

# *Burmannia hunanensis* (Burmanniaceae), a new species from Hunan, China

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*Burmannia hunanensis* K. M. Liu & C. L. Long, a new species of the Burmanniaceae from Hunan Province, China, is described and illustrated. The morphological characteristics of *B. hunanensis* and its related species are compared.

Key words: Burmanniaceae, *Burmannia hunanensis*, Hunan, taxonomy

Burmanniaceae is a family of about 15–25 genera and 140–160 species (Wu 1981, Li 1995), or 9 genera and 125 species (Watson & Dallwitz 1999), depending on taxonomic judgment. They are widely distributed in the forests and grasslands of tropical, subtropical and temperate regions. Two genera and about 13 species occur in China (Wu 1981, Li 1995).

During our studies on Burmanniaceae for *Flora Hunanica*, all the specimens of this family that are deposited in the Herbarium of Hunan Normal University (HNNU) were examined. We found one specimen with morphological features that differed from the other *Burmannia* species in China and the neighbouring countries. After a morphological study, literature searches (Hooker 1890, Jonker 1938, Wu 1977, 1981, Li

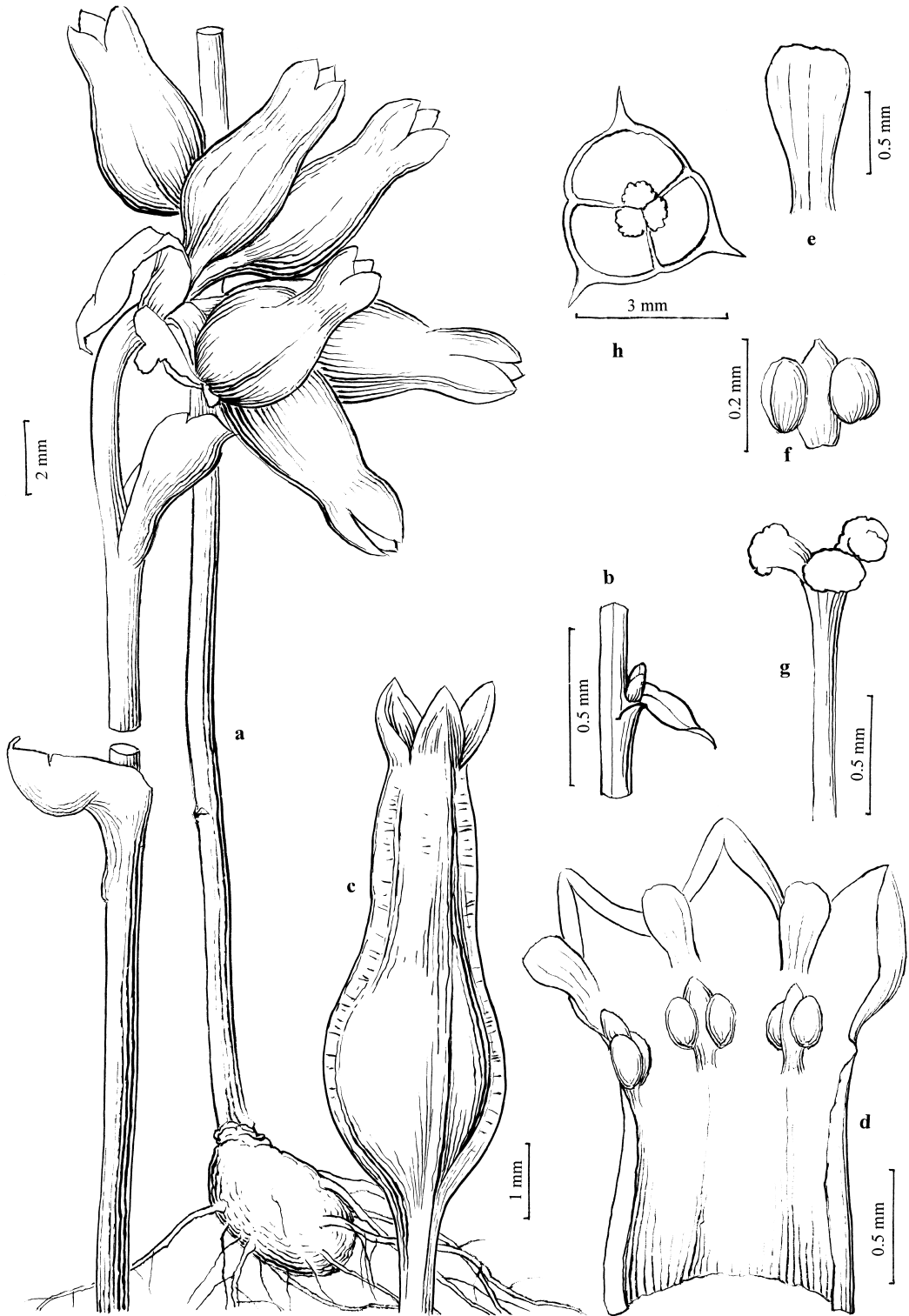
1983, 1995), and examination of many other specimens (including those in PE and KUN), we concluded it represents a new species in the genus *Burmannia*.

***Burmannia hunanensis* K. M. Liu & C. L. Long, *sp. nova* (Fig. 1)**

*Herba affinis B. nepalensi* (Miers.) Hook. f., sed a qua tuberis subterraneis, bulbillis ovoideis axialibus, dichasio 5–8 floribus, connectivo antherarum sine appendice crispata vel calcarata, alis capsulae angustioribus differt.

TYPE: China. Hunan Province, Yizhang County, Mangshan Mountains, alt. 1100 m, under moist forest near stream, 3.IX.1957 Liu Lin-Han 1067 (holotype HNNU).

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**Fig. 1.** *Burmannia hunanensis* K. M. Liu & C. L. Long (from the holotype). — **a**: Plant with flowers and tuber. — **b**: Bulbil. — **c**: Flower. — **d**: Flower opened, showing perianth and stamens. — **e**: Inner lobe. — **f**: Anther and connective. — **g**: Style and stigma. — **h**: Transverse section of capsule. Drawn by Yi-Tao Liu.

Perennial heterotrophic herbs with underground tubers. Tuber 1.2 mm diameter, 2.4 mm long. Stem slender, 4–9 cm tall, 0.9–1.2 mm diameter, lacking a basal leaf rosette. Fibrous roots numerous, slender, cylindrical, branched, yellowish brown, 0.7–2.6 cm long. Leaves reduced, scale-like, 5–7, alternate, triangular-ovate, 2–2.7 mm long, 1.6–2 mm wide, white, with one ovoid bulbil in each leaf axil, without cataphyll. Inflorescence a terminal dichasium, 5–8 flowered; bracts similar to leaves, membranous, 4 mm long; pedicels 1.2–1.8 mm long. Perianth segments 6, in two whorls, yellow, forming a tube at base; outer lobes ovate, 1.8 mm long, 1.1 mm wide, having a single margin; inner lobes smaller, obovate, 1.1 mm long, 0.5 mm wide, forming a tube in lower part, 2 mm long. Wings on outer lobes and ovary 0.4–0.8 mm wide, 4.5–5.0 mm long, narrower in lower part. Stamens 3, opposite to inner lobes; connective triangular-conical, lacking a divergent apical appendage and a basal spur. Ovary inferior, ovoid-globose, 2.7–3.2 mm long, 2.7–3 mm wide (with wing), 3-locular, placentation axile with numerous ovules. Capsule ovoid-globose, 3–3.2 mm diameter (with wing), 3.2–3.5 mm long. Seeds numerous, oblong.

The holotype was collected from Mangshan Mountains in Yizhang County, south Hunan, in 1957 by our botanist, Prof. Liu Lin-Han. Five

individual plants were mounted on one sheet, and deposited in the Herbarium of Hunan Normal University. Mangshan has become a nature reserve and it has been well protected for a long time due to its rich biodiversity. The annual mean temperature is 18–21 °C and the annual precipitation ranges between 1400 and 2000 mm. Previous studies on the flora of Mangshan recorded 2314 species of vascular plants belonging to 838 genera and 214 families (Wu *et al.* 1980, Qi *et al.* 1987, Xiao 1993). Over thirty new species of vascular plants have been described from this nature reserve. Vegetationally, Mangshan belongs to the *Castanopsis* – *Altingia* Forest Domaine of the mid-subtropical evergreen forest zone. The dominant species are mainly from Rosaceae, Theaceae, Lauraceae, Fagaceae, Magnoliaceae, Symplocaceae, and Aquifoliaceae.

*Burmannia hunanensis* resembles *B. nepalensis* (Miers) Hook. f. by having slender stems, 5–7 leaves, a dichasium, and distinct wings. However, they differ in many characters. For example, *B. hunanensis* is a perennial herb with underground tubers, narrower wings, and it lacks a dichotomous apical appendage and a basal spur on the anther connective. A morphological comparison between *B. hunanensis* and *B. nepalensis* is given in Table 1.

**Table 1.** Comparison between *Burmannia hunanensis* and *B. nepalensis*

Features	<i>Burmannia hunanensis</i>	<i>Burmannia nepalensis</i>
Stem	4–9 cm tall	8–11 cm tall
Tuber	present	absent
Leaf	triangular-ovate	elliptical
Bulbil	one in each leaf axil	none
Dichasium	usually 5–8 flowers	sometimes 1–2 flowers only
Flower color	yellow	white
Outer perianth lobes	ovate	triangular-oblong
Inner perianth lobes	obovate	ovate
Connective	triangular-conical, lacking a divergent apical appendage and a basal spur	elliptical, with a divergent apical appendage and a linear basal spur
Ovary	ovoid-globose, 2.7–3.2 mm diam.	nearly globose, 1–2 mm diam.
Ovary wings	0.4–0.8 mm wide	1–3 mm wide
Capsule	Ovoid-globose	nearly globose
Distribution	Southern Hunan	Himalayas to Southeast Asia and central China

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