Oreocharis parviflora, a new species of Gesneriaceae from northwestern Yunnan, China

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Abstract

A new species of Gesneriaceae, Oreocharis parviflora, is described and illustrated from Lanping County, northwestern Yunnan Province, China. The new species is morphologically similar to O. henryana in the shape and color of corolla, numbers of stigma, stamen and staminode characteristics, but it can be easily distinguished by the shape of leaf blade, indumentum characters of leaf blade, petiole, peduncle and pedicel.

Key words: Oreocharis, Alpine plant, New taxon, Flora of Yunnan

Introduction

After ten genera with the vast majority associated species were merged into the enlarged Oreocharis Bentham (1876: 1021) based on molecular and morphological evidence (Chen et al. 2014, Möller et al. 2011a, 2011b, 2014), including several species described in the last few years after the redefinition (Cai et al. 2015, Chen et al. 2015, 2016, Do et al. 2017, Li & Li 2015, Möller 2015, Tan et al. 2015, Wei et al. 2016, Yang et al. 2015a, 2015b, 2017), Oreocharis s.l. now consists of ca. 110 species and 13 varieties mainly distributed in southeastern Asia and southern, southwestern China (Chen 2016, Li & Wang 2004, Wang et al. 1990, 1998). Oreocharis is nearly endemic to China with 108 species and 13 varieties mainly in southern and southwestern China, one endemic each in Japan and Thailand, two each in India and Bhutan, and three each in Myanmar and Vietnam (Chen 2016).

In 2015, an unknown species of Gesneriaceae was collected during field investigations in northwestern Yunnan, China. We confirmed that it is a member of Oreocharis based on the flowering plants which we cultivated in Lijiang Alpine Botanical Garden. The examination of the specimens and the related literature of the genus reveals that its morphological characters do not fit any known species of Oreocharis, so we concluded that this plant represents a species new to science. Here, the new species, O. parviflora, is described and illustrated, and its morphological characters are compared with the closely related species O. henryana Oliver in Hooker (1890: tab. 1944).

Taxonomy treatment

Oreocharis parviflora Lei Cai & Z.K. Wu, sp. nov. (Figs. 1 & 2)

Diagnosis:—Oreocharis parviflora resembles O. henryana in floral characteristics, but can easily be distinguished from the latter by having petiole densely covered by rust-brown villous hairs, leaf blade elliptic to oval, leaf surface rugose and with depressed and reticulate veinlets, adaxially densely with appressed pubescence, abaxially with white or rust-brown pubescence, along veins densely with rust-brown villous hairs, veins depressed adaxially and prominent abaxially, peduncle and pedicel sparsely with rust-brown villous hairs and glandular-puberulence, calyx with 5 lobed lobed to base and broadly lanceolate.
Type:—CHINA. Yunnan: Nujiang Prefecture, Lanping County, Lajing Town, Jiulong Village, Hongtujian, 26°30' N, 99°14' E, elev. ca. 1915 m, on moist rocks in a valley (cultivated in Lijiang Alpine Botanical Garden), in flowering, 29 September 2016, Z.K. Wu et al. C2016055 (holotype: KUN!, isotype: KUN!).

FIGURE 1. Oreocharis parviflora Lei Cai & Z.K. Wu.—A. Plant with flowers.—B. Adaxial leaf surface showing appressed pubescent hairs.—C. Abaxial leaf surface showing pubescent and villous indumentum.—D. Pistil and calyx.—E. Corolla spread out for showing stamens and staminode.—F & G. Flowers.—H. Peduncle showing pubescent and villous indumentum.

Perennial herbs, rhizomatous, short. Leaves basal, with long petioles, petiole 0.5–4.5 cm long, densely rust-brown villous, leaf blade surface rugose, with depressed and reticulate veinlets, elliptic to oval, 2–6.5 × 1.2–3.5 cm, adaxially densely appressed pubescent, abaxially white or rusty-brown pubescent, densely rusty-brown villous along veins, lateral veins 4–6 on each side of midrib, subsidence adaxially and prominent abaxially, apex rounded, base cuneate, margin crenate to crenulate or triangular serrated. Cymes axillary 1–4, inflorescence 6–12-flowered; peduncle 5–10 cm long, ca. 2 mm in diameter, glandular pubescent and sparsely rusty-brown villous; bracts 2, linear to subulate, often deciduous, ca. 3 × 0.5 mm, outside villous, margin entire; pedicel 0.4–2.8 cm long, ca. 3 mm in diameter, glandular pubescent and sparsely rust-brown villous. Calyx 5-parted to base, lobes equal, broadly lanceolate, ca. 4 × 1 mm, outside sparsely pubescent and rust-brown villous, inside glabrous. Corolla dark purple to purplish brown with yellowish, 5–7 mm long, outside glabrous, tube campanulate, 3–5 mm long, ca. 4 mm in diameter; limb 2-lipped; adaxial lip 2-lobed to middle, abaxial lip 3-lobed to base, all lobes semiobicular, 1.1.5 × 1.5 mm. Stamens 4, ca.
4 mm long, adnate to corolla 1–1.5 mm from base; filaments flattened, glabrous; anthers broadly oblong, 2-loculed, dehiscing longitudinally, connective glabrous; staminode 1, ca. 1 mm long, adnate to corolla ca. 1 mm from base. Disc ca. 0.8 mm high, entire. Pistil glabrous, 5–6 mm long; ovary cylindrical, 4–5 mm long; style ca. 1.5 mm long; stigma 1, disc-shaped. Capsule linear, 1.5–2.8 cm long, ca. 2 mm in diameter.

**FIGURE 2.** Oreocharis parviflora Lei Cai & Z.K. Wu.—A. Plant in cultivation.—B. Plant in the wild.—C. Adaxial leaf surface.—D. Abaxial leaf surfaces, petioles, and roots.—E. Inflorescence.—F & G. Side and upper views of flowers.—H. Opened flower.—I. Flower with corolla removed showing stamens.

**Distribution and Ecology:**—Oreocharis parviflora is currently known only from the type locality in a valley along Lancang River by one population with ca. 200 individuals. This species was observed to grow on moist rocks with mosses and other epiphytes, and occasionally shallow surface soil, in places with sufficient seasonal run-off water, under evergreen broad-leaved forests in Lajing Town, Lanping County, Nüjiang Prefecture, northwestern Yunnan, China.

**Phenology:**—Flowering from September to October; fruiting from October to November.

**Etymology:**—The specific epithet ‘parviflora’ derives from the Latin prefix, parvi-, small, and the Latin suffix, -flora, of flower, referring to the relatively small flowers of the new species. This species are among those with the smallest flowers in the genus of Oreocharis. The Chinese name in Pinyin is “Xiǎo Huâ Mǎ Líng Jûtái”.

**Taxonomic affinities:**—Oreocharis parviflora morphologically resembles *O. henryana* (Fig 3) in having calyx with five lobes lobed to base, corolla purple and throat not constricted, tube campanulate, anthers broadly oblong, 2-
loculed, and dehiscent longitudinally, and stigma 1 and disc-shaped. However, *O. parviflora* can be easily differentiated from the latter by the indumentum characters and the shape of leaf blade, petiole, peduncle, and pedicel. The detailed characters of the two related species are provided in Table 1.

![Figure 3](image)

**Figure 3. Oreocharis henryana** Oliv.—A&B. Habitat.—C. Adaxial leaf surfaces.—D. Abaxial leaf surfaces.—E. Inflorescence.—F & G. Side views of flowers.—H. Upper view of flower showing mouth.—I. Pistil with calyx and corolla spread out showing stamens and staminode.

**Table 1. Comparison of morphological characters of Oreocharis parviflora and O. henryana**

<table>
<thead>
<tr>
<th>Characters</th>
<th><em>O. parviflora</em></th>
<th><em>O. henryana</em></th>
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</thead>
<tbody>
<tr>
<td>Shape of leaf blade</td>
<td>elliptic to oval, base cuneate, apex rounded</td>
<td>narrowly oblong to lanceolate, base cuneate to auriculate, apex acute to obtuse</td>
</tr>
<tr>
<td>Leaf surface</td>
<td>rugose, with depressed and reticulate veinlets</td>
<td>indistinct</td>
</tr>
<tr>
<td>Leaf indumentum</td>
<td>adaxially densely appressed pubescent, abaxially white or rust-brown pubescent, densely rust-brown villous along veins</td>
<td>adaxially pubescent to densely pubescent, abaxially densely light brown pannose</td>
</tr>
<tr>
<td>Leaf veins</td>
<td>depressed adaxially and prominent abaxially</td>
<td>indistinct</td>
</tr>
<tr>
<td>Leaf petiole</td>
<td>densely rusty-brown villous</td>
<td>densely light brown pannose</td>
</tr>
<tr>
<td>Indumentum characters of peduncle and pedicel</td>
<td>glandular pubescent and sparsely rusty-brown villous</td>
<td>red to purple glandular pubescent to villous</td>
</tr>
<tr>
<td>Calyx lobes</td>
<td>broadly lanceolate</td>
<td>linear-lanceolate</td>
</tr>
<tr>
<td>Lip lobes</td>
<td>upwards</td>
<td>fold outward</td>
</tr>
</tbody>
</table>
Acknowledgments

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