

***PRIMULINA LECHANGENSIS* (GESNERIACEAE), A NEW SPECIES FROM A
LIMESTONE CAVE OF NORTHERN GUANGDONG, CHINA**

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Abstract

Primulina lechangensis (Gesneriaceae), a new species from northern Guangdong province in southern China is described and illustrated. Its morphology suggests affinities to *P. longicalyx*, but can be distinguished from similar taxon by several distinct characters including: smaller leaf blade (2.0-3.5 × 1.0-1.2 cm), base cuneate-attenuate; smaller bracts (1.0-1.5 × c. 0.15 cm); shorter calyx lobes (0.8-0.9 cm long) tuberculate inside; smaller corolla tube (c. 2 cm long), inflated in the middle and contracted near the mouth; shorter glabrous filaments (0.3-0.4 cm long), inserted 1.3-1.5 cm from base of corolla; stamens and staminodes glabrous; pistil 1.4-1.5 cm long, and capsule c. 1.5 cm long. This species is further exemplified by photographs, and a distribution map is presented.

Introduction

The expanded *Primulina* Hance (1883) (Gesneriaceae) comprises more than 150 species, of which the distribution and differentiation center is located from Southwest China to North Vietnam (Wei *et al.*, 2010). In late autumn of 2011, we collected some *Primulina* specimens in fruits from crevices of a carbonate sedimentary rocky hill along a roadside near Lechang, Shaoguang, Guangdong of Southern China. The living plants were introduced and cultivated in the nursery of the Gesneriad Conservation Center of China (GCCC) for future floral examination. After a year of careful cultivation, plants flowered in spring of 2013. The shape of the corolla tube (inflated in the middle, contracted near the mouth) is unusual in this genus, which can be readily distinguished from other species in Northern and Northwestern Guangdong. After consulting the local Flora and relevant literature (Wang *et al.*, 1990,1998; Li and Wang, 2004; Wei *et al.*, 2010; Hong *et al.*, 2012; Chung *et al.*, 2013; Liang *et al.*, 2013; Lu *et al.*, 2013; Ning *et al.*, 2013; Wen *et al.*, 2013; Xu *et al.*, 2013; Zhao *et al.*, 2013; Li *et al.*, 2014; Wen and Wei, 2014; Zheng and Deng, 2014; Zhou *et al.*, 2014) and herbarium specimens deposited at ANU, BJFU, CDBI, CTC, GH, HN, IBK, IBSC, KUN, NU, PH, PE, US and VMN, we identified the collected specimens as a new species, *Primulina lechangensis*. The new species is described and illustrated along with its distribution map.

***Primulina lechangensis* X. Hong, F. Wen & S.B. Zhou, sp. nov.**

(Figs 1 & 2).

Diagnosis: *Primulina lechangensis* resembles *P. longicalyx* but differs from the latter by having leaf blades with cuneate to attenuate bases, smaller inflorescence bracts, the corolla tube inflated in the middle and contracted near the mouth, and glabrous filaments.

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Type: China. Guangxi Province, cultivated in the nursery of Gesneriad Conservation Center of China (GCCC), introduced from Lechang, Shaoguang City, 430 m a.s.l., growing in damp crevices of limestone rocks in a limestone cave, 6 May 2013, WF13050601 (*Holotype:* IBK!, *Isotype:* ANU!).

Acaulescent perennial herb; rhizome internodes inconspicuous. Leaves 6-8, basal, opposite, petiole cylindrical, 1-2 × c. 0.1 cm, pubescent; leaf blade slightly oblique, ovate to elliptic, 2.0-3.5 × 1.0-1.2 cm, chartaceous when dry, apex acute to obtuse, margin crenate from base, base cuneate to attenuate, adaxially appressed puberulent, abaxially densely velutinous. Lateral veins 3-4 on each side of midrib, adaxially impressed, abaxially conspicuous. Cymes axillary, 1-2 or more, unbranched, commonly 4-flowered; peduncle 2.5-3.0 cm long, c. 0.1 cm wide, densely glandular puberulent. Bracts 2, free, 1.0-1.5 × c. 0.15 cm, lanceolate-ovate, entire, densely puberulent. Pedicels c. 0.2 cm long, densely puberulent, intermixed with glandular puberulent. Calyx 5-partite from base, segments equal, lanceolate-linear, 0.8-0.9 × c. 0.1 cm, densely puberulent outside, tuberculate inside, margin entire, apex attenuate. Corolla whitish lilac to bluish purple, with mauve lines, c. 2 cm long, puberulent or glandular puberulent outside, glandular puberulent only on veins inside where filaments and staminodes fused to a tube, tube swollen, 1.4-1.5 cm long, contracted near the mouth, orifice c. 1.4 cm in diameter, inflated in the middle, c. 1.6 cm in diameter, base constricted; limb distinctly 2-lipped, adaxial lobes 2-partite to the base, divaricate, c. 0.5 × 0.3-0.4 cm, lobes oblong; abaxial lobes 3-partite to the base, divaricate, c. 0.6 cm long, c. 0.3 cm in diameter, oblong. Stamens 2, adnate to corolla tube c. 0.3 cm above the base; filaments white, geniculate about 0.2 cm above point of attachment, 0.3-0.4 cm long, glabrous; anthers c. 0.2 cm long, dorsified, glabrous. Staminodes 3, translucent, the central one capitate, c. 0.5 mm long, inserted c. 0.1 cm from base of corolla, lateral ones short linear, glabrous, c. 0.2 cm long, inserted c. 0.3 cm from base of corolla. Disc annular, margin entire, 0.1-0.2 mm high. Pistil nearly as long as corolla tube; the transition between ovary and style conspicuous. Ovary linear, c. 2 mm long, c. 1 mm in diameter, densely glandular-puberulent and puberulent; style 7-9 mm long, c. 0.5 mm in diameter, densely puberulent; stigma pale green, obtrapeziform, apex 2-lobed to about half of the stigma, c. 1 mm long, lobes ligulate. Capsules linear, c. 1.5 cm long.

Flowering period: April - May.

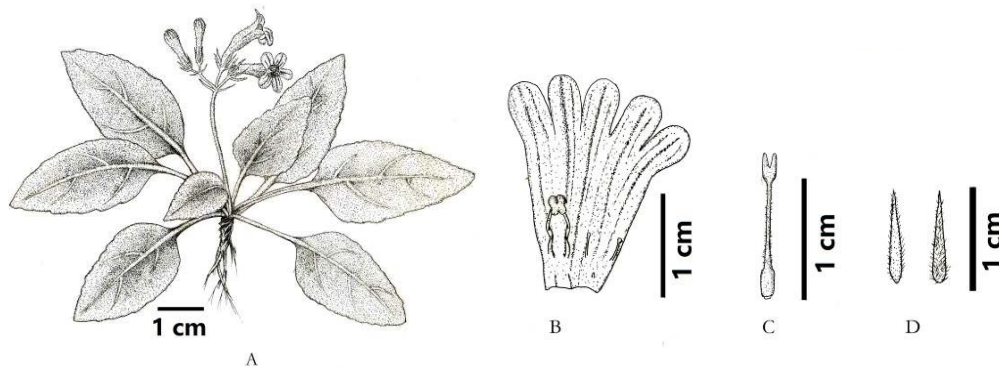


Fig. 1 A-D. *Primulina lechangensis* X. Hong, F. Wen & S.B. Zhou, **sp. nov.** A. Habit; B. Opened corolla showing stamens and staminodes; C. Pistil; D. Adaxial and abaxial calyx lobes (All from the type, WF13050601, IBK).

Distribution: Only known from the type locality Lechang, Shaoguang city, northern Guangdong Province, China (Fig. 3).

Habitat: *Primulina lechangensis* grows in damp, shady cervices at the foot of a carbonate sedimentary rock hill in the north of Guangdong, China, at 430 m a.s.l. It is locally abundant and grows in subtropical evergreen seasonal rain forest.

Etymology: The species is named after the type locality Lechang in Guangdong Province.

Vernacular name: China: Lechang baochunjutai.

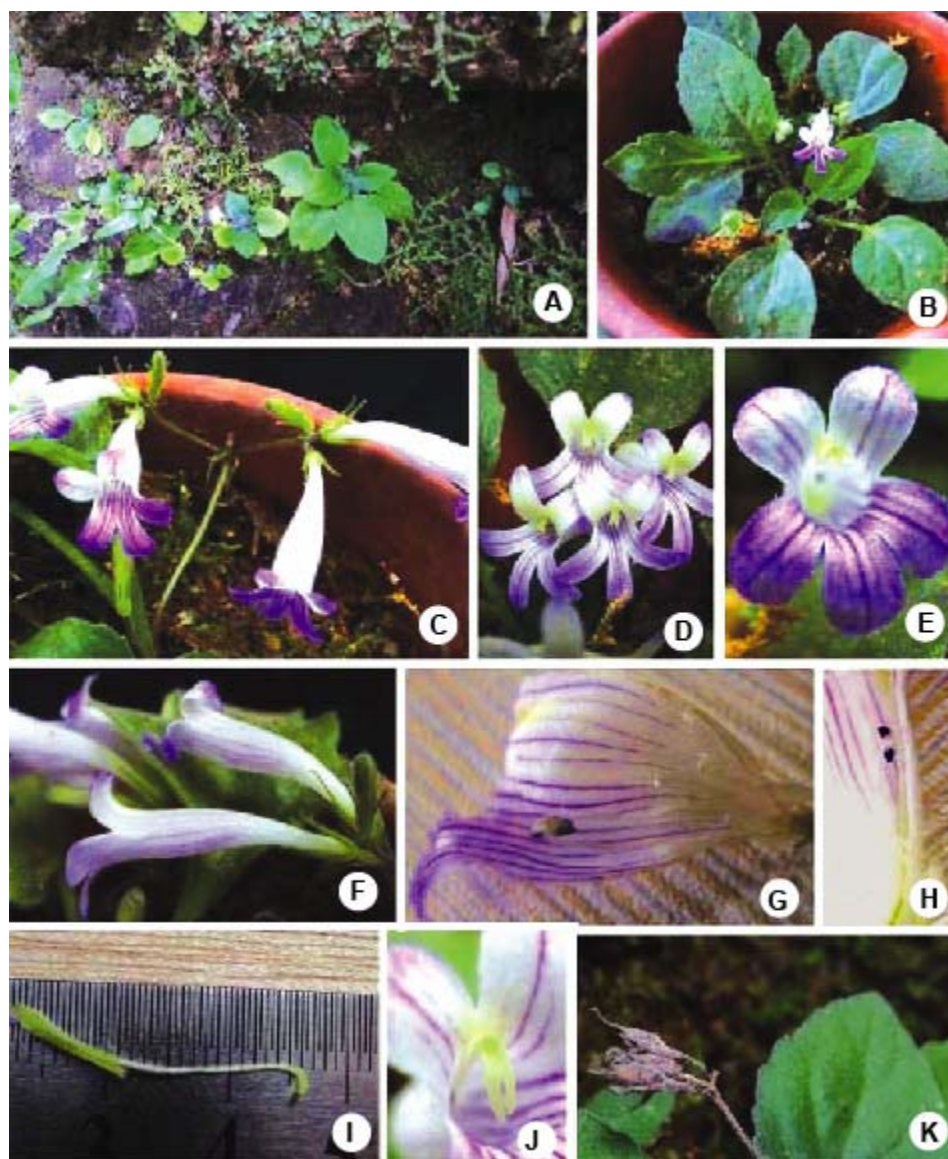


Fig. 2 A-K. *Primulina lechangensis* X. Hong, F. Wen & S.B. Zhou, **sp. nov.** A. Habitat; B. Plant with flowers; C. Cyme; D. Frontal view of cyme; E. Frontal view of a flower; F. Lateral view of flower; G. Opened corolla; H. Anthers; I. Pistil; J. Stigma; K. Capsule.

Additional collections: CHINA. Guangdong Province: Shaoguang, Lechang, c. 430 m, 27 November 2012, *Wen & Hong 20121116* (IBK!).

Note: *Primulina lechangensis* is morphologically close to *P. longicalyx* (J.M. Li & Y.Z. Wang) Mich. Möller & A. Weber based on the shape of leaf and flower, but it can be easily distinguished by some additional characteristics. A detailed comparison of the diagnostic characters between *P. lechangensis* and *P. longicalyx* is shown in Table 1.



Fig. 3. Distribution of *Primulina lechangensis* X. Hong, F. Wen & S.B. Zhou, *sp. nov.* (A) and its related species, *P. longicalyx* (J.M. Li & Y.Z. Wang) Mich. Möller & A. Weber (B) in China.

Table 1. Diagnostic morphological characters of *Primulina lechangensis* and *P. longicalyx*.

Characters	<i>Primulina lechangensis</i>	<i>P. longicalyx</i>
Leaf blade	2.0-3.5 × 1.0-1.2 cm, base cuneate-attenuate	8-25 × 3.5-8.0 cm, base broadly cuneate
Bracts	1.0-1.5 cm long	2.5-3.0 cm long
Calyx	0.8-0.9 cm long, tuberculate inside, glabrous	1.5-2.5 cm long, inside with dense eglandular hairs
Corolla size	c. 2 cm long	5.0-5.6 cm long
Tube shape	Swollen tubular, inflated in the middle, contracted near the mouth	Tubular
Tube size	1.4-1.5 cm long, orifice c. 1.4 cm in diameter	3.8-4.0 cm long, orifice c. 1.8 cm in diameter
Filaments	0.3-0.4 cm long, inserted c. 0.3 cm from base of corolla, glabrous	c. 1.4 cm long, inserted 1.3-1.5 cm from base of corolla, slightly puberulent
Indumentum of anthers	Glabrous	Densely bearded
Indumentum of staminodes	Glabrous	Laterals puberulent
Pistil	1.4-1.5 cm long	3.9-4.3 cm long
Capsule	c. 1.5 cm long	2.2-2.8 cm long

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