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Additional Notes on Chinese *Listera* (Orchidaceae)

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ABSTRACT. Two new species from China, *Listera microphylla* S. C. Chen & Y. B. Luo and *L. fangii* Tang & Wang ex S. C. Chen & G. Zhu, are described and illustrated. *Listera megalochila* (S. C. Chen) S. C. Chen & G. Zhu is elevated in status from varietal to species level based on characters of the floral lip. Their affinities with other related species of *Listera* are briefly discussed.

Key words: China, *Listera*, Orchidaceae.

Listera R. Brown is a genus of ca. 35 species, mainly distributed in boreal and temperate regions of the Northern Hemisphere, with a few species extending to Taiwan and Vietnam to the south. The genus is easily distinguishable by the single pair of simple, opposite, leaves with secondary venation reticulate near the middle of the plant and a flower with a bilobed lip that is commonly much larger than the sepals and petals. Twenty-one species and four varieties have been previously reported from China (Chen & Luo, 1999).

In preparing a revised manuscript of this genus for the *Flora of China* (English edition), the specimens preserved in PE have been carefully re-examined, and the following additions and changes are made:

- 1. *Listera microphylla*** S. C. Chen & Y. B. Luo, sp. nov. TYPE: China. NW Yunnan: Gong Shan Co., 2500 m, Oct. 1935, C. W. Wang 67264 (holotype, PE). Figure 1A, B.

Species nova insignis, *L. mucronatae* subsimilis, a qua bene differt planta parvula 5–11 cm alta, caule aereo brevissimo (6–20 mm longo), foliis multo minoribus 6–8 × 7–9 mm, floribus minoribus.

Terrestrial herb, 5–11 cm tall; rootstock short, with several ± fleshy roots. Aerial stem 6–20 mm long below the single pair of leaves, glabrous. Leaves 2, opposite, sessile, orbicular-ovate, 6–8 × 7–9 mm, obtuse-acute at apex, slightly fleshy, secondary venation densely reticulate, covered with minutely glandular hairs on both sides, the margin

nearly entire or slightly undulate. Peduncle 2.6–6 cm long, glabrous, sometimes with a sterile bract in upper part; raceme 1.6–3 cm long, glabrescent or loosely glandular-hairy on rachis, 3- or 4-flowered; bracts subovate or ovate-lanceolate, 3–4 × 2 mm; pedicel 1.5–2 mm long, slender, glabrous; ovary almost as long as the pedicel, glabrous. Flowers greenish white, glabrous; dorsal sepal oblong-ovate, ca. 3.5 × 1.5 mm, 1-nerved, obtuse at apex; lateral sepals lanceolate-ovate, slightly oblique, similar in size to dorsal one, carinate distally; petals similar to dorsal sepal, but a little shorter and narrower; lip obovate-cuneate in outline, ca. 5.2 mm long, 3.5 mm wide in upper part, 1 mm wide near the base, bilobed at apex, with an indistinct keel from the base terminating in a short mucro in the sinus; lobes broadly oblong, ca. 1.4 × 1.6 mm, 3-nerved, the margin nearly entire; column suberect, 1.5–2 mm long; anther ca. 1 mm long. Capsules ellipsoid, erect, ca. 3 mm long, 2.5 mm thick.

Distribution. This species is known only from the type collection at an altitude of 2500 m on a grassy slope.

This species is similar to *Listera mucronata* Panigrahi & J. J. Wood, but differs in having a much shorter stem and much smaller leaves. It is close to *L. brevicaulis* King & Pantling, but differs in having a slightly pubescent scape and small auricles at the base of the lip. *Listera micrantha* may also be close to the newly described species but has a short, trilobed lip and pubescent scape.

- 2. *Listera fangii*** Tang & Wang ex S. C. Chen & G. Zhu, sp. nov. TYPE: China. Sichuan: Guang Xiang [Dujiangyan], 800–1000 m, 14 July 1928, W. P. Fang 2204 (holotype, PE). Figure 1C, D.

Species *L. nipponicae* affinis, a qua imprimis differt pedunculo et racemo fere usque ad 20 cm longo quam caule multo longiore, labello infra medium unguiculato, auriculis late ovato-deltaideis.

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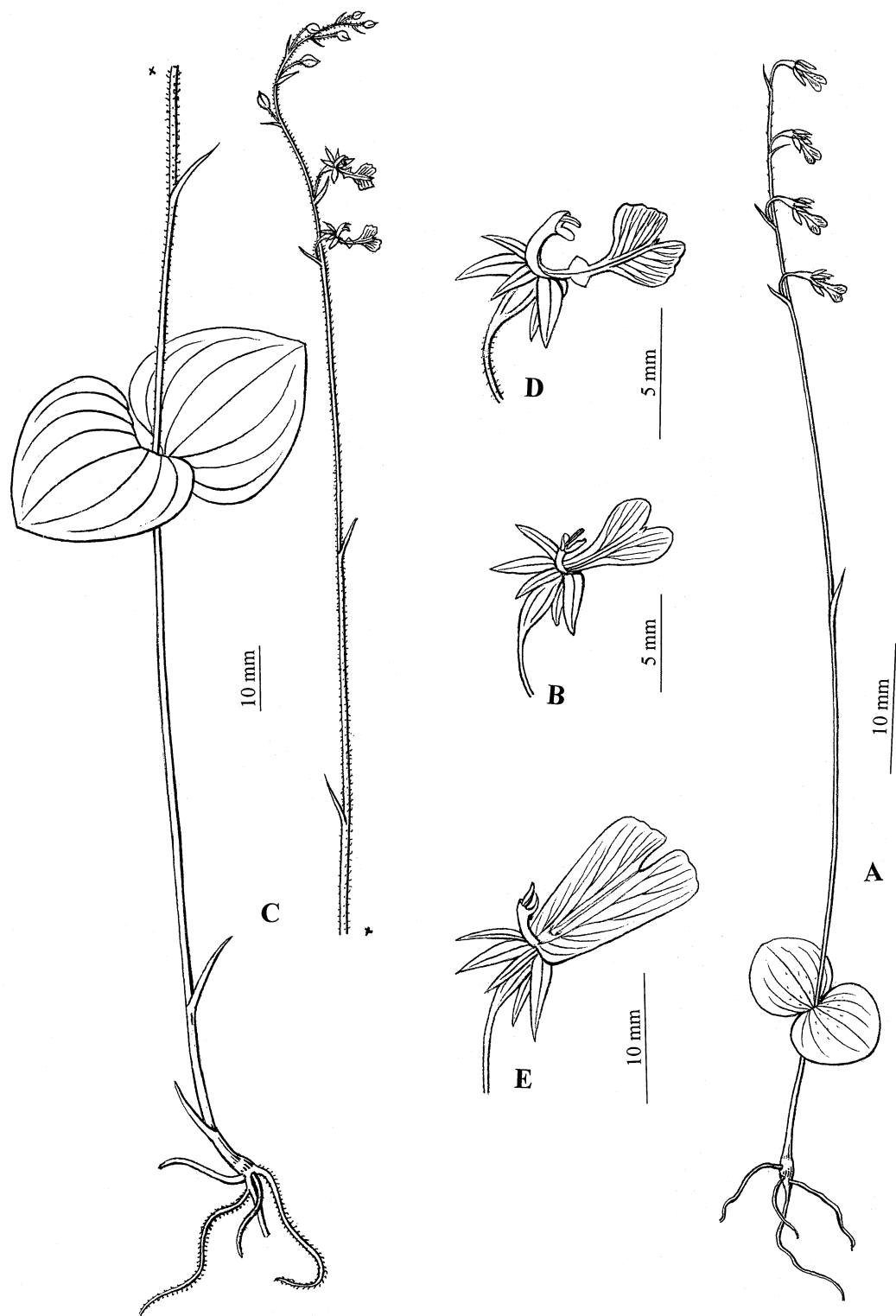


Figure 1. A, B. *Listera microphylla* S. C. Chen & Y. B. Luo. —A. Plant. —B. Flower. C, D. *Listera fangii* Tang & Wang ex S. C. Chen & G. Zhu. —C. Plant. —D. Flower. —E. *Listera megalochila* (S. C. Chen) S. C. Chen & G. Zhu, flower.

Terrestrial herb, ca. 29 cm tall; rootstock short, with several somewhat fleshy roots. Aerial stem 10.5 cm long below the single pair of leaves, glabrous, enclosed in basal part by a tubular sheath over 2 cm long. Leaves 2, opposite, subsessile, ovate-orbicular, $2.4\text{--}2.8 \times 2.8\text{--}3.0$ cm, rounded-acute at apex, broadly cuneate-subcordate at base, minutely puberulous on upper surface, entire-margined. Peduncle up to 15.3 cm long, covered with glandular hairs, usually with a sterile bract in lower part; raceme ca. 4.5 cm long (not completely mature), glandular-hairy on rachis, 11-flowered; bracts subovate-oblong, $1.5\text{--}2.5 \times 0.8$ mm, \pm glandular-hairy; pedicel 3.5–4.5 mm long, glandular-hairy; ovary ca. 2 mm long, loosely granular-hairy or glabrescent. Flowers glabrous; sepals ovate-oblong, ca. 2×0.8 mm, obtuse at apex, 1-nerved, lateral ones slightly oblique; petals similar in outline to dorsal sepal but slightly narrower; lip ca. 5 mm long, below the middle contracted into a claw ca. 2.8×0.8 mm, and on either side with a broadly ovate-deltoid auricle ca. 0.8 mm long; the upper part \pm fan-shaped, ca. 2×3 mm, bilobed deeply to half-way; column suberect, ca. 2 mm long.

Distribution. Known only from the type locality.

This new species is similar to *Listera nipponica* Makino but is easily distinguishable by its unusual floral lip, which is composed of a basal claw and an apical limb, split flower from peduncle, the peduncle elongate and much longer than either aerial

stem or raceme, and leaf upper surface minutely puberulous.

- 3. *Listera megalochila*** (S. C. Chen) S. C. Chen & G. Zhu, stat. nov. Basionym: *Listera grandiflora* Rolfe var. *megalochila* S. C. Chen, Acta Phytotax. Sin. 25(6): 473. 1987. TYPE: China. Sichuan: Dajin Xian, 2800 m, 27 June 1958, X. Li 77925 (holotype, PE). Figure 1E.

Listera megalochila is similar to *L. grandiflora* Rolfe in having large flowers, lips ca. 1.6–1.7 cm long and deeply bifid, sinus entire, and columns 5–7 mm long, and was first published as a variety of the latter species. However, the floral lip obovate-oblong, 5 mm wide at base, more than half of lip width, and presence of a basal V-shaped nectary in *L. megalochila* qualifies its specific status in the genus; in *L. grandiflora* the floral lip is obovate-cuneate, 2–3.5 mm wide at base, less than half of lip width, and without nectar.

Distribution. This species is known from forested slopes in Dajin in Kangding Xian in western Sichuan. It is usually found above 2800 m.

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