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Postprint on the Discovery of *Clematis tongluensis* in Southeastern Tibet

Authors: Wang Wencai

Date: 2020-04-03T00:00:00+00:00

Abstract

Clematis tongluensis (Ranunculaceae) was previously known from Nepal, Bhutan, northeastern India, and Bangladesh, and was discovered in southeastern Tibet this summer. This species is closely related to *Clematis montana*, differing from the latter in having oblong sepals with caudate-acuminate apices, pubescent surfaces, and glabrous backs.

Full Text

Discovery of *Clematis tongluensis* (Ranunculaceae) from Southeast Tibet of China

WANG Wen-Tsai

State Key Laboratory of Systematic and Evolutionary Botany, Institute of Botany, Chinese Academy of Sciences, Beijing 100093, China

Abstract

Clematis tongluensis, a species previously known from Nepal, Bhutan, Northeast India, and Bangladesh, was discovered this summer in the Southeast Tibet Autonomous Region of China. This species is related to *Clematis montana* Buch.-Ham. ex DC., differing from the latter in its oblong sepals that are caudate-acuminate at the apex and hairy adaxially while glabrous abaxially. In *C. montana*, the sepals are obovate with a rounded apex, glabrous adaxially and puberulous abaxially.

Key words: Ranunculaceae, *Clematis*, *Clematis tongluensis*, Tibet of China

Introduction

The herbarium of the Institute of Botany, Chinese Academy of Sciences (PE) dispatched an expedition team to Southeast Tibet this summer, where they

collected a large number of plant specimens. During the identification of Ranunculaceae specimens from this collection, I discovered a specimen of *Clematis* from Milin County that represents *Clematis tongluensis*, a species previously known to be widely distributed in the Himalayan region. This finding marks the first record of this species in China. The following sections provide relevant literature, morphological description, voucher specimen information, and phylogenetic relationships for this species.

Taxonomic Treatment

***Clematis tongluensis* (Bruhl) Tamura** in Acta Phytotax. Geobot. 19(2-3): 77. 1956; Kapoor in Bull. Nat. Bot. Gard. Lucknow 124: 73. 1966; Naitani, Flow. Pl. Ind. Nepal & Bhutan 9, 1991; Rau in Sharma et al. Fl. Ind. 1: 78. 1993; M. Johnson, Klematis 404. 1997; Grey-Wils. Clematis 80, fig. 9 [Figure 9: see original paper]: 3-4. 2002.

Synonym: *Clematis montana* Buch.-Ham. ex DC. var. *tongluensis* Bruhl in Ann. Bot. Gard. Calc. 5(2): 74, pl. 103, fig. 11 [Figure 11: see original paper]. 1896.

Syntypes: Sikkim: Tonglu, T. Thomson s. n., Gamble s. n., King' s collector s. n.; Rungbul, King' s collector s. n. (all syntypes not seen).

Morphological Description *Clematis tongluensis* var. *tongluensis* is a woody vine. Old branches are dark brown, nearly terete, 4 mm in diameter, smooth, and sparsely pubescent. Buds are solitary in leaf axils of fallen leaves, with approximately 10 leathery scales (lanceolate, 12 mm long), producing 4 leaves and 2-4 flowers. Leaves are ternately compound with long petioles; the central leaflet has a petiole 2-10 mm long, is papery, ovate or rhombic-ovate, 4-7 × 2-4 cm, long-acuminate at the apex, broadly cuneate or rounded at the base, shallowly 3-lobed at the middle, with sparse sharp teeth at the margin, sparsely appressed-pubescent adaxially, and only pubescent on veins abaxially. Lateral leaflets are smaller, slightly oblique, with petioles 1-5 mm long. Petioles are slender, 4-9 cm long, and sparsely pubescent.

Flowers have slender pedicels 11-16 cm long, sparsely pubescent. There are 4 white sepals, horizontally spreading, oblong, 3-6 × 0.8-1.8 cm, with 5 longitudinal veins, caudate-acuminate at the apex, appressed-pubescent on veins adaxially, and glabrous abaxially. Stamens are numerous, 10-14 mm long, glabrous; filaments are narrowly linear, 5-11 mm long; anthers are pale yellow, linear, 3.5-4.5 mm long, obtuse at the apex. Carpels are approximately 25; ovary is dark brown, compressed-globose, about 1 mm in diameter, glabrous; style is slender, about 8 mm long, densely white-lanate.

Voucher specimen: Tibet: Milin County, Milin Town, Dongduo Village, Xueka Gully, alt. 3,300 m, alpine meadow, 2019-07-01, PE Xizang Exped. 9903 (PE).

Figure 1. *Clematis tongluensis* [Figure 1: see original paper]. 1. Part of flowering branch, 2. Stamen, 3. Carpel. (From PE Xizang Exped. 9903)

Phylogenetic Relationships and Discussion

Clematis tongluensis belongs to the series Tongluenses W. T. Wang, within subsection Montanae Schneid. of section Cheiropsis DC. (Sect. Cheiropsis DC. subsect. Montanae Schneid. Ser. Tongluenses W. T. Wang).

Subsection Montanae is characterized by woody vines with ternately compound leaves that typically have toothed margins and flowers with four horizontally spreading sepals. This subsection comprises 12 species distributed across the Himalayan region, extending eastward through the subtropical areas south of the Qinling Mountains in China to Taiwan Province. Most species are found in southwestern China and the eastern Himalayan region.

Based on sepal shape, this subsection is divided into two series:

Series 1. Ser. Montanae (Schneid.) Rehd. & Wils. has sepals that are obovate with a rounded or obtuse apex. This series includes six species, four of which are endemic to southwestern China. The widely distributed species is *Clematis montana* (with sepals glabrous adaxially and appressed-pubescent abaxially), ranging from the Himalayas eastward to Taiwan Province. Another species, *Clematis tripartita* W. T. Wang, is distributed in southern Tibet and Nepal.

Series 2. Ser. Tongluenses has sepals that are oblong with an acuminate apex and also includes six species. Three of these are endemic to northern India, northeastern India, and Myanmar, respectively. The type variety, *Clematis tongluensis* var. *tongluensis* (characterized by sepals that are pubescent adaxially; in the other five species of this series, the sepals are glabrous adaxially), has the widest distribution, occurring in eastern Nepal, Bhutan, northern India, and Bangladesh, and is now discovered in Milin County, Southeast Tibet. Another variety, var. *mollisepala* W. T. Wang (with sepals densely appressed-pubescent abaxially), is endemic to Lang County, west of Milin County in Tibet. The remaining two species are *Clematis laxistrigosa* (W. T. Wang & M. C. Chang) W. T. Wang, endemic to southwestern Sichuan, and *Clematis wenshanensis* W. T. Wang, endemic to Wenshan County in southeastern Yunnan (Wang, 2002).

Acknowledgments

I am deeply grateful to Mr. Ban Qin and Mr. Ma Xintang for providing specimens and color photographs, and to Mr. Sun Yingbao for preparing the illustrations and printing.

References

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