

NEW TAXA OF *MECONOPSIS* (PAPAVERACEAE) FROM WANBA, SOUTHWESTERN SICHUAN, CHINA

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Abstract. Two taxa of *Meconopsis*, growing on metalliferous mountains adjacent to Wanba (湾坝) valley, Jiulong Xian (九龙县), southwestern Sichuan, China, are described as new and accompanied by photographs. The first taxon, *M. wanbaensis*, is distinguished from related species by such unique features as the prominently undulate petals and obconical style. The second taxon, *M. pulchella* var. *melananthera*, is distinguished from var. *pulchella* by features of the anthers and bristles.

Keywords: *Meconopsis integrifolia* subsp. *souliei*, *Meconopsis lijiangensis*, *Meconopsis pulchella*, Wanba, Jiulong

The author visited the mountains around Wanba valley, southwestern Sichuan, in June 2017, on the basis of information and photographs from Yuhong Liu (刘渝宏) of two taxa of *Meconopsis* in flower and in fruit. After comparing the plants and related taxa, it was determined that they represent two new taxa, *M. wanbaensis* and *M. pulchella* var. *melananthera*, which are described below.

Meconopsis wanbaensis T. Yoshida, *sp. nov.* TYPE: CHINA. SW Sichuan: Jiulong Xian, east of Wanba Xiang (湾坝乡), 29°03'30"N, 102°04'48"E, 3600 m, 16 June 2017, T. Yoshida K111 (Holotype: KUN; Isotype: TI). Fig. 1–6.

Meconopsis wanbaensis resembles *M. integrifolia* (Maxim.) Franch. subsp. *souliei* (Fedde) Grey-Wilson and *M. lijiangensis* (Grey-Wilson) Grey-Wilson but differs from them in the prominently undulate petals, the filaments dilated toward the apex, the ellipsoid anthers with incurved thecae, and the obconical style.

Herbs, monocarpic, 30–50 cm tall in flower, to 70 cm tall in fruit. *Taproot* firm and flexible, narrowly elongate, to 8 cm long or more, 2–3 mm across, sometimes with 2–8 narrower and shorter roots clustered near transition to stem. *Most parts of plant* with dense soft spreading hairs; hairs buff colored, to 7 mm long. *Stem* (below lowermost bract) simple, 6–26 cm long, 6–10 mm across. *Leaves* crowded near base of plant, petiolate; petiole broadly linear, 5–12 cm long, 1.5–3 mm wide; lamina oblong or oblanceolate (small leaves elliptic), 2–11 cm long, 7–22 mm wide, base attenuate, margin entire, sometimes wavy, apex obtuse or acute. *Bracts* usually pseudo-whorled, occasionally alternate below pseudo-whorled ones, sessile; lamina linear-oblong or oblanceolate, base attenuate, margin entire, occasionally wavy, apex acute, acuminate, or obtuse. *Flowers* 2–7, bracteate, laterally facing or half nodding, dish or bowl shaped, 4.5–10 cm across. *Pedicels* 5–18 cm long in flower, to 35 cm long in fruit. *Calyx* 1.7–2.2 cm long. *Petals* (5–)6–11, pale yellow, obovate, broadly obovate or elliptic, 2.5–5 cm long, 1.3–4 cm wide, base cuneate, margin entire or irregularly denticulate near apex, always prominently

undulate except near base, apex obtuse or rounded. *Stamens* numerous; filaments similar to petals in color, linear, 8–15 mm long, dilated to 1 mm wide toward apex, grooved along midvein (vascular bundle); anthers ellipsoid, 1.2–2.4 mm long; thecae bright orange, incurved. *Ovary* ellipsoid, 6–12 mm long, with dense ascending hairs. *Style* yellowish green, obconical, 2–5 mm long, with 2–6 prominent ridges; ridges gradually more pronounced toward apex. *Stigma* yellowish green, with 4–6 lobes (rays); lobes oblong, 2.5–6 mm long, spreading over ridges of style, with dense short hairs on periphery. *Capsules* narrowly ellipsoid, 1.5–2.5 cm long, 5–8 mm across, with dense or sparse spreading hairs.

Distribution: CHINA, southwestern Sichuan: Wanba valley, Jiulong Xian, 3500–4050 m elevation. As far as is known, *Meconopsis wanbaensis* is endemic to Wanba valley.

Habitat: northwest-, west-, and southwest-facing slopes on metalliferous mountains; growing with other herbs and grasses on alpine slopes, on the lower margins of thickets and on steep slopes; rooting in wet gravelly humus soil.

Meconopsis pulchella T. Yoshida, H. Sun & D. E. Boufford var. ***melananthera*** T. Yoshida, *var. nov.* TYPE: CHINA. SW Sichuan: Jiulong Xian, east of Wanba Xiang (湾坝乡), 29°03'23"N, 102°04'43"E, 3550 m, 16 June 2017, T. Yoshida K110 (Holotype: KUN; Isotype: TI). Fig. 7–10.

Meconopsis pulchella var. *melananthera* differs from var. *pulchella* in the black anthers (not black in the latter) with dull orange margins, the bristles without a thick, blackish base (often with thick, blackish base in the latter), and the purple petals (magenta-purple in the latter).

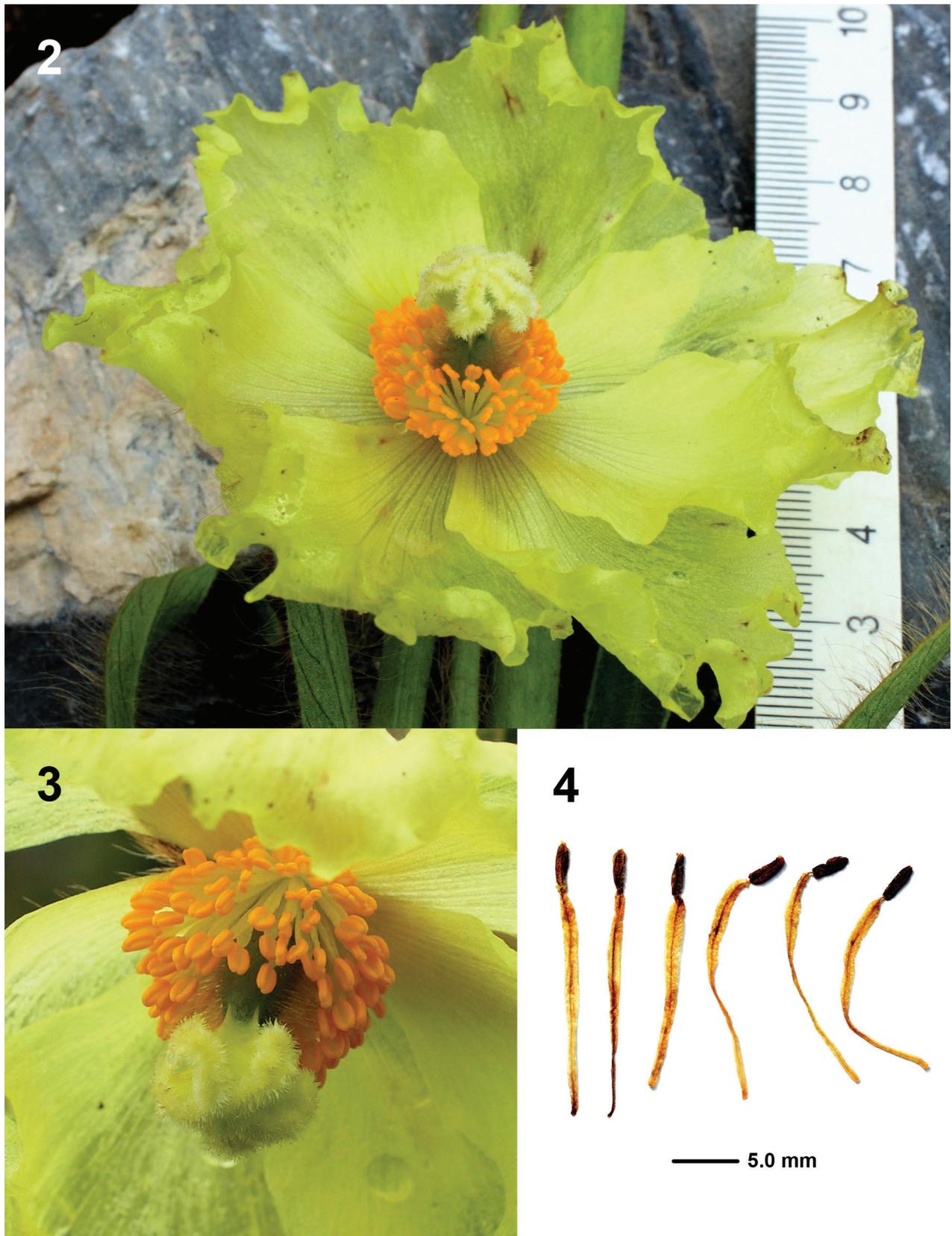
Herbs, monocarpic, 6–17 cm tall in flower, to 20 cm tall in fruit. *Taproot* elongate, to 4 cm long or more, 2.5–5 mm across. *Most parts of plant* bristly. *Stem* (below uppermost leaf) simple, 5–15 mm long. *Leaves* crowded on short stem, petiolate; petiole linear, 1–4 cm long, 0.8–2 mm wide; lamina ovate, elliptic, oblong, or oblanceolate, 1.2–6 cm long, 5–20 mm wide, base cuneate, attenuate, or rounded, margin entire, occasionally 2- to 4-toothed

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FIGURE 1. *Meconopsis wanbaensis* T. Yoshida at the type locality. Photograph by T. Yoshida, June 16, 2017.



FIGURES 2–4. 2–3, *Meconopsis wanbaensis* T. Yoshida at the type locality. Photograph by T. Yoshida, June 16, 2017; 4, *Stamens* of *Meconopsis wanbaensis* T. Yoshida from plants collected at the type locality on June 16, 2017. Photographs by T. Yoshida.



FIGURE 5. Fructing plant of *Meconopsis wanbaensis* T. Yoshida at the type locality. Photograph by T. Yoshida, June 17, 2017.



FIGURE 6. Young fruit of *Meconopsis wanbaensis* T. Yoshida at the type locality. Photograph by T. Yoshida, June 17, 2017.



FIGURE 7. *Meconopsis pulchella* T. Yoshida, H. Sun & D. E. Boufford var. *melananthera* T. Yoshida at the type locality. Photograph by T. Yoshida, June 16, 2017.



FIGURES 8–9. *Meconopsis pulchella* T. Yoshida, H. Sun & D. E. Boufford var. *melananthera* T. Yoshida at the type locality. Photograph by T. Yoshida, June 16, 2017.



FIGURE 10. *Meconopsis pulchella* T. Yoshida, H. Sun & D. E. Boufford var. *melananthera* T. Yoshida at the type locality. Photograph by Y. Liu, February 4, 2017.

or crenulate, apex obtuse, acute, or acuminate, upper surface moderately bristly, lower surface sparsely bristly. *Inflorescence* scapose with (2 or)3 or 4(or 5) flowers; scape 6–15 cm long, 1.5–2.5 mm across, densely or moderately covered with patent bristles; bristles rather hard, tinged pale brown, brown, or reddish brown, to 2.5–5 mm long. *Flowers* usually laterally facing, occasionally half nodding, opening flat or dish shaped in fine weather, 3–4.5 cm across. *Calyx* 8–11 mm long. *Petals* 4 or occasionally 5(or 6), deep purple or purple, ovate, broadly ovate, rhombic, rounded, or elliptic, 1.5–2.5 cm long, 1–2.5 cm wide, margin often irregularly denticulate near apex, apex obtuse, acute, or rounded. *Stamens* numerous; filaments similar to petals in color, filiform, 4–7 mm long; anthers black with dull orange margins, ellipsoid, 0.8–1.2 mm long. *Ovary* pale green,

ovoid, 3.5–6 mm long, with dense ascending bristles. *Style* pale green or whitish, 2–3.5 mm long in flower, to 5 mm long in fruit. *Stigma* capitate, 1–1.8 mm across, with 4–6 lobes (rays). *Capsules* cylindrical or narrowly obovoid, 1.5–2.5 cm long, 5–7 mm across, covered with patent bristles or occasionally glabrescent.

Distribution: CHINA, southwestern Sichuan, Wanba valley, 3500–3650 m elevation. As far as is known, *Meconopsis pulchella* var. *melananthera* is endemic to metalliferous mountains in this valley in Jiulong Xian, southwestern Sichuan, China.

Habitat: on northwest-facing steep slopes of metalliferous mountains with thick cover of mosses, other herbs, and grasses, sometimes on the lower margins of thickets; rooting in wet humus among rocks.