

Oreocharis jinpingensis (Gesneriaceae), a new species from Yunnan, China

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A new species of Gesneriaceae, *Oreocharis jinpingensis* W.H. Chen & Y.M. Shui from the Xilong Mountains of Jinping County in southeastern Yunnan, China, bordering North Vietnam, is described and illustrated. Its morphological distinctiveness from the most similar species *O. auricula* is discussed. Pollen and seed morphological characters are also reported for *O. jinpingensis*.

In July 2011, during a field survey on the east segment of the Xilong Mountains in Yunnan, bordering northwestern Vietnam, we collected an unknown plant of Gesneriaceae in fruit. In October 2011 during a further survey at the same place, we collected flowering specimens. Based on vegetative (basal rosette with spirally arranged leaves) and flower characteristics (four separate stamens), we concluded that it is likely a member of the genus *Oreocharis* (Wang *et al.* 1998, Li & Wang 2004, Möller *et al.* 2011). This was later confirmed by molecular data (unpubl. data). By comparison with *Oreocharis* species occurring in China and adjacent regions, we found that it represents a species unknown to science (Pellegrin 1930, Wang *et al.* 1990, Li 1991, Wang *et al.* 1998, Pham-Hoang 2000, Li & Wang 2004). We observed its seeds and pollen grains by SEM and describe their micro-

morphological characters using the terminology of Weber and Burtt (1983), Yan *et al.* (1997), Li & Wang (2004) and Punt *et al.* (2007).

***Oreocharis jinpingensis* W.H. Chen & Y.M. Shui, *sp. nova* (Figs. 1–2)**

Species haec habitu Oreocharis auriculae affinis, sed foliis supra glabris (nec pubescentibus) lobis calycis 0.8–1.0 cm longis externe villosis (nec ca. 0.3 cm longis externe sericeis) lobis corollae interne albis externe purpureis (nec interne purpureis externe albis) bene differt.

TYPE: China. Yunnan Province, Jinping County, Xilong Mountains, in broad-leaved forests, 22°35'24"N, 102°53'41"E, alt. 2 048 m a.s.l., 14 Oct. 2011, in flower, Y.M. Shui *et al.* 91309 (holotype KUN; isotype PE). — PARATYPE: China. Yunnan Province, Jinping County, Xilong Mountains,



Fig. 1. *Oreocharis jinpingensis* in the field (all from the holotype; A and B photographed by Zhi-Yong Yu, C by Yu-Min Shui). — **A:** Plant. — **B:** Inflorescence. — **C:** Face view of corolla.

in broad-leaved forests, 22°35'24.45''N, 102°53'41.57''E, alt. 2000 m, 13 July 2011, in fruit, Y.M. Shui *et al.* 90996 (KUN!).

ETYMOLOGY: The species epithet is based on the name of the type locality.

Perennial herb. Leaves in basal rosette. Petiole 6–13 cm long, villous; leaf blade elliptic, 7.5–14 × 5–8.5 cm, adaxially glabrous, abaxially villous on midrib, base truncate, margin entire; lateral veins in 4–9 pairs. Inflorescences axillary. Peduncles 6–14 cm, villous; bracts lanceolate, 1.0–1.4 × 0.3–0.4 cm, villous. Calyx 5-sect., lobes linear-lanceolate, 0.8–1.3 × 0.1–0.18 cm, villous. Corolla bilabiate, inside glabrous and white with purple striations, outside purple and with a white pubescence; tube narrowly funnelform, 1.6–1.7 cm long, base ca. 0.4 cm in diam., slightly constricted at throat; adaxial lip ca. 0.7 cm long, 2-lobed, lobes oblong, 0.4–0.5 × 0.2–0.3 cm, apex acute; abaxial lip 3-lobed, lobes oblong, middle lobe ca. 1.1 × 0.4 cm, lateral lobes equal, 0.9–1 × ca. 0.4 cm, apex acute. Stamens 4, separate, included, adaxial stamens

ca. 1.1 cm long, abaxial stamens ca. 0.9 cm long; filaments glabrous; anthers basifixed; staminode 1, below middle of tube, 0.6–0.7 mm long. Pistil ca. 1 cm long, glabrous; ovary narrowly oblong, stigma 1, capitate, disc ringlike, ca. 2 mm high, dentate. Capsule oblong, 3.6–4.0 cm long. Flowering in September–October, fruiting in October–December.

POLLEN MORPHOLOGY: The pollen grains are prolate, tricolpate, ca. $19.1 \times 12.6 \mu\text{m}$. The exine ornamentation is reticulate or alveolate, with irregular lumina. The lumina are 1–3 μm or absent (Fig. 3A–D).

SEED MORPHOLOGY: The seeds are generally ellipsoidal, with a mean size of ca. $0.38 \times 0.17 \text{ mm}$. Individual seed testa cells form irregular, long, lobe-like tubercles with several strap-like thickenings (Fig. 3E–H), similar to those observed in other Gesneriaceae species (Weber & Burt 1983, Li & Wang 2004).

DISTRIBUTION AND HABITAT: *Oreocharis jinpingensis* grows on moist ground or slopes in



Fig. 2. *Oreocharis jinpinensis* (A–C from the holotype, D from Y.M. Shui *et al.* 90996, drawn by Ling Wang). — A: Plant. — B: Opened corolla. — C: Calyx, ovary and disc. — D: Dry fruit.

moxy evergreen broad-leaved forests, at altitudes of 2000–2048 m a.s.l. in Jinping County of SE Yunnan, China, bordering northwestern Vietnam.

Oreocharis jinpingensis is morphologically similar to *O. auricula* in the general flower morphology and leaf morphology and texture. However, the former has longer calyx lobes and only slightly reflexed corolla lobes compared to *O. auricula*, and white corolla lobes each with a distinct dark purple line (Fig. 1). In fact, such a bi-coloration of the corolla is quite rare even in the extended genus *Oreocharis*, only seen in *O. magnidens* with its white lobes with purple tips

(Möller *et al.* 2011). The new species further differs in its glabrous adaxial surface of the leaf (in *O. auricula* sericeous) and villous calyx lobes (in *O. auricula* pubescent). Distribution of *O. jinpingensis* and *O. auricula* is allopatric (Fig. 4).

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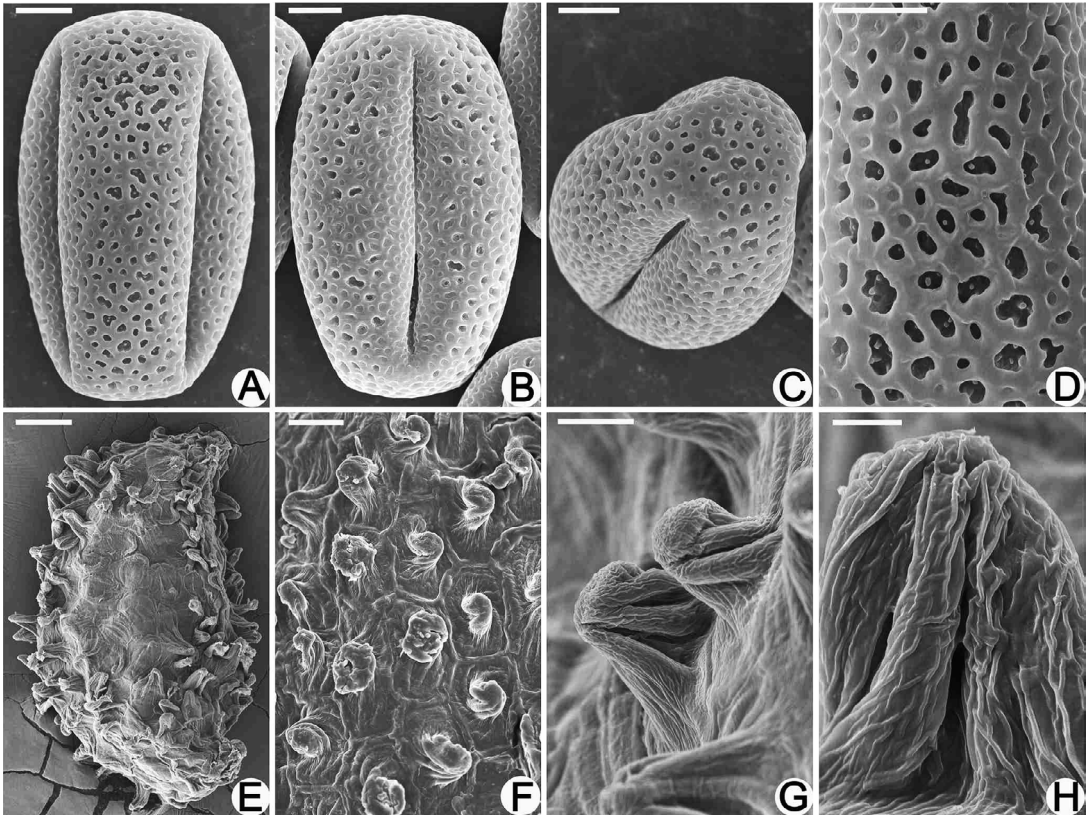
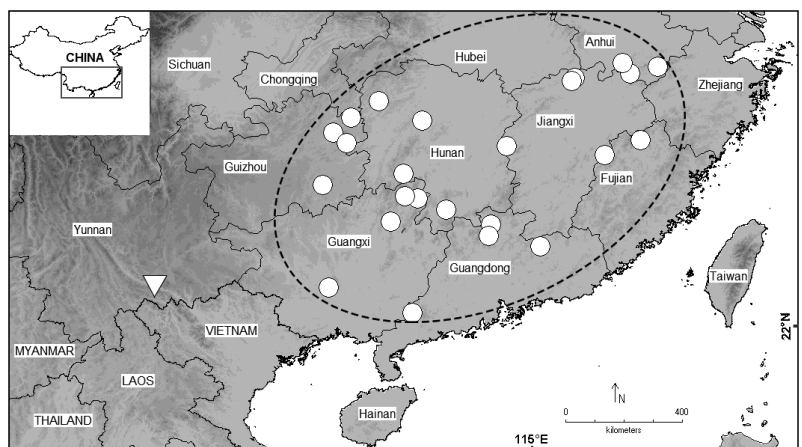


Fig. 3. SEM images of pollen grains and seeds of *Oreocharis jinpingensis* (from the holotype). — **A–D:** Pollen: — **A–B:** Equatorial views. — **C:** Polar view. — **D:** Exine surface. — **E–H:** Seeds: — **E:** Entire seed. — **F:** Seed surface. — **G:** Seed testa cell ornamentation. — **H:** Ornamentation of individual testa cell. Scale bars: **A–C** = 3 μm , **D** = 2 μm , **E** = 100 μm , **F** = 20 μm , **G** = 12 μm , **H** = 4 μm .

Fig. 4. Geographical distributions of *Oreocharis jinpingensis* (triangle) and its morphologically most similar species, *O. auricula* (circles).



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