

Three New Natural Hybrid Species

Related to *Cymbidium qiubeiense*

CHEN Li-jun, LI Li-qiang, LIU Zhong-jian

(The National Orchid Conservation Center, Shenzhen 518114, China)

Abstract: There are three natural hybrid species, *Cymbidium* x *purpuratum*, *C. x latifolium* and *C. x uniflorum*, which are hybridized by *C. qiubeiense* with *C. kanran*, or *C. lancifolium* or *C. serratum* respectively, were described and illustrated. *C. qiubeiense* was found growing together with *C. kanran*, or *C. lancifolium*, and or *C. serratura* in the natural habitat. *C. x purpuratum* leaf quantity of plants, leaf shape, and sepals are similar to *C. kanran*; the bracts, petals and lips are similar to *C. qiubeiense*. The leaves and peduncle of *C. x latifolium* are similar to *C. lancifolium*, and its flowers are similar to *C. qiubeiense*. The leaf shape and peduncle of *C. x uniflorum* are similar to *C. qiubeiense*, its flowers shape and leaves non-articulate are similar to *C. serratum*. A key to *C. qiubeiense*, *C. kanran*, *C. lancifolium*, *C. serratum* and their natural hybrid species were provided.

Key words: *Cymbidium qiubeiense*; *C. x purpuratum*; *C. x latifolium*; *C. x uniflorum*; new natural hybrid species; Yunnan; China

CLC number: Q949.71 8.43

Document code: A

Article ID: 1001-411X(2007)02-0083-04

与邱北冬蕙兰相关的3个新天然杂种

陈利君, 李利强, 刘仲健

(国家兰科植物种质资源保护中心, 广东深圳 518114)

摘要: 对兰属 *Cymbidium* 邱北冬蕙兰 *C. qiubeiense* 与寒兰 *C. kanran*, 兔耳兰 *C. lancifolium*, 豆瓣兰 *C. serratum* 的新天然杂交种: 紫纹冬蕙兰 *C. x purpuratum*, 兔耳冬蕙兰 *C. x latifolium* 及独花冬蕙兰 *C. x uniflorum* 作了描述和绘图。在天然产地发现了邱北冬蕙兰与寒兰、兔耳兰和豆瓣兰生长在一起。新杂种紫纹冬蕙兰叶片形态、叶片数量、萼片与寒兰相似, 花苞片、花瓣、唇瓣与邱北冬蕙兰相似; 兔耳冬蕙兰叶片和花序柄与兔耳兰相似, 花与邱北冬蕙兰相似; 独花冬蕙兰叶片形态、花序柄与邱北冬蕙兰相似, 花形态、叶柄无关节, 与豆瓣兰相似。提供了它们的检索表。

关键词: 邱北冬蕙兰; 紫纹冬蕙兰; 兔耳冬蕙兰; 独花冬蕙兰; 新天然杂交种; 云南; 中国

China is the country with the most abundant *Cymbidium* plants. In 1999, 29 species were recorded in the *Flora Reipublicae Popularis Sinicae* (Flora of China)^[1]. Many new species have been described, and the amount of *Cymbidium* plants has been up to 49 in

recent years^[2]. *C. qiubeiense* is an endemic species to China, different from other known species in its long wire-like purple petiole, with 2-3 leaves, green tepals. *C. qiubeiense* are found in the forests of SW Guizhou, SE Yunnan and W Guangxi, where there are many

Received date: 2006-03-28

Biographies: CHEN Li-jun (1980—), female, engineer; Corresponding author: LI Li-qiang (1977—), male, engineer, E-mail: szgarden@wtsmp.com

Foundation item: National Program for Wild Life Conservation and Nature Reserve Construction of China; Science & Technology Plan of Guangdong Province of China (2004B26001070)

Cymbidium plants e. g. *C. kanran*, *C. lancifolium* and *C. serratum*. These four species have the same florescence and species of *Cymbidium* have good compatibility. Therefore, it is easy for them to produce natural hybrid species. During the research on the habitat of *C. qiubeiense* between Jan. and Feb. in 2006, three new species were collected, all of them are related to *C. qiubeiense* and have the interrelated characters respectively with *C. kanran*, *C. lancifolium* and *C. serratum* as well. It is suggested that these three new species were natural hybrid species. Some living plants of them have been cultivated in The National Orchid Conservation Center.

A key to *C. qiubeiense*, *C. kanran*, *C. lancifolium*, *C. serratum* and their natural hybrid species:

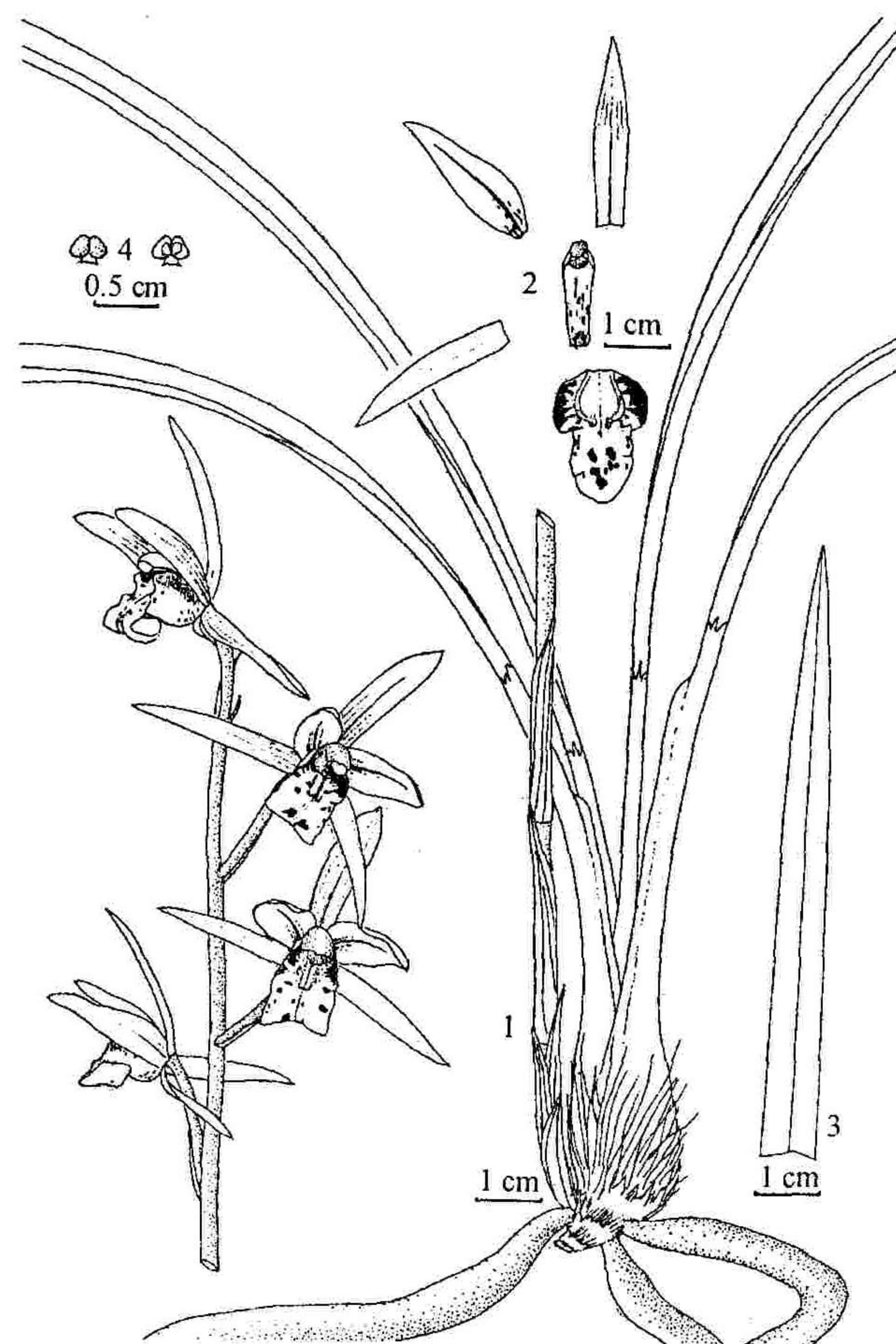
1. Leaves 2-3; leaves petiole wire-like, dark purple.
 2. Leaves linear *C. qiubeiense*
 2. Leaves narrow elliptic *C. × latifolium*
1. Leaves 5-7; leaves petiole not wire-like, green.
 3. 1-flowered inflorescence, leaves not articulate.
 4. Floral bracts 2.0-2.5 cm long, flowers scented *C. × uniflorum*
 4. Floral bracts 4-5 cm long, flowers not scented *C. serratum*
 3. Multi-flowered inflorescence, leaves articulate.
 5. Raceme with 2-4 flowers *C. × purpuratum*
 5. Raceme with 5-12 flowers.
 6. Leaves linear *C. kanran*
 6. Leaves elliptic *C. lancifolium*

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Cymbidium × purpuratum L. J. Chen, L. Q. Li et Z. J. Liu, hybr. nov. Fig. 1

Type: China, Yunnan, Qiubei County(邱北县), Pingzhai(平寨), alt. 1 200 m. 2006-02-01. Z. J. Liu 3095 (holotype, SZWN) (SZWN = Herbarium, Shenzhen City Wutongshan Nurseries, China).

Diagnosis: Hybrids nova inter *Cymbidium qiubeiense* K. M. Feng et H. Li et *Cymbidium kanran* Makino; foliis 5-6, loratus, dorsali subolongus *Cymbidio kanran* similis et *Cymbidio qiubeiense* differt; bracta lanceolata, petalis ovato-elliptica, labello subovato-elliptica *Cymbidio qiubeiense* similis et *Cymbidio kanran* differt.



1: flowering plant; 2: dorsal sepal, petal, lateral sepal, lip and column; 3: leaf apex; 4: pollinarium.

Fig. 1 *Cymbidium × purpuratum* L. J. Chen, L. Q. Li et Z. J. Liu

Description: A terrestrial plant. Pseudobulbs long elliptic, 2-3 cm long, ca. 2 cm wide, enclosed in leaf base. Leaves 5-6, lorate, deep green, base contracted into a petiole, membranous sheaths at petiole base, 30-75 cm long, 0.8-1.1 cm wide, apex acuminate, margins serrulate, mid-veins protrudent, articulate. Scape arising from the base of the pseudobulb; suberect or slightly curved, red-brown, 18-25 cm long, several purple-maroon sheaths in lower half and base; sheath bases surrounded rachides, 2-7 cm long; raceme 7-12 cm long, 2-4 flowers; bracts lanceolate, (1.5-2.8) cm × (3-5) mm; pedicel and ovary 2.5-3.5 cm long, glabrous; flowers scented, ca. 5 cm across; dorsal sepal and lateral sepals suboblong, green, ca. 3.1 cm × 0.5 cm, petals ovate-elliptic, green, purple veins at base, 2.5 cm × 0.8 cm; lip mottled with purple-red; subovate-elliptic, ca. 2.5 cm × 1.8 cm, obtuse at apex, slightly undulate at apex, obscurely 3-lobed, side-lobes erect, mid-lobe recurved, disc with 2 longitudinal lamellae extending from

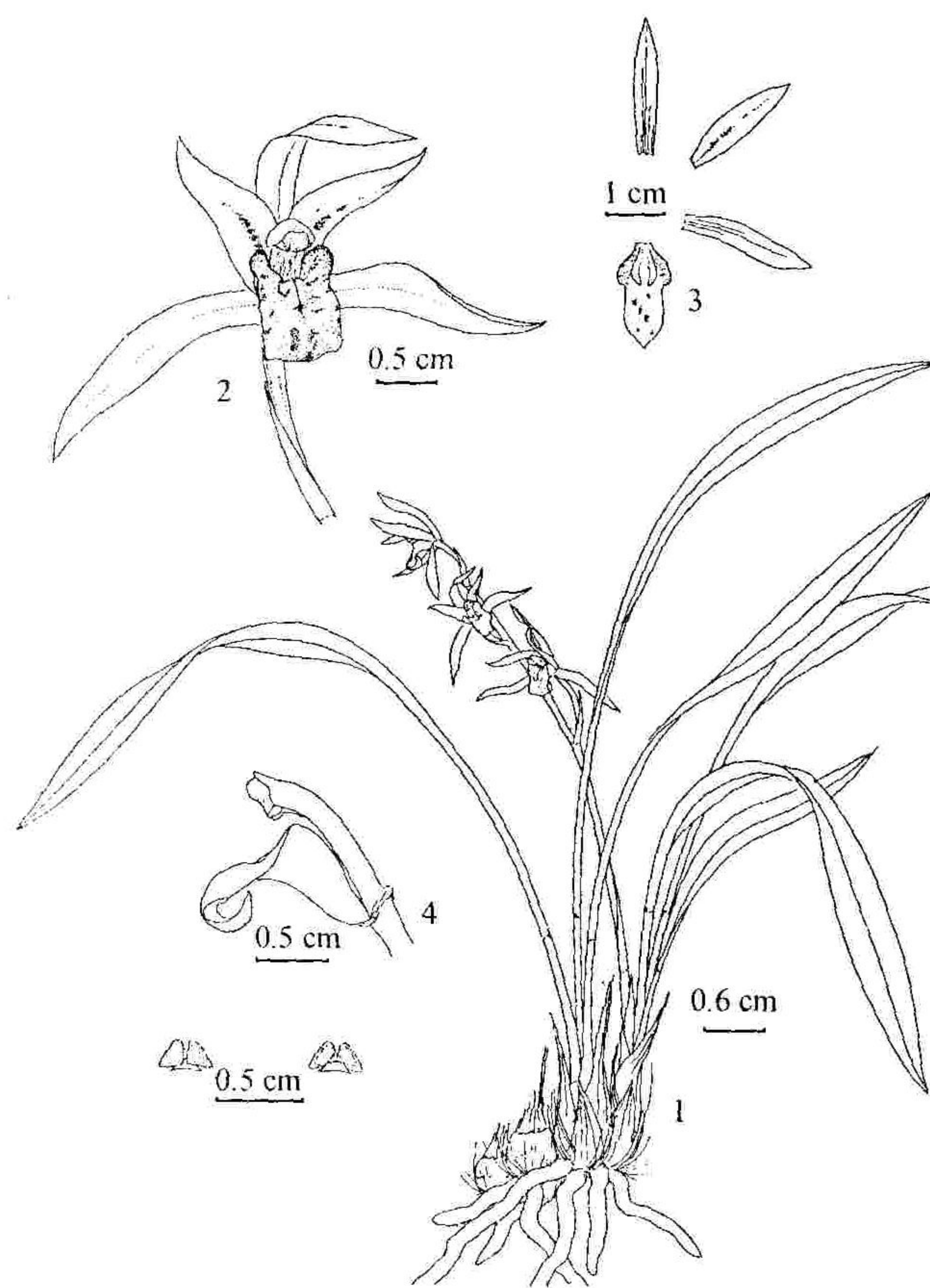
base to the base of mid-lobe; column 1.2 cm long, slightly arcuate. Pollina 4, in 2 pairs.

Flowering period: From December to February in next year.

Notes: This new natural hybrid species has some characteristics between those of *C. qiubeiense* and *C. kanran*. Its leaf shape, leaf number and sepals are similar to *C. kanran*, the bracts, petals and lips are similar to *C. qiubeiense*.

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Cymbidium × *latifolium* L. J. Chen, L. Q. Li et Z. J. Liu, hybr. nov. Fig. 2



1: flowering plant; 2: flower; 3: dorsal sepal, petal, lateral sepal and lip; 4: column and lip, side view; 5: pollinarium

Fig. 2 *Cymbidium* × *latifolium* L. J. Chen, L. Q. Li et Z. J. Liu

Type: China, Yunnan, Guangnan County (广南县), Zhujie (珠街), alt. 1 300 m. 2006-01-25. Z. J. Liu 3088 (holotype SZWN), (SZWN = Herbarium, Shenzhen City Wutongshan Nurseries, China).

Diagnosis: Hybrids nova inter *Cymbidium qiubeiense* K. M. Feng et H. Li et *Cymbidium lancifolium* Hook; foliis anguste ellipticus, pedunculus 18-22 cm longus *Cymbidio lancifolio* similis et *Cymbidio qiubeiense*

differt; florus forma *Cymbidio qiubeiense* similis et *Cymbidio lancifolio* differt.

Description: A terrestrial plant. Pseudobulbs small, long ovoid, 1.2-1.6 cm long, 7-9 mm wide, enclosed in purple-brown persistent leaf bases and sheaths; sheaths 3-4, lanceolate, 2-6 cm long. Leaves usually 2-3, subterminal, oblong, deep green, more or less tinged with dull purple, 13-25 cm long, 1.2-1.4 cm wide, apex acuminate, margins serrulate, base contracted into a long petiole; petiole purplish-black, hard and filiform, wire-like, 4-11 cm long, articulated 3.5-6.0 cm from the base. Scape arising from the sheath of the base of the pseudobulb, erect, 18-22 cm long, pale yellow-green, tinged with brown near the base, 3-4 sheaths at base, purple-brown, 1.5-2.5 cm long; inflorescence usually sparsely with 3 flowers; floral bracts lanceolate, purple-brown, 0.8-1.6 cm long; pedicel and ovary 1.5-2.5 cm long; sepals and petals milk-white, mottled with purple-red at the mid-vein of the base of the petals and sepals; lip milk-white, tinged with red and purple spots on the side-lobes, the mid-lobe spotted with purple-brown; sepals narrowly oblong, (2.3-2.6) cm × (0.3-0.4) cm, apex subacute, with 5 veins; petals long elliptic to oblong, (1.8-2.1) cm × (0.5-0.6) cm, apex acuminate; lip elliptic-pandurate in outline, (1.8-2.1) cm × (0.7-0.8) cm, inconspicuously 3-lobed; side-lobes erect; mid-lobe oblong, (1.0-1.1) cm × (0.6-0.7) cm, recurved; disc with 2 longitudinal lamellae extending from base to the base of the mid-lobe, converging at apex; column (1.0-1.2) cm long, slightly arcuate; anther cap pale green, lower than the apex of column; pollinia 4, in 2 pairs, one big and one small in each pair, lamellar, texture loosen.

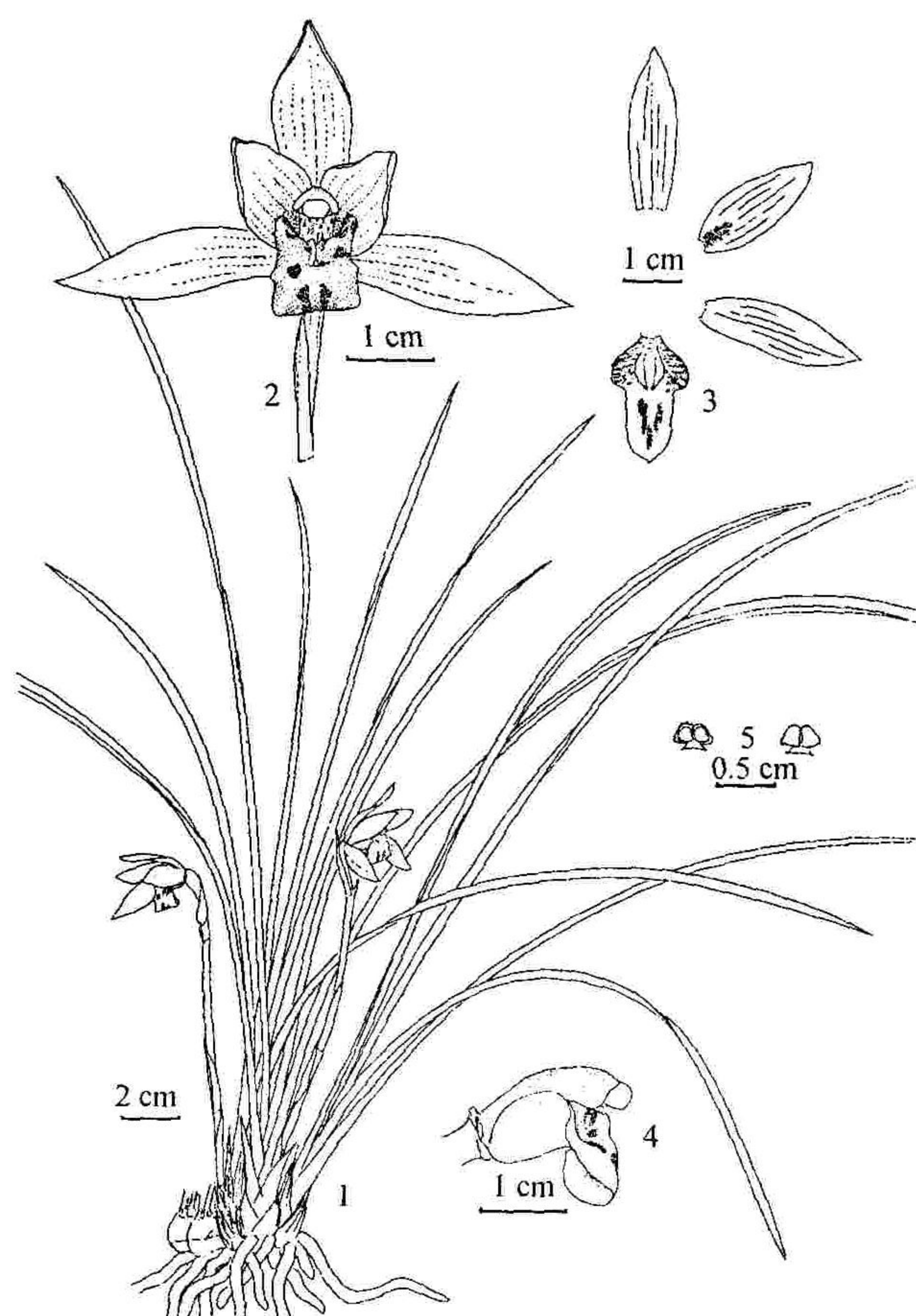
Flowering period: December to February in next year.

Notes: This new natural hybrid species has some characteristics between those of *C. qiubeiense* and *C. lancifolium*. Its leaves and peduncle are similar to *C. lancifolium*, and the flower shape is similar to *C. qiubeiense*.

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Cymbidium × *uniflorum* L. J. Chen, L. Q. Li et

Z. J. Liu, hybr. nov. Fig. 3



1: flowering plant; 2: flower; 3: dorsal sepal, petal, lateral sepal and lip; 4: column and lip, side view; 5: pollinarium

Fig. 3 *Cymbidium x uniflorum* L. J. Chen, L. Q. Li et Z. J. Liu

Type: China, Yunnan, Guangnan County (广南县), Nanping (南屏), alt. 1 200 m. 2006-01-28.

Z. J. Liu 3089 (holotype SZWN), (SZWN = Herbarium, Shenzhen City Wutongshan Nurseries, China).

Diagnosis: Hybrids nova inter *Cymbidium qiubeiense* K. M. Feng et H. Li et *Cymbidium serratum* Schltr., foliis forma, pedunculus purpureo, bractea 2.0-2.5 cm longa *Cymbidio qiubeiense* similis et *Cymbidio serrato* differt; foliis non articulatus, floris forma *Cymbidio serrato* similis et *Cymbidio qiubeiense* differt.

Description: A terrestrial plant. Pseudobulbs small, ovoid, 1.5-2.0 cm long, 0.8-1.5 cm wide, enclosed in persistent pale brown leaf bases and brown-green sheaths; sheaths 4-5, lanceolate, 1-8 cm. Leaves usually 5-7, subterminal, lorate, deep green, (25-65) cm × (0.5-0.7) cm, apex acuminate, margins

serrulate; base contracted into a petiole; petiole deep green, thinner, usually conduplicate, 8-15 cm long, not articulate. Scape arising from the base of the pseudobulb, erect, 16-20 cm long, pale green with purple tinged, with 4-5 sheaths from base to medium; sheaths pale green, with pale brown veins and tinges, lanceolate, 1.5-3.0 cm; inflorescence 1 flower; bracts long elliptic, pale green with brown vertical veins and tinges, (2.1-2.4) cm × (0.6-0.8) cm; pedicel and ovary 2.3-2.8 cm long; flowers fragrant; sepals and petals yellow-green, mottled with dark purple at the base of the petals; lip milk-white, mottled with purple-brown on the side-lobes and purple on the mid-lobe; sepals long elliptic, (2.6-2.9) cm × (0.8-0.9) cm, apex subacute, with 5-7 green veins, mid-vein slightly protuberance, petals narrowly ovate-elliptic, (2.2-2.4) cm × (0.8-0.9) cm, apex acute; lip elliptic-pandurate in outline, (1.9-2.3) cm × (0.9-1.3) cm, 3-lobed; side-lobes erect; mid-lobe oblong, (1.0-1.2) cm × (0.8-0.9) cm, recurved; disc with 2 longitudinal lamellae extending from base to the base of the mid-lobe, converging towards the apex; column 1.3-1.4 cm long, slightly arcuate; anther cap yellow; pollinia 4, in 2 pairs.

Flowering period: December to February in next year.

Notes: This new natural hybrid species has some characteristics between those of *C. qiubeiense* and *C. serratum*. Its leaf shape and peduncle are similar to *C. qiubeiense*, flower shape and the leaves not articulate are similar to *C. serratum*.

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