

Notes on some taxa of *Cymbidium* sect. *Eburnea*

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Abstract A new species and a new variety of Orchidaceae, *Cymbidium concinnum* Z. J. Liu & S. C. Chen and *C. eburneum* var. *longzhouense* Z. J. Liu & S. C. Chen, are described and illustrated. *Cymbidium concinnum* is related to *C. mastersii* Griff. ex Lindl., from which it differs by having unlobed-tipped leaves, an 18- to 22-flowered inflorescence and a V-shaped, purple-red patch on the mid-lobe of the lip; *C. eburneum* var. *longzhouense* differs from typical variety mainly by having rather dense purple-red mottles on the mid-lobe and the apical parts of the side-lobes of the lip. *Cymbidium maguanense* is discussed taxonomically, for which a neotype is chosen here. A key is provided to six Chinese taxa of *Cymbidium* sect. *Eburnea*.

Key words *Cymbidium* sect. *Eburnea*, *Cymbidium concinnum* Z. J. Liu & S. C. Chen, *Cymbidium eburneum* var. *longzhouense* Z. J. Liu & S. C. Chen, *Cymbidium maguanense*, new species, new variety, neotype, key.

Cymbidium Sw. sect. *Eburnea* was established by Seth and Cribb in 1984. The two species included were *Cymbidium eburneum* Lindl. and *C. parishii* Rchb. f., to which *C. roseum* J. J. Sm. and *C. mastersii* Griff. ex Lindl. were added by Du Puy and Cribb in 1988. This section is characterized by its new pseudobulb produced biennially or perennially, its scape arising from the axils of the leaves, and its lip fused basally to the base of the column for 2–6 mm.

In China, only two species, *C. eburneum* and *C. mastersii*, of this section were recognized until 1996, when the third species, *C. maguanense*, was described by F. Y. Liu based on a cultivated plant. This new species was then considered to be conspecific with *C. mastersii* (Chen, 1999), probably judging by the original description: “stem erect, 10–30 cm long”. We failed to make a check on the type specimen, because no holotype was seen in the herbarium of the Kunming Institute of Botany (KUN), as designated by the author (F. Y. Liu 88004), nor living plant found in the botanical garden of the same institute. It was not until very recently when many living plants were collected from the type locality (Maguan County), enabling us to deal with it.

Another new member of the section is *C. changningense* Z. J. Liu & S. C. Chen, which was described very recently. It is characterized by having a V-shaped, purple-red patch on the mid-lobe of the lip, an eye-catching sign found in many species such as *C. lowianum* Rchb. f., *C. schroederi* Rolfe and *C. baoshanense* F. Y. Liu & Perner. The new species described here is the fifth one to have such a colored patch on the mid-lobe of the lip, though the patches show some differences in shape and color from each other in different species. It is still uncertain, however, whether or not the same kind of insects the V-shaped patch would attract for pollination.

In the present paper, a new species and a new variety are described, a species is

discussed taxonomically, for which a neotype is chosen here, and a key is provided for all the Chinese species of this section.

1. *Cymbidium concinnum* Z. J. Liu & S. C. Chen, sp. nov. Fig. 1

Species nova *Cymbidio mastersii* Griff. ex Lindl. similis, a quo differt foliis non lobatis ad apicem, inflorescentia 18- ad 22-flora, lobo medio labelli signo V-formi purpureo-rubro praedito.

China. Yunnan (云南): Lushui (泸水), Pianma (片马), on trees in broad-leaved forest, alt. 2300 m, 2004-11-03, Z. J. Liu (刘仲健) 2918 (holotype, SZWN^{*}; isotype, PE).

Epiphytic plants. Pseudobulbs subovoid, bilaterally flattened, 4–8 cm long, 2.5–3.6 cm wide, enclosed in persistent leaf bases. Leaves 4–8, lorate, coriaceous, 30–75 × 0.9–1.4 cm, acuminate, articulated 5–12 cm from the base. Scape axillary, arching, 40–60 cm long, with several sheaths in lower part; raceme laxly with 18–22 flowers; floral bracts triangular, 2–3 mm long; pedicel and ovary 2.2–2.7 cm long; flowers 5–6 cm across, fully opening, scented, cream yellow; sepals and petals with pale purple-red veins composed of many small spots; lip with pale purple-red stripes on the side-lobes and a V-shaped purple-red patch and a short median line of the same color on the mid-lobe; lamellae yellowish spotted with purple-red; sepals narrowly obovate-oblong, 4.3–4.6 × 1 cm, slightly concave, apex acute; lateral sepals slightly oblique; petals broadly linear, falcate, 4.2–4.4 × 0.7–0.9 cm, apex acute; lip elliptic-obovate in outline, 3.5–3.8 cm long, 3-lobed, base fused to the base of the column for 2–3 mm; side-lobes erect, clasping the column, adaxially hairy; mid-lobe subcordate or broadly ovate, 9–11 × 9–11 mm, adaxially minutely hairy, undulate-margined; disc with 2 hairy lamellae extending from near its base to near the base of the mid-lobe, apically converging or fused to each other; column 3–3.2 cm long, winged, hairy ventrally; pollinia 2, cleft. Fl. Oct.–Nov.

On trees in broad-leaved forest; alt. 2300 m. W Yunnan (Lushui County).

Several living plants of this new species are now cultivated in our nursery. It is akin to *Cymbidium mastersii* Griff. ex Lindl., from which it differs by having unlobed-tipped leaves, an 18- to 22-flowered inflorescence, and a V-shaped, purple-red patch on the mid-lobe of the lip.

2. *Cymbidium eburneum* Lindl. in Bot. Reg. 33: t. 67. 1847; Hook. in Curtis's Bot. Mag. 85: t. 5126. 1859; Rolfe in J. Linn. Soc. Bot. 36: 29. 1903; Y. S. Wu & S. C. Chen in Acta Phytotax. Sin. 18: 303. 1980; Seth & Cribb in Arditti, Orch. Biol. Rev. Prosp. 3: 304. 1984; Du Puy & Cribb, Genus *Cymbidium*: 133, fig. 25 (3). 1988; Y. S. Wu, Chinese *Cymbidiums* (ed. 2): 60, fig. 28. 1993; S. C. Chen & Z. H. Tsi, Orch. China 85, fig. 5 (10). 1998; S. C. Chen in Fl. Reip. Pop. Sin. 18: 208. 1999. Type: India, cult., Loddiges s.n. (holotype, K!).

2a. var. *eburneum*

Leaves 1.4–2.1 cm wide, apex bilobed, with a mucro in the sinus. Inflorescence with 1 or rarely 2(–3) flowers; flowers slightly scented; sepals and petals white, sometimes slightly tinged with pinkish; lip white, with a yellow patch centrally and occasionally a few purple-red spots on the mid-lobe; lamellae yellow; column white, slightly tinged with pinkish, more or less spotted with yellow at ventral base.

On rocks along valleys; alt. 1000–2000 m. China (SW Guangxi, Hainan, W Yunnan); India; Myanmar; Nepal.

2b. var. *longzhouense* Z. J. Liu & S. C. Chen, var. nov. Fig. 2

Varietas nova a typo bene differt lobo medio et partibus apicalibus loborum lateralium labelli manifeste purpureo-rubro-maculosis, columna maculis minutis vel striolis purpurinis

* SZWN=Herbarium, Shenzhen City Wutongshan Nurseries, China.

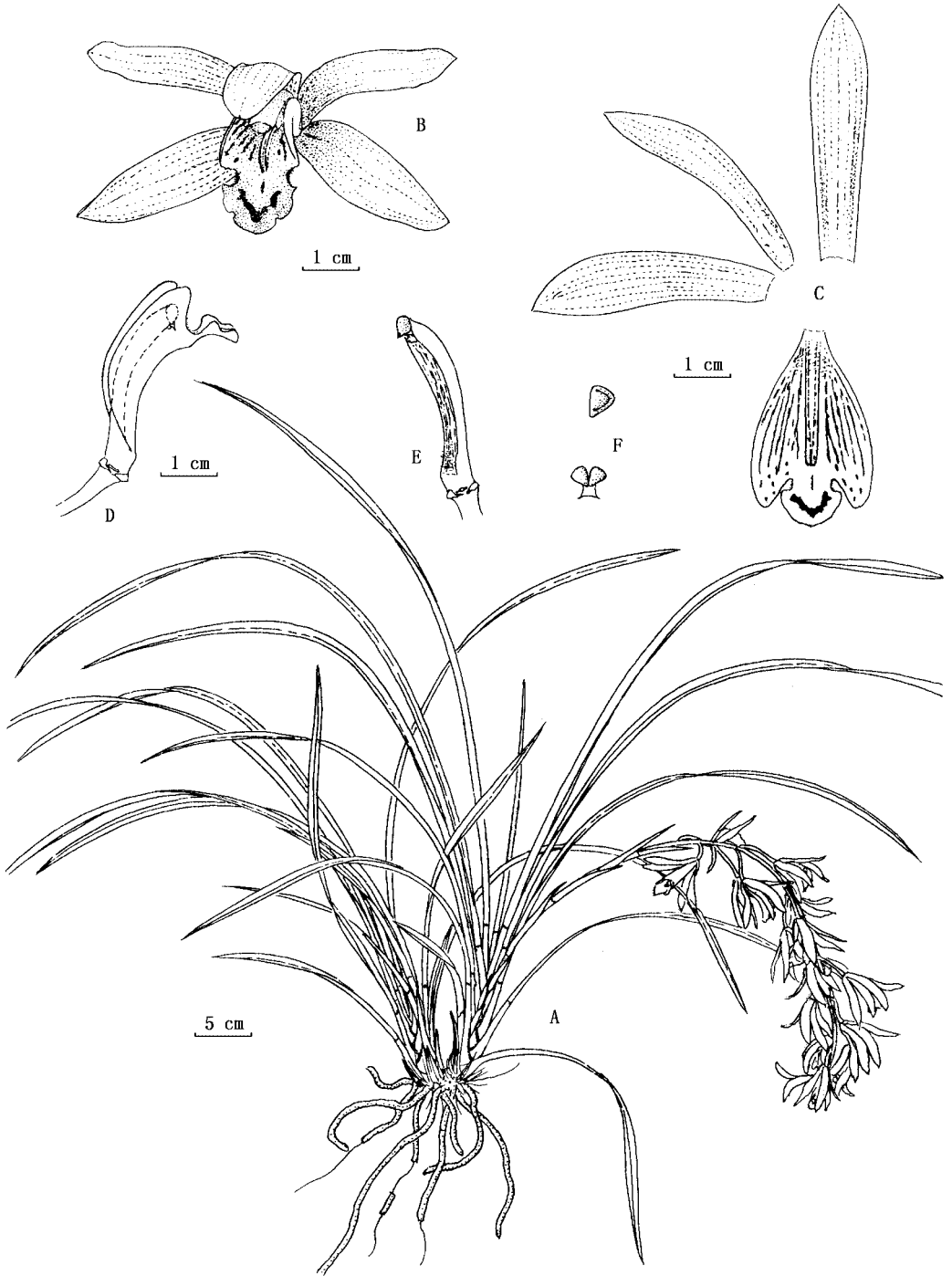


Fig. 1. *Cymbidium concinnum* Z. J. Liu & S. C. Chen. A, habit; B, flower; C, dorsal sepal, lateral sepal, petal and lip; D, lip and column, side view; E, column; F, pollinarium. Drawn by L. J. Chen from the type gathering, Z. J. Liu 2918 (SZWN).

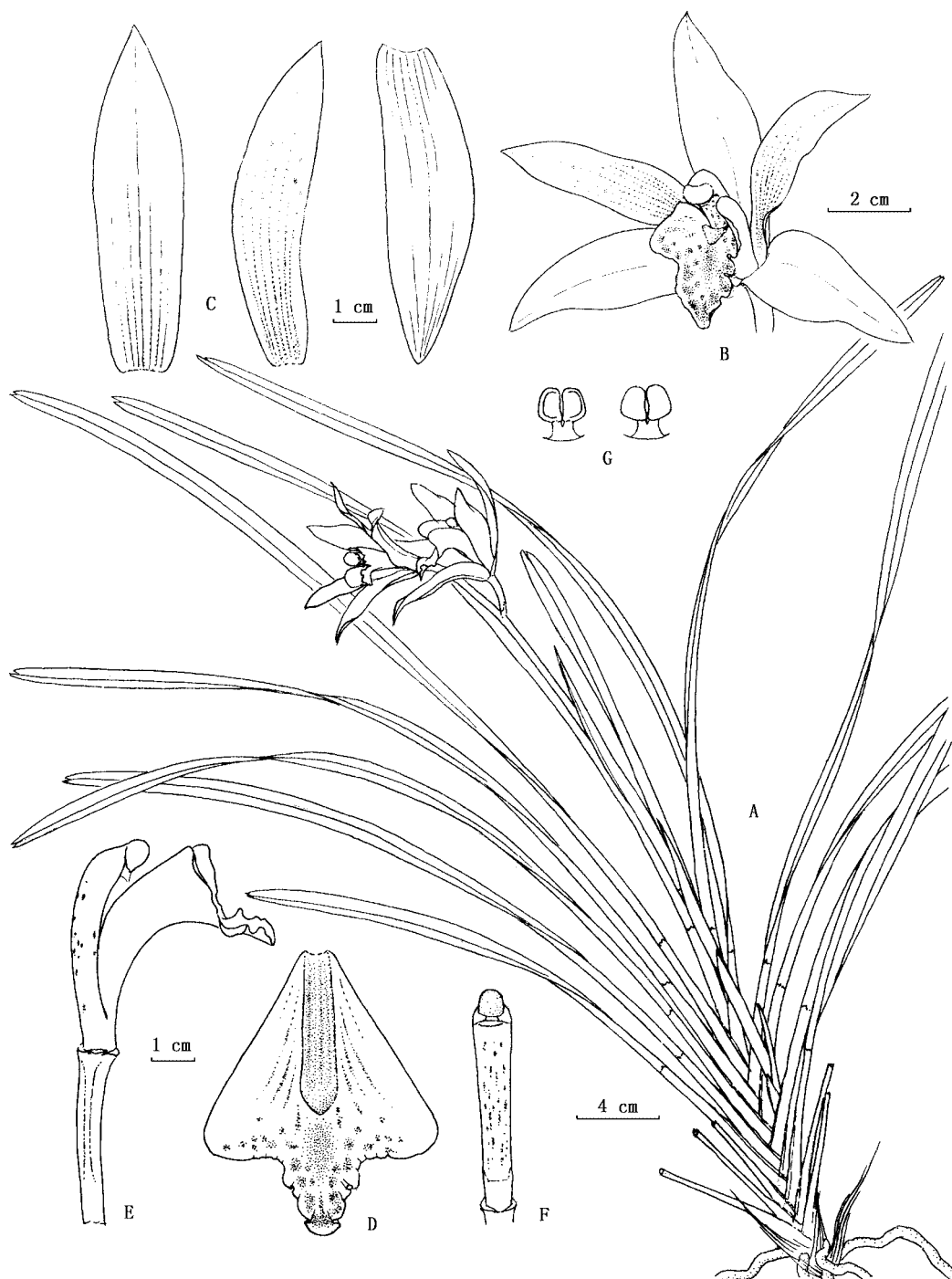


Fig. 2. *Cymbidium eburneum* var. *longzhouense* Z. J. Liu & S. C. Chen. A, habit; B, flower; C, dorsal sepal, lateral sepal and petal; D, lip; E, lip and column, side view; F, column, front view; G, pollinarium. Drawn by L. J. Chen from the type gathering, Z. J. Liu 3032 (SZWN).

secus venter vel subinde dorsum praedita.

China. SW Guangxi (广西西南): Longzhou (龙州), Mt. Daqingshan (大青山), alt. 800 m, 2005-04-20, *Z. J. Liu* (刘仲健) 3032 (holotype, SZWN; isotype, PE).

Leaves 1.5–2 cm wide, apex obliquely and sharply bilobed. Inflorescence with 1–2 flowers; flowers scented; sepals and petals white, usually tinged with pinkish dorsally; lip white, with a yellow patch centrally, manifestly mottled with purple-red on the mid-lobe and the apical parts of the side-lobes; lamellae yellow; column white, with purplish minute spots or dashes ventrally or occasionally also dorsally, tinged with yellow toward the base.

On rocks in open forest; alt. 800 m. SW Guangxi (Longzhou).

This new variety is a charming orchid. It differs from the typical variety (*C. eburneum* var. *eburneum*) mainly by its floral color. In the new variety the lip has rather dense purple-red mottles on the mid-lobe and the apical parts of the side-lobes, and the column has minute purplish spots and dashes ventrally or occasionally also dorsally, while in *C. eburneum* var. *eburneum*, there are no such dense colored mottles on the mid-lobe of the lip, nor purplish spots or dashes on the ventral surface of the column. In addition, the flowers of the new variety are more fragrant than those of the typical variety, and in our nursery *C. eburneum* var. *eburneum* flowers in February and March, while the new variety in April and May.

3. *Cymbidium maguanense* F. Y. Liu in Acta Bot. Yunnan. 18: 412, fig. 2. 1996.

China. SE Yunnan (云南东南): Maguan (马关), F. Y. Liu 88004 (holotype, nothing preserved in either KUN or its botanical garden). Type: China. SE Yunnan (云南), Maguan (马关), 2004-11-10, *Z. J. Liu* (刘仲健) 2776 (neotype, SZWN; isoneotype, PE).

In the original description, the pseudobulb of this species was said to be an erect stem 10–30 cm in length. It seemed that there were few differences between *C. mastersii* and this new species, and then the latter was considered to be conspecific with the former (Chen, 1999). However, it is still a question whether the original description of the pseudobulb is correct. No type specimen was found either in the herbarium of the Kunming Institute of Botany (KUN) or in any of other herbaria. No definite answer was made by the author of *C. maguanense* to our question, neither type specimen nor living plant, based on which the new species was described, could be provided by the author. It is evident that the type specimen either has been lost or has never been deposited in any herbarium.

Fortunately many living plants of this species were collected from Maguan (type locality) in recent years. They all flowered in our nursery, showing little difference in floral structure and color from the original description of *C. maguanense* except the pseudobulbs which are 7–8 cm in length, not stem-like, but ovoid-cylindric and enclosed in leaf bases. One of them, *Z. J. Liu* 2776, is chosen here as a neotype for *C. maguanense* F. Y. Liu.

A description of this species is given as follows:

Epiphytic plants. Pseudobulbs cylindrical-ovoid or subcylindrical, 4–10 cm long, 2–2.5 cm wide, enclosed in persistent leaf bases. Leaves 8–19, distichous, lorate, 37–76 × 1.2–2.4 cm, apex acuminate and unequally bilobed, base conduplicate and narrowly membranous-margined, articulated 6–13 cm from the base. Scapes 1–2, axillary, suberect, 20–45 cm long; peduncle with several sheaths 5–13 cm long; raceme with 2–4(–5) flowers; floral bracts ovate-triangular, 5–6 mm long; pedicel and ovary greenish tinged with purplish, 2–3 cm long; flowers white or pinkish, fragrant; sepals and petals sometimes tinged with purplish abaxially; lip with a suboblong yellow central patch on the mid-lobe; sepals narrowly oblong-elliptic, 4.8–6 × 1.5–2 cm, acuminate; lateral sepals slightly oblique; petals narrowly oblong-lanceolate, 4.6–5.2 × 0.8–1.2 cm, acuminate; lip subobovate or obovate-elliptic, 4.5–5.2 × (2–)2.6–3.2 cm, 3-lobed, base fused to the base of the column for ca. 5 mm; side-lobes erect,

more or less clasping the column, densely covered with white short hairs; mid-lobe broadly subovate, 1.2–1.3 × 1.4–1.8 cm, slightly recurved, crisped-margined, densely short-hairy on the yellow patch; disc with 2 longitudinal lamellae inflated and confluent apically to form a subdeltoid callus; column 3.6–4 cm long, pale purple to pink, slightly arcuate; pollinia 2, cleft, subovoid. Fl. Oct.–Dec.

Thus, there are altogether five species and a variety in this section found in China, to which a key is provided as follows:

1. Leaves unlobed apically; inflorescence with 18–22 flowers.....**C. concinnum**
1. Leaves more or less bilobed apically; inflorescence with 1–10 flowers.
 2. Lip with a V-shaped, purple-red patch on the mid-lobe.....**C. changningense**
 2. Lip without a V-shaped patch as above on the mid-lobe.
 3. Pseudobulbs stem-like, growing indeterminately for many years, 10–30 cm or more long**C. mastersii**
 3. Pseudobulbs not stem-like, growing indeterminately for 2–3 years, usually 7–8(–10) cm long.
 4. Lip rather densely mottled with purple-red on the mid-lobe and the apical parts of the side-lobes.....**C. eburneum** var. **longzhouense**
 4. Lip not or occasionally sparsely spotted with purple-red on the mid-lobe.
 5. Inflorescence with 1 or rarely 2(–3) flowers; flowers large, petals 5.5–7 cm long, 1.3–1.8 cm wide.....**C. eburneum** var. **eburneum**
 5. Inflorescence usually with 2–4(–5) flowers; flowers smaller, petals 4.6–5.2 cm long, 0.8–1.2 cm wide.....**C. maguanense**

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References

- Chen S C. 1999. *Cymbidium* Sw. In: Flora Reipublicae Popularis Sinicae (中国植物志). Beijing: Science Press. 18: 191–227.
- Du Puy D, Cribb P J. 1988. The Genus *Cymbidium*. Oregon, Portland: Timber Press.
- Liu F-Y (刘方媛). 1996. Two new species of Orchidaceae from Yunnan. Acta Botanica Yunnanica (云南植物研究) 18: 411–414.
- Seth S J, Cribb P J. 1984. A reassessment of the sectional limits in the genus *Cymbidium* Swartz. In: Arditti J ed. Orchid Biology, Reviews and Prospectives. Ithaca: Cornell University Press. 3: 283–322.

兰属腋花组若干种类的研究

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摘要 对新种丽花兰 *Cymbidium concinnum* Z. J. Liu & S. C. Chen 和新变种龙州兰 *C. eburneum* var. *longzhouense* Z. J. Liu & S. C. Chen 进行了描述和绘图; 丽花兰与大雪兰 *C. mastersii* Griff. ex Lindl. 有亲缘关系, 区别点在于新种叶片先端不分裂, 花序具 18–22 朵花, 唇瓣中裂片上有一个 V 型的紫红色斑块; 龙州兰(变种)与独占春(原变种)的主要区别在于唇瓣中裂片上和侧裂片顶部有较密的紫红色斑。对象牙白 *C. maguanense* 的分类问题进行了讨论, 并为其指定了新模式; 还为腋花组 sect. *Eburnea* 国产种类提供一个检索表。

关键词 兰属腋花组; 丽花兰; 龙州兰; 象牙白; 新种; 新变种; 新模式; 检索表