

Dendrobium hekouense (Orchidaceae), a new species from Yunnan, China

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Dendrobium hekouense Z.J. Liu & L.J. Chen *sp. nova* (Orchidaceae) is described from southeast Yunnan of China. It belongs in the section *Dendrobium* and is more or less akin to *D. wangliangii*, from which it differs by its dorsal sepal larger than petals, lateral sepals broader than long, cylindrical mentum 1.2–1.3 cm long, and a trilobed lip.

Dendrobium is a large orchid genus of some 1000 species, ranging from tropical and subtropical Asia to Oceania. At least 74 species have been recorded from China, mainly in the regions south of the Qingling Mountains, particularly in southern Yunnan (Tsi 1999). During a botanical trip to the limestone region of Malipo and Hekou in southeast Yunnan in August of 2008, several clumps of small orchids were seen growing on oak tree trunks in the evergreen broad-leaved forests at elevations between 1000 and 2000 m (Fig. 1A). The flowers of these orchids are rather large and showy (Fig. 1C–F). The orchids were photographed in the field, where a survey of the habitat was made. Two clumps of this species were collected from Hekou (ca. 22°30'N) of southeast Yunnan, China in August 2008, and then cultivated in our garden (Shenzhen). It is clearly an undescribed species of *Dendrobium*, possibly belonging to the section *Dendrobium* because it has 2–3 terminal and lateral leaves sheathing and clasping the stem at base, a lateral inflorescence, a long column-foot forming with

lateral sepals a cylindrical mentum, and a pubescent lip lacking a long claw at base.

Dendrobium hekouense Z.J. Liu & L.J. Chen, *sp. nova* (sect. *Dendrobium*) (Figs. 1–2)

Species nova Dendrobio wangliangii similis, a quo differt sepalo intermedio quam petalis majore, sepalis lateralibus oblique ovato-triangularibus latioribus quam longioribus, mento cylindrico 1.2–1.3 cm longo, labello trilobo.

TYPE: China. Yunnan, Hekou, growing on tree trunk, alt. 1000 m, 23.VIII.2008 Z. J. Liu 4093 (holotype NOCC).

A small plant. Pseudobulbs aggregate, sub-ellipsoid, 6–12 mm long, 4–6 mm wide, base contracted and shortly stalked, with 2–3 nodes, internodes 2–6 mm long. Leaves coriaceous, narrowly elliptic to oblong-elliptic, 1.1–1.8 cm long, 3.5–6 mm wide, apex acute, base shortly petioled and sheathing. Inflorescence arising



Fig. 1. *Dendrobium hekouense* (in the type locality). — **A:** Plants on tree trunk. — **B:** Rhizome and pseudobulbs. — **C:** Flowering plants. — **D:** Pollinia. — **E:** Flower, longitudinal section. — **F:** Flower, side view.

from leafless pseudobulb, lateral, 1-flowered; peduncle 4–4.5 mm long, with 1 membranous cup-shaped sheath at base; bracts membranous, ovate, 2–2.5 mm long; pedicel and ovary 6–7 mm long. Flowers spreading horizontally. Sepals and petals white, with a purple midvein, abaxially grey-green; lip white, densely maroon-spotted on disc and lateral lobes and with purple-red spots on mid-lobe; dorsal sepals broadly ovate, 7–7.5 mm long, 5.5–6 mm wide, apex acute; lateral sepals obliquely ovate-triangular,

11–12 mm long, 13–15 mm wide, apex acute; mentum cylindrical, 1.2–1.3 cm long, 6–8 mm wide, rounded-bilobed at tip; petals obovate-elliptic, 7.5–8 mm long, 4–4.5 mm wide, apex acute; lip pubescent adaxially, 3-lobed; lateral lobes long-subtriangular, 1.3–1.4 cm long, 5–5.5 mm wide; midlobe reniform, 3.5–4 mm long, 7–7.5 mm wide, apex shallowly 2-lobed, margins irregularly denticulate; column thick and short, ca. 1 mm long; column-foot 1.3–1.4 cm long; operculum conical, grey-green, front part

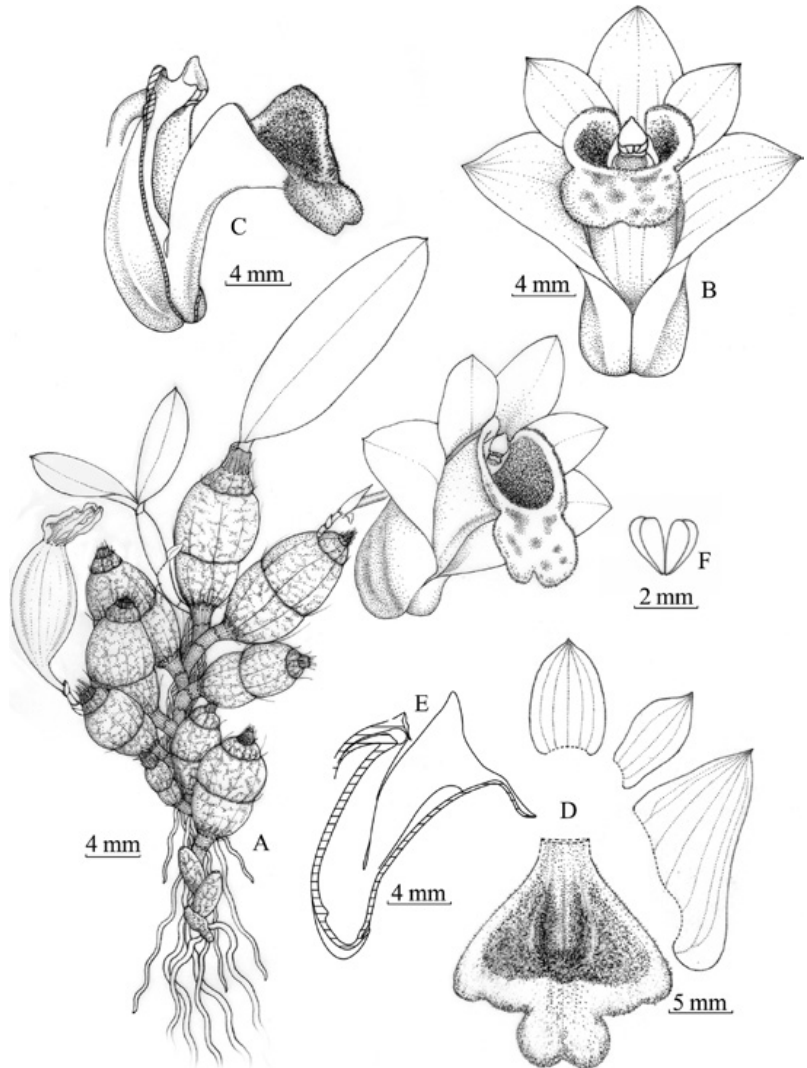


Fig. 2. *Dendrobium hekouense* (from the holotype). — **A:** Flowering and fruiting plant. — **B:** Flower, front view. — **C:** Column and lip, side view. — **D:** Dorsal sepal, petal, lateral sepal and lip, front view. — **E:** Column and lip, longitudinal section. — **F:** Pollinia.

spotted with purplish toward base. Flowering in August–September.

Dendrobium hekouense is similar to *D. wangiianii* (cf. Hu *et al.* 2008) from which it differs by its dorsal sepal larger than petals, obliquely ovate-triangular lateral sepals broader than long, cylindrical mentum 1.2–1.3 cm long, and a trilobed lip.

HABITAT ECOLOGY. *Dendrobium hekouense* grows in primary evergreen broad-leaved forests on limestone slopes in subtropical highland to the south of the Tropic of Cancer. The average annual temperature is 17.6 °C, the average temperature of the coldest month 10.1 °C, and that of the hottest month 23 °C. The rainy

season comes with the SW monsoon, continuing from April to October, when the region is covered by dense fog in the morning and night. There is no fog in the dry season that begins in November, running onto March. The forests where *D. hekouense* dwells are mainly dominated by species of Fagaceae, such as those of *Quercus*, *Lithocarpus* and *Castanopsis*. *Dendrobium hekouense* was often seen growing on their trunks. The canopy density of these forests is often 80%–85%, but *D. hekouense* often grows in more or less sunny places. The common underplants there are *Machilus rufipes*, *Brassiopsis glomerulata*, *Luculia pinciana*, *Zanthoxylum armatum*, *Cornus oblonga*, *Cynoglossum*

zeylanicum, *Artemisia indica*, *Impatiens arguta*, *Pilea howelliana* and *Pilea glaberrima*.

The flowering period of *D. hekouense* is from August to September, in the middle of the rainy season. It is interesting to note that the orchid almost always grows on the ground-facing side of the tree trunks, and the flower, as well as the lip, spreads horizontally with the mouth of the lip and the cylindrical mentum in transverse direction. Therefore, the flowers can prevent the influx of rainwater into their large mentum. In the field no water was seen in the mentum of any flowers indeed.

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