huanjiangensis* Yan Liu & W. B. Xu, is described and illustrated from northern Guangxi, China. The new species is related to *P. martini* (H. Lév.) H. Lév. but is distinguished on the basis of the peltate leaf blade, the densely lanate androecial filaments 6–7.2 mm long, the rostellate, cordate-ovoid anthers that are constricted near the apex, and the three staminodes, 2–3 mm long.

Key words: China, Gesneriaceae, Guangxi, IUCN Red List, limestone flora, *Petrocosmea*.

The genus *Petrocosmea* Oliv. (Gesneriaceae, Cyrtandroideae), with about 24 species and four varieties, is distributed in China (Wang et al., 1998), but only three species are known from Guangxi Province: *P. iodoides* Hemsl., *P. minor* Hemsl., and *P. martini* (H. Lév.) H. Lév. In the course of our floristic investigation of Huanjiang County in northern Guangxi, a rare plant of *Petrocosmea* was collected with a peltate leaf base, which differed from other known species. After comparison with all described species of *Petrocosmea* (Wang, 1985; Wang, 1990; Wang et al., 1998; Li & Wang, 2004; Wei & Wen, 2009), we confirm that the collection represents a new and fourth species from Guangxi, which is described below.

Petrocosmea huanjiangensis Yan Liu & W. B. Xu, sp. nov. TYPE: China. Guangxi Zhuang Autonomous Region: Huanjiang Co., on moist limestone rock face in forest of limestone hills, 3 June 2009, Yan Liu & Wei-bin Xu 09549 (holotype, IBK; isotype, PE). Figure 1.

Species *Petrocosmeae martini* (H. Lév.) H. Lév. similis, a qua foliis basi peltatis, filamentis 6–7.2 mm longis dense lanatis, antheris cordato-ovoideis apicem versus constrictis apice rostellatis atque staminodiis 3, 2–3 mm longis differt.

Herbs perennial; rhizome subterete, 5–6 × ca. 6 mm. Leaves 5 to 8, basal, long petiolate; petioles 2–6.5 cm, patently pilose; leaf blade herbaceous, ovate or broadly ovate to subrotund, 1.5–3.5 × 1.5–2.5 cm,

apex obtuse or rounded, margin crenate or repand, peltate with the petiole attaching 6–12 mm within the lamina, patently pilose on both sides, lateral veins adaxially impressed, abaxially conspicuous, 3 to 5 on each side. Cyme 1- to 3-flowered, peduncle 5–6.5 cm, patently pilose; bracts 2, opposite, linear or narrowly lanceolate, 2–4 × 0.5–1 mm, margin entire, apex acute, patently pilose; pedicel 4–12 mm, patently pilose. Calyx 5-lobed nearly to the base, lobes narrowly lanceolate, 4–6 × 1.5–2 mm, margin entire, outside patently pilose, inside glabrous; corolla blue, 1.3–2 cm, externally pubescent, internally glabrous; tube 5–7 × 6–8 mm (diam. at mouth), with 2 yellow stains inside; adaxial lip ca. 5 mm, inconspicuously 2-lobed; abaxial lip ca. 12 mm, 3-lobed to or above the middle, the middle lobe subrotund, lateral lobes broadly ovate; stamens 2, adnate to the corolla base; filaments 6–7.2 mm, linear, densely lanate; anthers cordate-ovoid, ca. 2.5 mm, glabrous, constricted near the apex, rostellate; staminodes 3, glabrous, adnate to 0.5 mm above corolla base, lateral staminodes ca. 3 mm, middle one ca. 2 mm; pistil 8–13 mm, ovary ca. 2.5–3.5 mm, densely puberulent; style 5–6.5 mm, puberulent; stigma capitate. Capsules not seen.

Distribution and ecology. The new species was found on moist rock faces within forests on limestone hills. It was collected only in Huanjiang County, from northern Guangxi Province, China, at ca. 750 m elevation.

IUCN Red List category. Current information shows that the population size of this new species is fewer than 250 mature individuals, and it is only known from one site. We therefore assess *Petrocosmea huanjiangensis* as Critically Endangered (CR) according to IUCN Red List categories and criteria (IUCN, 2001). Its distributional range is apparently narrow and the population size small; however, the type locality occurs within the Mulun National Natural Reserve and is therefore under protection.

Phenology. *Petrocosmea huanjiangensis* was observed in flower during May and June.

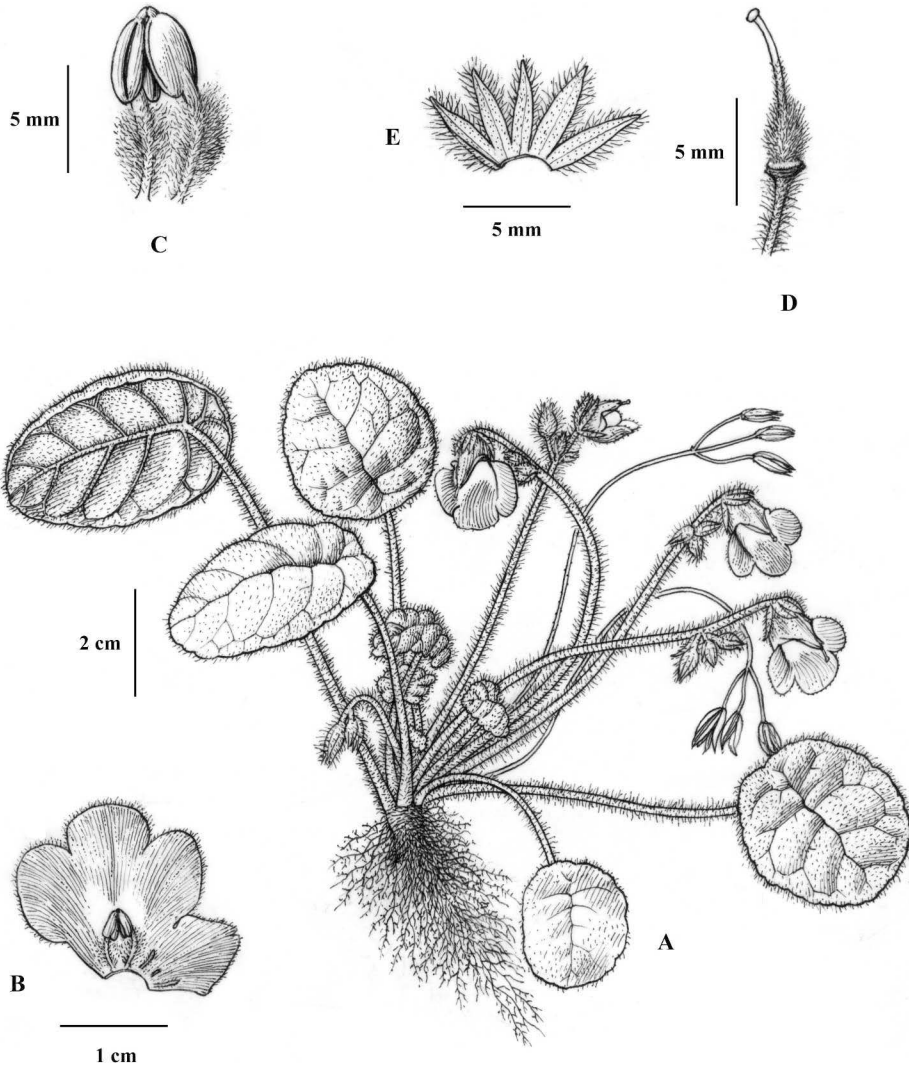


Figure 1. *Petrocosmea huanjiangensis* Yan Liu & W. B. Xu. —A. Habit. —B. Corolla dissected to reveal stamens and staminodes. —C. Stamens. —D. Pistil. —E. Calyx. Drawn by S. Q. He from the holotype Yan Liu & W. B. Xu 09549 (IBK).

Etymology. The epithet of the new species refers to the type locality of Huanjiang County.

Discussion. The most comprehensive revision of *Petrocosmea* was done by Wang (1985), who recognized three sections: section *Petrocosmea* Oliv., section *Anisochilus* Hemsl., and section *Deinanthera* W. T. Wang. *Petrocosmea huanjiangensis* belongs to section *Anisochilus*, series *Iodiodes* W. T. Wang. This new species is similar to *P. coerulea* C. Y. Wu ex W. T. Wang in its peltate leaf base, but *P. coerulea* is found in southeastern Yunnan. It is also similar to *P. martini*, which is found in central Guizhou, southeastern Yunnan, and western Guang-

xi. A morphological comparison of *P. huanjiangensis*, *P. martini*, and *P. coerulea* is provided in Table 1.

Paratypes. CHINA. **Guangxi Zhuang Autonomous Region:** Huanjiang Co., 3 June 2009, Yan Liu & Wei-bin Xu 09577 (IBK).

Acknowledgments. The authors are grateful to Fanan Wei (IBK) for the Latin diagnosis; Wen-geng Qin and Wei-ning Tan (Administration Bureau of Mulun National Natural Reserve) for their assistance in the field; and Shun-qing He (IBK) for the handsome drawing. This study was supported by the Western

Table 1. Morphological comparison of *Petrocosmea huanjiangensis*, *P. martini*, and *P. coerulea*.

	<i>P. huanjiangensis</i>	<i>P. martini</i>	<i>P. coerulea</i>
Leaf blade	ovate or broadly ovate to subrotund	ovate to orbicular-ovate	oblong to elliptic or elliptic-ovate
Petiole length	2–6.5 cm	0.5–3.5 cm	1.5–2.7 cm
Leaf base	peltate	cordate to rounded	peltate
Adaxial corolla lip	ca. 5 mm long, inconspicuously 2-lobed	ca. 3 mm long, inconspicuously 2-lobed	ca. 3.5 mm long, deeply 2-lobed
Filaments	filaments 6–7.2 mm long, densely lanate	2–3 mm long, rust-brown puberulent	ca. 1.2 mm long, puberulent above
Anthers	cordate-ovoid, rostellate, and constricted near the apex	oblong, not apically constricted	cordate-ovoid, not apically constricted
Staminodes	3, 2–3 mm long	2, ca. 0.8 mm long	2, ca. 0.6 mm long

Program for Fostering Personal Ability (Chinese Academy of Sciences [2007]) to Yan Liu.

Literature Cited

- 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.
- Wang, W. T. 1985. The second revision of the genus *Petrocosmea* (Gesneriaceae). Acta Bot. Yunnan. 7(1): 49–68.
- Wang, W. T. 1990. Flora Reipublicae Popularis Sinicae, Vol. 69. Science Press, Beijing.
- Wang, W. T., 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.
- Wei, Y. G. & F. Wen. 2009. *Petrocosmea xingyiensis* (Gesneriaceae), a new species from Guizhou, China. Novon 19(2): 261–262.