

Cypripedium bouffordianum (Orchidaceae), a new species from western Sichuan, China

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Cypripedium bouffordianum Y.H. Zhang & H. Sun is described and illustrated as a new species of Orchidaceae from western Sichuan, China. It is compared with the morphologically similar *C. guttatum* and *C. yatabeanum*.

Key words: *Cypripedium*, new species, Orchidaceae, taxonomy

The genus *Cypripedium* with about 45 species (Cribb 1997) was established by Linnaeus in the first edition of *Species Plantarum* (Linnaeus 1753). In China, the genus, represented by about 32 species (Chen & Tsi 1998), mainly occurs in southern parts of the country.

The specimens of the species described here were collected during a botanical expedition to western Sichuan in 2004. It is named in honor of David Boufford, the main collector of the type gathering and Assistant director for collections of Herbaria Harvard University. *Cypripedium bouffordianum* belongs to the section *Bifolia* and resembles *C. guttatum* and *C. yatabeanum*.

Cypripedium bouffordianum Y.H. Zhang & H. Sun, *sp. nova* (Fig. 1)

Species ex affinitate C. guttato et C. yatabeno, sed a qua caule brevo, subterraneo, flore pure

flavo-albo, emaculato, bracteia 0.5–1.5 cm longa differt.

TYPE: China. Western Sichuan, Xiangcheng county, 29°6'N, 99°41'E, alpine rocky and grassy place with sparse scrub, between 4000 and 4200 m, 15.VII.2004 D.E. Boufford & H. Sun *et al.* 30759 (holotype KUN; isotype A).

A terrestrial plant 15–25 cm tall, with a creeping rhizome, rhizomes usually more than 1.0 cm long. Stem short, subterranean, slender, with 2–3 tubular sheaths at base. Leaves 2, subopposite, elliptic or ovate, 5–10 cm long, 3–5 cm wide, usually becoming black when dried, sparsely pubescent on dorsal veins. Inflorescence with one yellowish-white flower, terminal; peduncle densely glandular and pubescent, 8–15 cm long; bract ovate-lanceolate, 0.8–1.5 cm long, 0.6–1.2 cm broad, glabrous inside, pubescent on vein and edge; pedicel and ovary pubescent; ovary 1.5–2.0 cm long, 3 mm broad. Flower pure yellowish-white; synsepal ovate-lanceo-

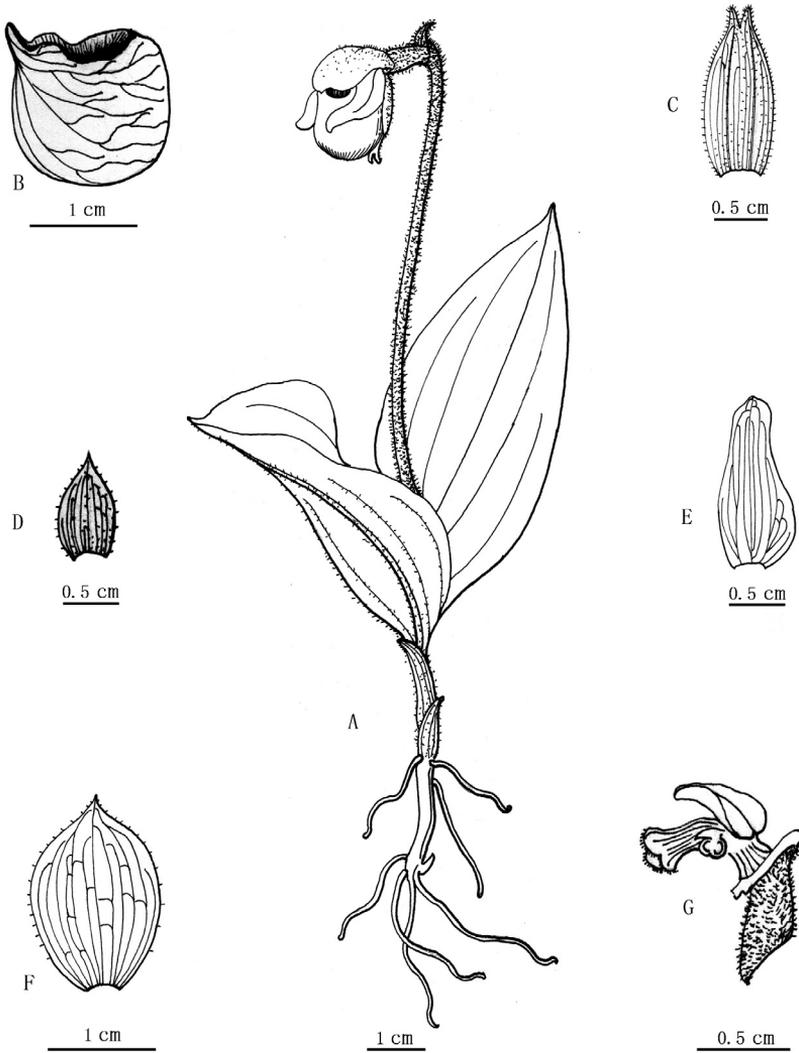


Fig. 1. *Cyripedium bouffordianum* (from holotype). — A: Flowering plant. — B: Lip. — C: Synsepal. — D: Bract. — E: Petal. — F: Dorsal sepal. — G: Column view.

late, greenish-yellow, bifid and acute at apex, 1.0–1.5 cm long, 0.5–0.8 cm wide, pubescent on back; dorsal sepal ovate-elliptic or broadly ovate-elliptic, acute acuminate, 1.5–2.5 cm long, 1.2–1.6 cm wide. Petals ligulate to subpandurate, slightly incurved, embracing lip, 1.5–2.0 cm long, 0.5–0.8 cm broad. Lip glabrous, yellowish-white, pitcher-shaped, 1.6–2.2 cm long, 1.2–1.5 cm wide, with a broad mouth and entire margin. Column 0.75 cm long; staminode ovate-elliptic, 0.5 cm long, 0.3 cm wide, retuse at apex, the edge slightly upward; pistil trifid at apex, upside sliver bigger, other two slivers smaller.

This new species belongs to section *Bifolia* (Morren 1851, Chen & Xi 1987), which

is characterized by two leaves and one-flowered inflorescence, the flowers being white, with purple-or brown-spotted lip and petals; lip urn-shaped, without an incurved apical margin. This section previously included the species *C. guttatum* (Swartz 1800) and *C. yatabeanum* (Makino 1899). The morphological differences between the three species are presented in Table 1.

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Table 1. Morphological comparison among *Cypripedium bouffordianum*, *C. guttatum* and *C. yatabeanum*.

	<i>C. bouffordianum</i>	<i>C. guttatum</i>	<i>C. yatabeanum</i>
Stem	short, subterranean	1.5–10 cm long	9–22 cm long
Bract	0.5–1.5 cm long	1.5–3.5 cm long	2.5–5 cm long
Petal	subpandurate, rounded at apex, slightly incurved, embracing lip, 1.5–2.0 cm long, 0.5–0.8 cm broad	ligulate to subpandurate or spatulate, rounded at apex, partly embracing lip, 1.3–2.0 cm long, 0.5–0.8 cm broad	spathulate, rounded and concave at apex, not embracing lip, 1.2–1.6 cm long, 0.4–0.6 cm broad
Lip	pitcher-shaped, 1.6–2.2 cm long, 1.2–1.5 cm broad	pitcher-shaped, 1.4–2.2 cm long, 1–1.3 cm broad	deeply urceolate, 2.2–2.7 cm long
Flower color	pure yellowish-white, without colorful spots	white with purple or brown spots	pale yellowish green with brown spots

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References

- Chen, S. C. & Tsi, Z. H. 1998: *The orchids of China*. — Chinese For. Publ. House, Beijing.
- Chen, S. C. & Xi, Y. Z. 1987: Chinese cypripediums, with a discussion on the classification of the genus. — In: *Proc. 12th World Orchid Conference*: 141–146. 12th World Orchid Conference Committee, Tokyo, Japan
- Cribb, P. 1997: *The genus Cypripedium*. — Timber Press, Oregon.
- Linnaeus, C. 1753: *Species Plantarum*. I. — Salvius, Stockholm.
- Makino, T. 1899: *Planta Japonenses nova vel minus cognita*. — *Bot. Mag.* 13(149): 91–92.
- Morren, C. 1851: *Les Soulies de la Vierge Marie des Anciens ou les Sabots de Vénus des Mordernes*, Monographie des Cypripèdes. — *Belg. Hort.* 1: 165–183.
- Swartz, O. 1800: *Cypripedium* L. — *Kongl. Vetensk. Acad. Nya Handl.* 21: 250–251.