
Meconopsis xiangchengensis (Papaveraceae), a New Species from Sichuan, China

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ABSTRACT. A new species of Papaveraceae, *Meconopsis xiangchengensis* R. Li & Z. L. Dao, is described and illustrated from southwestern Sichuan, China. The new taxon is placed in *Meconopsis* sect. *Simplicifoliae* (Tayl.) C. Y. Wu & H. Chuang and is morphologically related to *M. impedita* Prain. *Meconopsis xiangchengensis* differs from the latter by the plant height (8–10 cm vs. 15–25 cm in *M. impedita*) with sparse prickles or nearly glabrous on both surfaces (vs. denser prickles), and by the shorter petioles (1–2.5 cm vs. 3–7.2 cm) and styles (2–3 mm vs. 3–10 mm).

Key words: China, IUCN Red List, *Meconopsis*, Papaveraceae, Sichuan.

The Papaveraceae comprise ca. 23 to 26 genera and 230 to 300 species, depending on taxonomic opinion (Mabberley, 1997; Hou, 1998). The family is widely distributed in northern temperate regions, represented by 11 genera, and approximately 62 species occur in China (Wu et al., 2003).

Meconopsis Vig. is composed of ca. 49 species that are distributed in south-central temperate Asia, extending from Chitral and Kashmir along the Himalayas and intervening mountain ranges. Thirty-eight species occur in southwestern China (Wu et al., 1999), and the genus is found in northern Yunnan, southern Tibet and Sichuan into southern Gansu, southern Qinghai, central Shaanxi, and western Hubei provinces (Wu et al., 2006). There is a single species in western Europe, *M. cambrica* Vig., which is the type for the genus and a geographical outlier because it is indigenous to England, Wales, Ireland, and the western seaboard of Europe (Taylor, 1934).

During the summer of 2007, a botanical expedition was carried out in the Hengduan Mountains in western China to study the biodiversity and speciation of alpine plants. One species was collected with morphological features that differed from all those of

other known species described for *Meconopsis*. After searching the literature (Taylor, 1934; Wu & Zhuang, 1979, 1980; Zhou, 1979; Long, 1984; Debnath & Nayar, 1986; Yang & Wang, 1990; Wu et al., 1999) and conducting a morphological study and examination of many other specimens (including those at KUN and PE), we conclude that the material found at Hengduan Mountains represents a new species in *Meconopsis*.

Meconopsis xiangchengensis R. Li & Z. L. Dao, sp. nov. TYPE: China. Sichuan: Ganzi Tibetan Autonomous Prefecture, Xiangcheng Co., Shagong township, Wuming Snow Mtns. Pass, alpine meadow on slope, 29°08'15.5"N, 100°02'38.6"E, 4684 m, 19 July 2007, R. Li & Z. Dao 036 (holotype, KUN). Figure 1.

Species nova *Meconopsidi impeditae* Prain affinis, sed ab ea planta plerumque minore (8–10 cm alta) sparsim setifera aut glabra, petiolis brevioribus (1–2.5 cm longis) atque stylo brevi (2–3 mm longo) differt.

Monocarpic herb, 8–10 cm tall, usually covered at plant base with remnants of persistent leaf bases; tap root stout, elongated, tapering, to 20 cm, to 1 cm diam. Leaves all basal, lamina elliptic or spatulate, 3–5 × 0.5–1.2 cm, apex obtuse, margin entire and sinuate, with sparse yellow-brown prickles or nearly glabrous on both surfaces, green adaxially, glaucous abaxially, midrib conspicuous, lateral veins dichotomous; petioles 1–2.5 cm. Flowering stems 6 to 9, to 10 cm tall, glabrous; flowers terminal, borne singly on slender scape arising basally. Flower with sepals 2, ovate to oblong, 0.9–1.2 × 0.7–1 cm, apex obtuse, with sparse yellow-brown prickles abaxially, sepals falling prematurely; petals 6 to 8, obovate or suborbicular, 1.2–2.5 × 1–1.8 cm, deep purple; stamens numerous; filaments filiform, ca. 7 mm, of the same shade or darker than the petals; anthers

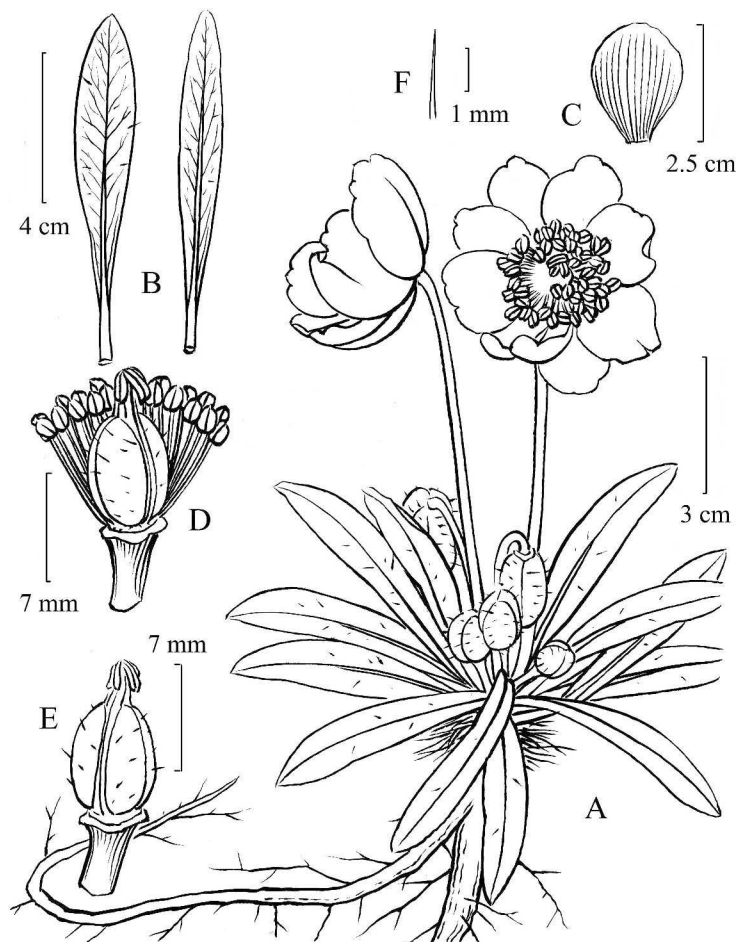


Figure 1. *Meconopsis xiangchengensis* R. Li & Z. L. Dao. —A. Habit. —B. Leaves with sparse yellow-brown prickles on both blade surfaces. —C. Petal, showing venation. —D. Stamens and pistil of flower, with the petals removed. —E. Ovary with sparse yellow-brown prickles. —F. Prickle. Drawn from the holotype R. Li & Z. Dao 036 (KUN).

ovate, ca. 1 mm, yellow; ovary ellipsoid-oblong, ca. 7 mm, with sparse yellow-brown prickles or almost glabrous; style slender, 2–3 mm, stigma capitate, cream colored. Fruit not seen.

Distribution and habitat. *Meconopsis xiangchengensis* is currently known only from two sites in the southern Hengduan Mountains, in alpine meadows, at altitudes of 4385–4700 m. The type locality is in Xiangcheng County of southwestern Sichuan Province and the second site is to the south, in Shangri-La County of northwestern Yunnan Province, China. The new species may be considered endemic to these Hengduan Mountain localities.

IUCN Red List category. *Meconopsis xiangchengensis* was collected only from two sites and is therefore assumed to be rare. It is considered

Endangered (EN), according to IUCN Red List criteria (2001), since its known area of occupancy is less than 500 km² (criterion B2) and the total population size is estimated to be smaller than 2500 mature individuals (criterion C).

Phenology. *Meconopsis xiangchengensis* was observed with flowers in July.

Etymology. The specific epithet of the new species refers to the type locality, Xiangcheng County in Sichuan Province, China.

Discussion. According to Wu and Zhuang (1980), Wu et al. (1999), and Taylor's (1934) monographic work, *Meconopsis xiangchengensis* obviously belongs to *Meconopsis* sect. *Simplicifoliae* (Tayl.) C. Y. Wu & H. Chuang in *Meconopsis* ser. *Delavayanae* Tayl. The

section is characterized by the flowers borne singly on slender basal scapes, with six to eight deep purple petals. The series is characterized by a stout and elongated tap root, and the plants are usually covered at the base with remnants of persistent leaf bases. The new species is closely related to *M. impedita*, but differs from the latter by the plants being shorter (8–10 cm vs. 15–25 cm in *M. impedita*) with sparse prickles or glabrous (vs. denser prickles). The petioles of *M. xianghengensis* are shorter (1–2.5 cm vs. 3–7.2 cm), as are the styles (2–3 mm vs. 3–10 mm). The new species was collected within the general range of *M. impedita*, and the two species may be considered sympatric. *Meconopsis impedita* also occurs in alpine meadows on slopes and pastures, at similar elevations (3400–3700 m), although *M. impedita* has been collected at lower sites than the new species. *Meconopsis impedita* is known from southwestern Sichuan, southeastern Xizang, and northwestern Yunnan provinces in China (Zhang & Grey-Wilson, 2008).

Paratypes. CHINA. **Sichuan:** Ganzi Tibet Autonomous Prefecture, Xiangcheng Co., Shagong township, Wuming Snow Mtns. Pass, alpine meadow on slope, 29°08'15.5"N, 100°02'38.6"E, 4684 m, 19 July 2007, *R. Li & Z. Dao 039* (KUN). **Yunnan:** Diqing Tibet Autonomous Prefecture, Shangri-La Co., Geza township, near Landdu pass, alpine meadow on slope, 28°08'23.7"N, 99°54'28.8"E, 4385 m, 16 July 2007, *R. Li & Z. Dao 009C* (MO).

Acknowledgments. The authors kindly thank Heng Li for revising the manuscript and Yitao Liu for inking the excellent line drawings. We thank two anonymous reviewers and Victoria C. Hollowell for their critical review of the manuscript. The study was supported by funding from the Key Laboratory of Biodiversity and Biogeography, Kunming Institute of Botany, Chinese Academy of Sciences (grant no. KLBB201204), and the Project of the Knowledge

Innovation Engineering of the Chinese Academy of Sciences (grant no. KSCX2-EW-J-24).

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