Ann. Bot. Fennici 50: 87–90 ISSN 0003-3847 (print) ISSN 1797-2442 (online)
Helsinki 12 April 2013

Primulina lutvittata (Gesneriaceae), a new species from a limestone cave in Guangdong, China

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Received 7 May 2012, final version received 14 Nov. 2012, accepted 14 Nov. 2012

Wen, F., Zhao, B., Liang, G. Y. & Wei, Y. G. 2013: *Primulina lutvittata* (Gesneriaceae), a new species from a limestone cave in Guangdong, China. — *Ann. Bot. Fennici* 50: 87–90.

Primulina lutvittata Fang Wen & Y.G. Wei, a new species of Gesneriaceae from Guangdong, China, is described and illustrated. It is morphologically similar to *P. fengshanensis*, but differs by several characters of the leaves, cymes, bracts, corollas and anthers.

Recently, after a molecular re-evaluation of the genus *Chirita*, previously monotypic *Primulina* has been redefined to contain more than 130 species (Wang *et al*. 2011, Weber *et al*. 2011). Over the last few years, we carried out floristic surveys on the limestone caves in S and SW China, in Guangxi, Guangdong, Yunnan, Guizhou, Hunan, Hubei, Zhejiang, Jiangxi, Anhui and Chongqing, and found some unknown species of Gesneriaceae. One undescribed species from Guangdong was considered to belong to newly circumscribed *Primulina*, after thorough consultation of the literature (Wang *et al*. 1990, 1998, 2011, Li & Wang 2004, Xu *et al*. 2009, Liu *et al*. 2010, 2011, Pan *et al*. 2010, Wei *et al*. 2010, Huang *et al*. 2011, Shen *et al*. 2011, Tang & Wen 2011, Weber *et al*. 2011, Wu *et al*. 2011a, 2011b, 2012, Xu *et al*. 2011a, 2011b, 2011c, 2012, Hong *et al*. 2012, Huang *et al*. 2012, Li *et al*. 2012, Wen *et al*. 2012a, 2012b). This species is described here.

Primulina lutvittata Fang Wen & Y.G. Wei, *sp. nova* (Fig. 1)

Type: China. Guangdong province, Yangchun county, 22°37´N, 111°50´E, in large limestone caves, alt. 70–84 m, flowering, 29 June 2011 *F. Wen 11062901* (holotype IBK; isotypes IBK, BJFC).

It differs from *P. fengshanensis* in: leaf blade fleshy-leathery and sparsely erect-hirsute; cyme unbranched or 1-branched, rarely 2-branched; bracts opposite, 2, outside sparsely erect-hirsute and inside glabrous; corolla throat with two distinct bright-yellow stripes; anthers sparsely pubescent; filaments sparsely glandular-pubescent and the upper surface of stigma densely puberulous.

Perennials, acaulescent. Rhizome cylindrical, 1.8–3.0 cm long, 0.9–1.3 cm in diameter, glabrous, internodes inconspicuous. Leaves spirally, 8–24, basal or clustered at apex of rhizome, ternate; petiole cylindrical, above recessed, cross-section V-shaped, hirsute, 2.1–4.3 × 0.8–1.2 cm; blade fresh fleshy-leathery, obovate-elliptical, obovate-lanceolate, narrowly elliptical to slightly ovate, 6.0–13.5 × 2.2–3.8 cm, base attenuate to cuneate, margin entire, occasionally inconspicuously crenate, apex acute or acuminate, sparsely erect-hirsute on both surfaces, lateral veins ca. 3 on each side, inconspicuous adaxially and prominent abaxially. Cymes axillary, 3–12,

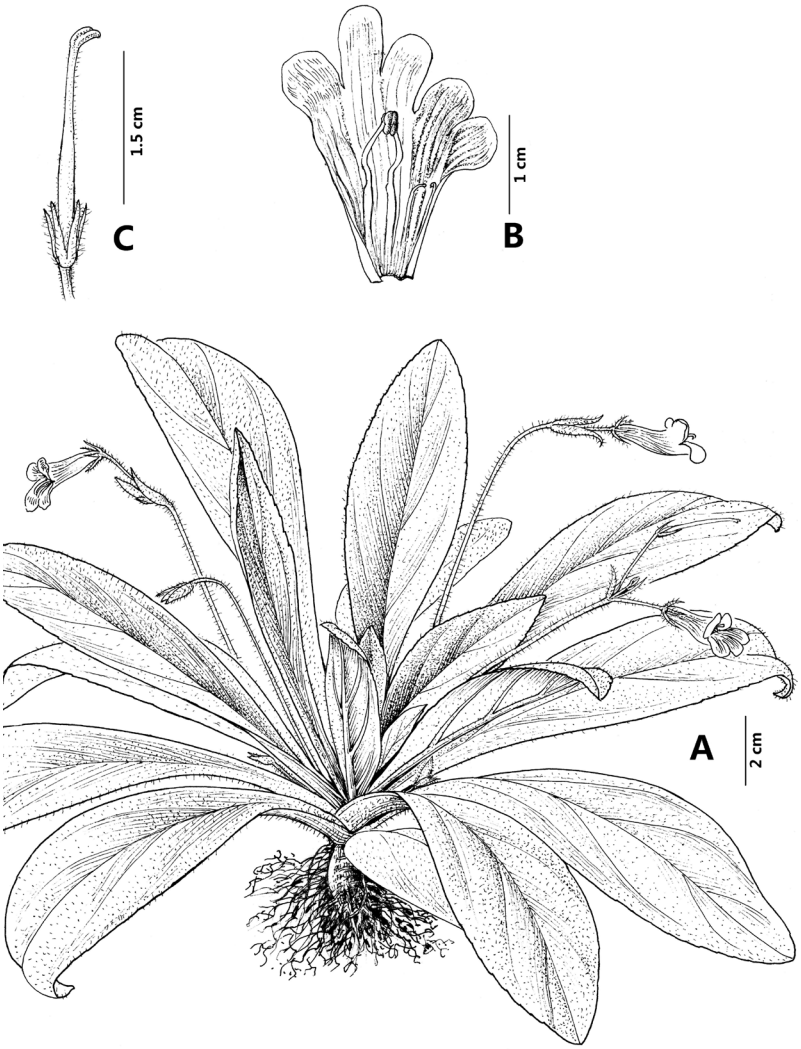

Fig. 1. *Primulina lutvittata* (from the holotype, drawn by W.H. Lin). — **A**: Habit. — **B**: Corolla opened, showing stamens and staminodes. — **C**: Calyx and pistil.

unbranched or 1-branched, rarely 2-branched, generally 1-flowered, occasionally 2–3-flowered, rarely more than 4–5-flowered; peduncle 7.5–12.4 cm long, 0.1–0.15 cm in diameter, erect-hirsute; bracts 2, opposite, broadly lanceolate to lanceolate-ovate, 1.7–2.0 × 0.5–1.1 cm, abaxially hairs same as peduncle, adaxially glabrous, margin entire, apex acute. Pedicel 1.4–2.1 cm long, 0.8–1.0 mm in diameter, puberulent. Calyx 5-divided nearly to base; lobes equal, lanceolate-linear to lanceolate, 6–8 × 1.5–1.8 mm, abaxially sparsely hirsute, margin entire, apex acute. Corolla bright purplish-red, fuchsia or deeply peach-coloured, throat with two distinct bright-yellow strips, 1.8–2.2 cm long, orifice 0.6–0.8 cm in diameter, abaxially short pubescent-glandular, adaxially glabrous; tube narrowly infundibuliform, 1.4–1.5 cm long; limb distinctly 2-lipped, adaxial lip 2-divided to base, lobes slightly oblique ovate, 4.5–5 × 4.8–5.0 mm, obtuse at apex, with 8–10 dark purple or peach-coloured lines inside; abaxial lip 3-divided to middle or slightly over middle, lateral lobes slightly oblique-oblong, 5 × 4.5 mm, obtuse at apex, with 3–5 dark purple or peach-coloured lines inside, central lobe oblong, 6–7 × 4–4.5 mm, obtuse at apex, with 5–6 dark purple or peach-coloured lines inside. Stamens 2, adnate to ca 1.0 cm above corolla base; anthers yellow or slightly orange, subreniform, 2.5–3 × 1.0–1.1 mm, slightly constricted at middle, sparsely pubescent; filaments geniculate close to middle,

Table 1. Comparison of the diagnostic characters of *Primulina lutvittata* and *P. fengshanensis*.

Character	*P. lutvittata*	*P. fengshanensis*
Texture of leaf blade	fleshy-leathery	fleshy
Indumentum of leaf blade	sparsely erect-hirsute	densely appressed pubescent
Cyme	unbranched or 1-branched, rarely 2-branched, generally 1-flowered, occasionally 2–3-flowered, rarely more than 4–5-flowered	2–5-branched, 10–20-flowered or more
Bracts	2, opposite	4, pairwise opposite
Indumentum of bracts	sparsely erect-hirsute, inner glabrous	densely appressed pubescent, inner nearly glabrous
Corolla colour	bright purplish-red, fuchsia or deeply peach-coloured, throat with two distinct bright yellow stripes	fuchsia or purple, colour of throat same as corolla, lacking yellow stripes
Indumentum of anthers and filaments	anthers sparsely pubescent; filaments sparsely glandular-pubescent	anthers and filaments glabrous
Indumentum of stigma	above densely puberulous	glabrous
Flowering time	July–August	September–October

6–7 mm long, sparsely glandular pubescent; staminodes 2, short linear, glabrous, 1.8–2.2 mm long, adnate to 6.5–7.0 mm above corolla base, capitate at apex; disc annular, 0.4–0.5 mm high, margin entire or sometimes slightly erosulate. Pistil 2.2–2.5 cm long; ovary linear, 1.4–1.6 mm long, ca. 1.5 mm in diameter, densely puberulent; style 7.0–8.0 mm long, 0.5–0.6 mm in diameter, puberulent. Stigma green, obtrapeziform, upper surface densely puberulous, apex slightly lobed, 2.4–2.6 mm long. Capsule dehiscent, linear, 2.0–2.5 cm long, ca. 2 mm in diameter, pubescent when young, style persistent, straight.

Primulina lutvittata is rather similar to *P. fengshanensis*; a detailed comparison of the two species is in Table 1.

Acknowledgements

We are grateful to Mr. Wen-Hong Lin for the drawings. This study was financially supported by funds from the Guangxi Natural Science Foundation (2011GXNSFB018050), Science Research Foundation of Guangxi Institute of Botany (Guizhiye11003), Science and Technology Innovation Program of Guangxi Academy of Sciences and West Light Foundation of The Chinese Academy of Sciences.

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