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## A New Species of *Cymbidium* (Orchidaceae) from Tibet (Xizang), China

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ABSTRACT. *Cymbidium chawalongense* C. L. Long, H. Li & Z. L. Dao (Orchidaceae), collected from southeast Xizang (Tibet), China, is described as new. The new species is similar to *C. floribundum* Lindley in morphology and habitat, but differs in having an erect scape, very widely spread flowers, pale green sepals and petals, and a white, non-mottled lip.

*Key words:* China, *Cymbidium*, Orchidaceae, Tibet, Yunnan.

There are about 48 species in the genus *Cymbidium* Swartz, distributed in tropical and subtropical regions of Asia and Australia (Chen, 1999). About 29 species are distributed in China, of which 28 are found in Yunnan Province (Chen, 1999). This may suggest that the Chinese center of species diversity of the genus is Yunnan. Because of the particular significance of *Cymbidium* to horticulture and traditional culture in China and its neighboring countries, the discovery of a new member of the genus will stimulate much interest among horticulturists and orchid enthusiasts (Yang et al., 1993). The new *Cymbidium* species was collected during a recent biodiversity expedition and appears different from all other species in the genus.

The distribution of this species includes the type locality in southeast Tibet and extends into northwest Yunnan. This area lies at the conjunction of two of the world's most biologically rich and most threatened environments, i.e., the Indo-Burma and South-Central China hotspots of biodiversity (Myers et al., 2000). Some 5000 higher plant species have been recorded from the Gaoligong Mountains between the great Salween and Irrawaddy Rivers (Li et al., 2000) in this region. Among them, 266 species are orchids. At least 10 orchid species, including *Cymbidium gongshanense* H. Li & K. M. Feng, *Calanthe dulongense* H. Li, *Paphiopedilum markianum* Fowlie, and *Coelogyne tarongense* Handel-Mazzetti, are considered endemic to this region (Li et al., 2000). This new orchid species is also endemic to the Gaoligong Mountains.

***Cymbidium chawalongense*** C. L. Long, H. Li & Z. L. Dao, sp. nov. TYPE: China. Xizang [Tibet]: Chayu Xian, Chawalong, 2300 m, in coniferous forest, flowers pale greenish, 14 May 2001, *Gaoligongshan Expedition 13727* (holotype, KUN). Figure 1.

Species nova *Cymbidio floribundo* affinis, sed scape erecto 22 cm longo, floribus patulis, sepalis et petalis chloroticis, labello albo non maculato differt.

Plants terrestrial, to 43 cm tall, with a short rhizome. Pseudobulbs congested, cylindrical, slightly flattened, 1.5 cm long and thick, enclosed in cataphylls and leaf bases. Cataphylls 3 or 4, widely ovate and lanceolate, 2–5.5 × 2–2.5 cm at base, acuminate at apex. Leaves usually 5 per pseudobulb, dark green, thinly coriaceous, slightly arching, 27–43 cm long (including sheath), 1.4 cm broad, apex acute and unequally retuse, base slightly narrowed, plicate, articulate, midrib depressed above and prominent below; sheath green, 2.5–5 cm long. Scape lateral from pseudobulb base, erect, robust, to 22 cm tall; peduncle pale green, 9 cm long, 3–4 mm diam., base enclosed in 5 or 6 cataphylls; raceme green, 10 cm long, loosely 17-flowered; pedicel and ovary green-tinged, cylindrical, 3.3 cm long, shortened upward, the terminal one 2.5 cm long; bracts small, green, deltoid, 2–2.3 cm long; flowers widely spread, to 4 cm across; sepals and petals pale green, lip white, not mottled; middle sepal oblong, 2 cm long, 3 mm broad, apex acute, margins slightly recurved, 3-nerved; lateral sepals similar to middle but falcately curved, 2.2 × 0.4 cm, 5-nerved; petals elliptic, 1.8 × 0.7 cm, margins slightly recurved, 5-nerved; lip sub-oblong, to 1.8 cm, 3-lobed, lateral lobes erect, to ca. 1.5 mm; mid-lobe subovate, 1 × 0.5 cm, smooth, recurved; disc with 2 yellow lamellae; column semicylindrical, arcuate, erect, to 1.5 cm long, to 4–5 mm broad at upper part. Anther yellow, cucullate; pollinia 2, waxy, ovoid, ca. 1 mm diam., stipe short, viscid disc oblong; ovary ca. 2.5 mm diam., stigma transversely oblong, deeply concave. Flowering in May.



Figure 1. *Cymbidium chawalongense* C. L. Long, H. Li & Z. L. Dao. —A. Flowering plant. —B. Middle sepal, petal, lateral sepal, and lip. —C. Pollinia, stipe, and viscid disc. Drawn by Yitao Liu, from the holotype collection.

*Distribution.* Endemic to China from Chayu in southeastern Xizang (Tibet) and northwestern Yunnan. Populations were occasionally seen in Gongshan Xian and Weixi Xian of northwestern Yunnan, but specimens were not collected from these locations to protect the natural populations. Two living collections are being kept in the Kunming Botanical Garden. We saw the living plants in forests three times and in the local markets two times. The new species was found in coniferous forest, evergreen forest, and secondary successions, at altitudes from 1600 to 2300 m. Forests there mainly consist of *Pinus yunnanensis* Franchet, *Betula* sp., *Acer* spp., *Cinnamomum* spp., *Litsea* spp., *Lindera* spp., and *Lithocarpus* spp. Understory plants are represented by *Excoecaria acerifolia* F. Didrichsen, *Campylotropis* spp., and *Desmodium* spp.

*Notes.* Both *Cymbidium chawalongense* and *C. floribundum* are members of subgenus *Cymbidium*. They are very similar in morphology by having smaller flowers, lip and column separated, and two pollinia. Their natural habitat is also similar. They can, however, be easily distinguished because of

the very opened flowers, pale green sepals and petals, and the white, non-mottled lip of the new species.

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