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## Research

### *Oreocharis reticuliflora* (Gesneriaceae), a new species from southeastern Sichuan, China

Li-Hua Yang and Xi-Zuo Shi

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Based on morphological observation and literature consultation, a new species of *Oreocharis* (Gesneriaceae), *O. reticuliflora* Li H. Yang & X.Z. Shi, is described and illustrated. This new species resembles *O. auricula*, but differs by its conspicuous and reticular secondary veins, corolla with a network of violet stripes on each lip lobe, glandular-pubescent ovary, shorter capsule and being densely brown woolly on the abaxial leaf surface, outside of bracts and calyx lobes. A detailed morphological description and photographic illustration of the new species are presented.

Keywords: flora of Sichuan, morphology, new taxon, taxonomy

## Introduction

The newly-circumscribed *Oreocharis* Benth. has become a large and morphologically diverse genus in the subtribe Didymocarpaceae G. Don, tribe Trichosporeae Nees, subfamily Didymocarpoideae Arn., Gesneriaceae Rich. & Juss. (Möller et al. 2011, Weber et al. 2013). The species of this redefined genus are all rosette herbs with spirally-arranged leaves, scapose inflorescences and loculicidally dehiscent capsules but they show great variation in floral characters (i.e. corolla form and coloration, number of stamens, anther shape and dehiscence mode) (Möller et al. 2011, Yang et al. 2020). At present, the genus comprise about 150 species (Wen et al. 2021), most of which occur in southern and southwestern China and northern Vietnam, with a few extending to Myanmar, India, Bhutan, Japan and Thailand (Möller et al. 2011). Especially southwestern China is the center of species diversity of *Oreocharis* s.l., and numerous new species have been found in this area in recent years (Chen et al. 2015, 2016, 2020, Tan et al. 2015, Cai et al. 2017, 2019, 2020). However, during the last ten years, no new species has been reported from Sichuan, which is one of the main provinces of southwestern China. In this study, based on extensive specimen examination, field investigation and comprehensive checking of literature (Pan 1987, Wang et al. 1998, Li and Wang 2004, Li et al. 2005, Möller et al. 2011), we confirmed a new species of this genus from southeastern Sichuan, China. Therefore, *Oreocharis reticuliflora* Li H. Yang & X.Z. Shi is described for the first time below. Meanwhile, this new species brings the total numbers of species of *Oreocharis* in Sichuan to 30.



***Oreocharis reticuliflora* Li H. Yang & X.Z. Shi, sp. nov. (Fig. 1, 2, 3A–C, E–G)**

A species that mainly differs from *Oreocharis auricula* (S. Moore) C.B. Clarke by its conspicuous and reticular secondary veins on the abaxial leaf surface (versus inconspicuous), corolla with a network of violet stripes on each lip lobe (versus without such color pattern), glandular-pubescent ovary (versus glabrous), shorter capsule (ca 2 cm long versus ca 4.5 cm long) and by being densely brown woolly on the abaxial leaf surface, outside of bracts and calyx lobes (versus sparsely brown villous).

**Type:** China, Guangdong Province: Guangzhou City, vouchers were made from cultivated plants at South China Botanical Garden, 4 May 2021 (flowering), Li-Hua Yang YLH1178 (holotype: IBSC-0865767!, isotypes:

IBSC-0865768!, IBSC-0865769!, IBSC-0865770!, IBSC-0865771!, IBSC-0865772!), introduced from Sichuan Province, Xuyong County, Longfeng Town, growing on moist rocks, 690 m a.s.l., 28°14'48.39"N, 105°27'18.45"E, 17 Apr 2021, with flower buds, Li-Hua Yang and Xi-Zuo Shi.

**Description**

Perennial herb with inconspicuous rhizome. Leaves in basal rosette, 8–20; petiole 1–3 cm long, densely brown woolly, especially at the base; leaf blade elliptic to ovate, 8–15 × 4–6 cm, thick chartaceous, adaxially densely appressed pubescent, abaxially densely woolly along the veins, cuneate at base, with margin almost entire to shallowly crenate, acute to rounded at apex; lateral veins 6–8 on each side of midrib, adaxially inconspicuous, abaxially

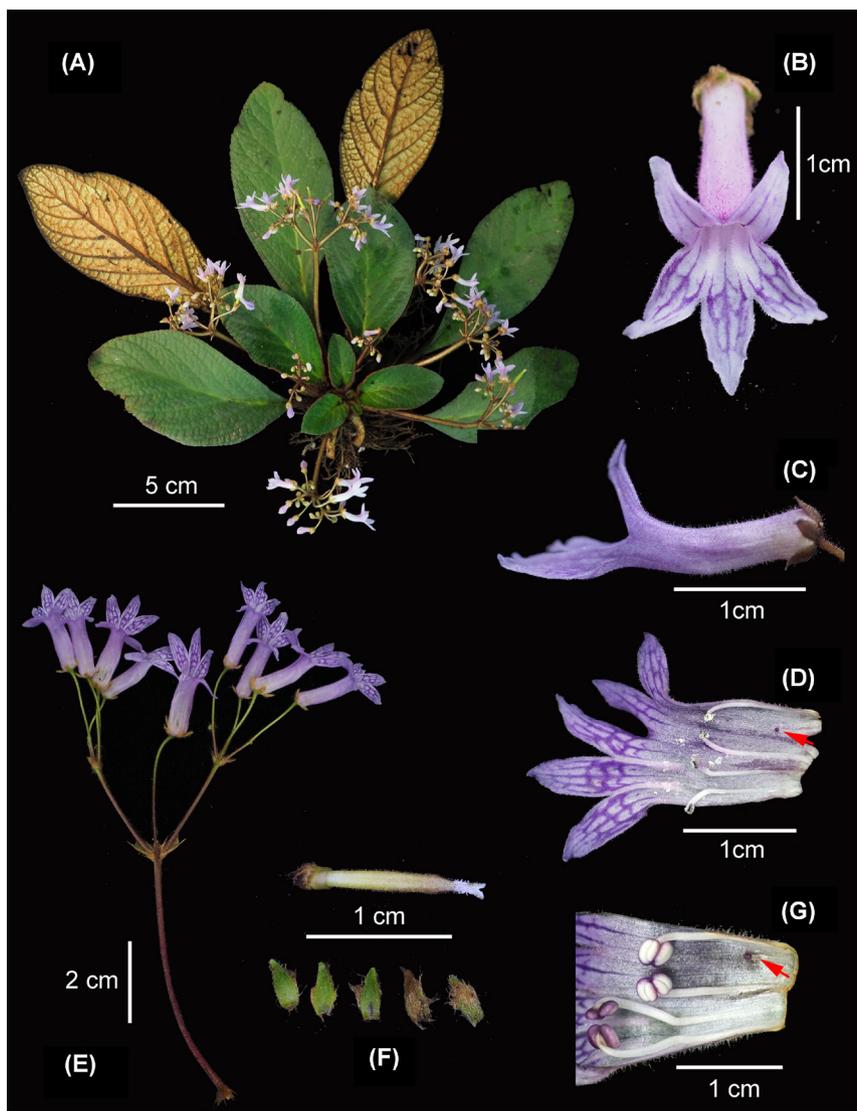


Figure 1. *Oreocharis reticuliflora* Li H. Yang & X.Z. Shi, sp. nov. (A) habit, (B) front view of flower, (C) side view of flower, (D, G) opened corolla showing stamens and staminodes, (E) inflorescence, (F) pistil and calyx. Red arrows show the staminode. Photo credit: Li-Hua Yang.



Figure 2. Holotype of *Oreocharis reticuliflora* li H. Yang & X.Z. Shi, sp. nov.

conspicuous; secondary veins reticular. Cymes 4–8, axillary, 4–14(22)-flowered. Peduncles 4–8 cm long, densely rust-brown villous, except densely brown woolly at base; bracts 2, lanceolate, 0.5–1.0 × ca 2.0 mm, with entire margins, brown woolly outside, glabrous inside; pedicel 1–2 cm long, densely rust-brown villous. Calyx 5-lobed to near base; lobes equal, lanceolate, 4.0–6.0 × ca 1.5 mm, with entire margin, densely brown woolly outside, glabrous inside. Corolla blue-purple, 2.0–2.5 cm long, glandular-pubescent outside, glabrous inside; tube cylindrical and slightly curved, 1.2–1.5 cm long; limb distinctly 2-lipped, with a network of violet stripes on each lip lobe; adaxial lip 2-lobed to near base with lobes oblong, acute to obtuse at apex, 6.0–8.0 × 2.0–2.5 mm; abaxial lip 3-lobed near base, with lobes oblong, acute to obtuse at apex, 8.0–10.0 × 2.0–2.5 mm. Stamens 4, adnate to about the middle of corolla tube; filaments linear, glabrous; adaxial stamens 4–6 mm long; abaxial stamens ca 4 mm long; anthers dorsifixed, free, ovate-oblong, dehiscent longitudinally, glabrescent. Staminode 1, adnate above base of corolla tube, ca 1.5 mm long. Disc ring-like, ca 1 mm high, glabrous; pistil 10–12 mm long; ovary long cylindrical, glandular-pubescent, 7–9 mm long; style 2–3 mm long, glandular-pubescent; stigma bilobed, with oblong lobes, ca 1.5 × 1.0 mm. Capsule ca 2 cm long, dehiscent loculicidally to base, initially on one side; valves 2.

### Etymology

The specific epithet, *reticuliflora*, is derived from the Latin words, *reticulum* and *flora*, referring to the network of violet stripes on corolla limb of this new species.

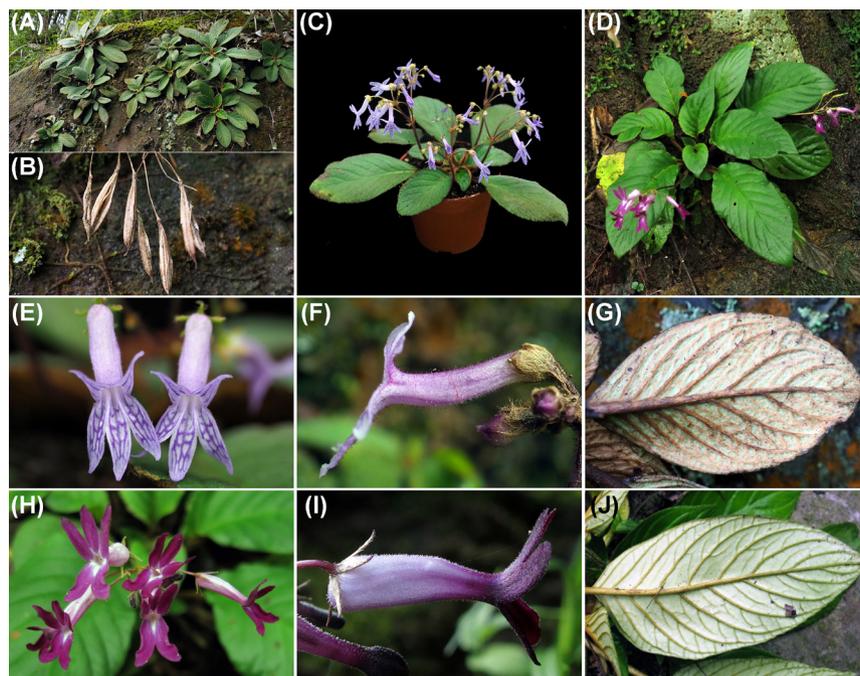


Figure 3. *Oreocharis reticuliflora* (A–C, E–G) and *O. auricula* (D, H–J). (A) Habitat, (B) fruit, (C–D) habit, (E, H) front view of flower, (F, I) side view of flower, (G, J) abaxial leaf surface. Photo credit: Li-Hua Yang.

Table 1. Morphological comparisons between *Oreocharis reticuliflora* and *O. auricula*.

Characters	<i>O. reticuliflora</i>	<i>O. auricula</i>
Leaf blade texture	thick chartaceous	chartaceous
Leaf blade veins	secondary veins conspicuous and reticular	secondary veins inconspicuous
Corolla tube	un-constricted at throat	constricted at throat
Corolla limb	with a network of violet stripes on each lip lobe	without such reticular stripes
Ovary	glandular-pubescent	glabrous
Stigma	bilobed, lobes oblong	stigma 1, disc-shaped
Capsule	ca 2 cm long	ca 4.5 cm long
Indumentum	densely brown woolly on abaxial leaf surface, outside of bracts and calyx lobes	sparsely brown villous on abaxial leaf surface, outside of bracts and calyx lobes
Flowering time	May–June	June–August

## Phenology

Flowering from May to June, and fruiting from July to August.

## Vernacular name

In Chinese mandarin ‘Wang Wen Ma Ling Ju Tai’ (网纹马铃苣苔).

## Distribution and habitat

Currently, *Oreocharis reticuliflora* is only known from the type locality at Longfeng Town, Xuyong County, Sichuan Province, China. A total of ca 800 mature individuals were found here. Plants of this species like to grow in shady rock outcrops under evergreen broad-leaved forest.

## Notes

When we checked specimens of the genus *Oreocharis* in CDBI, we found that *Oreocharis reticuliflora* has previously been misidentified as *O. auricula* (the specific information of these specimens is provided as Additional specimen examined). According to the floral characters, cylindrical corolla tube, long and oblong lip lobes and four free anthers, *O. reticuliflora* is really similar to *O. auricular* (Fig. 2D, H–J); however, the new species can be distinguished from the latter species by the characters summarized in Table 1. Additionally, the characters of this new species, thick chartaceous leaves with conspicuous and reticular secondary veins and densely brown woolly along veins, also appear in a collection of other species in the genus *Oreocharis*, such as *O. benthamii* var. *reticulata* Dunn, *O. xiangguiensis* W.T. Wang & K.Y. Pan, *O. maximowiczii* C.B. Clarke, *O. sinohenryi*

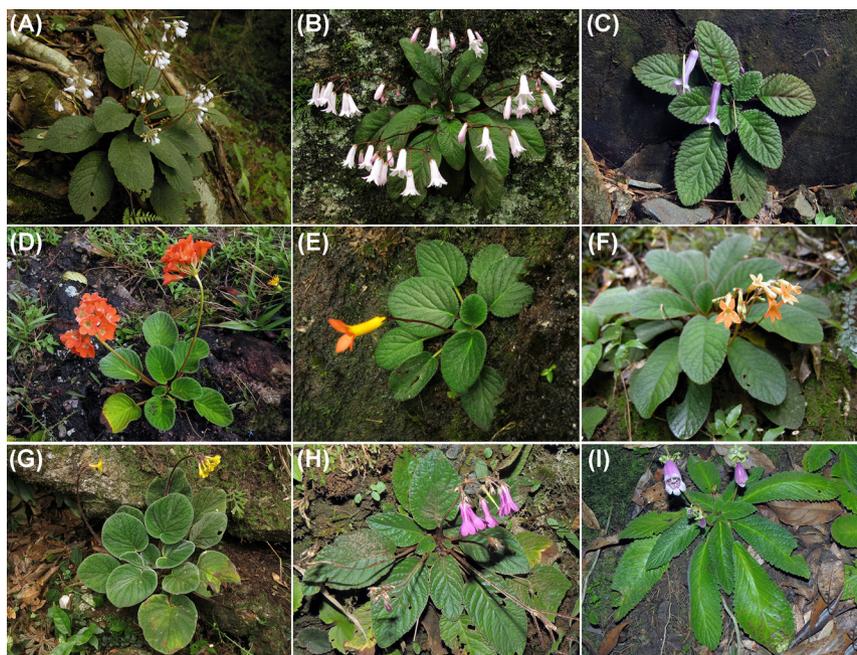


Figure 4. The species with similar leaves of *Oreocharis reticuliflora*. (A) *O. benthamii* var. *reticulata*, (B) *O. maximowiczii*, (C) *O. tubiflora*, (D) *O. flavida*, (E) *O. dasyantha*, (F) *O. sinohenryi*, (G) *O. jasmnina*, (H) *O. xiangguiensis*, (I) *O. chieniai*. Photo credit: (A–G) Li-Hua Yang; (H–I) Peng-Wei Li.

(Chun) Mich. Möller & A. Weber, *O. flavida* Merrill, *O. dasyantha* Chun, *O. jasminina* S.J. Ling, F. Wen & M.X. Ren (Ling et al. 2020), *O. chienii* (Chun) Mich. Möller & A. Weber and *O. tubiflora* K.Y. Pan. Nevertheless, *O. reticuliflora* evidently differs from all these species in the shape, structure and color of the flowers (Fig. 4).

### Additional specimen examined (paratypes)

China, Sichuan Province: Xuyong County, Longfeng Town, 773 m a.s.l., 28°15'10"N, 105°28'22"E, 4 Aug 2012, Xin-Fen Gao et al. HGX10931 (CDBI!); *ibid.*, 13 Mar 2013, Xin-Fen Gao et al. HGX11332 (CDBI!); *ibid.*, 12 Jun 2013, Xin-Fen Gao et al. HGX12055 (CDBI!).

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### Data availability statement

This article has no new data

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