

57. CEPHALANTHERA Richard, De Orchid. Eur. 21, 29, 38. 1817.

头蕊兰属 tou rui lan shu

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Callithronum Ehrhart; *Dorycheile* Reichenbach; *Eburophyton* A. Heller; *Xiphophyllum* Ehrhart.

Herbs, terrestrial, autotrophic or holomycotrophic. Rhizome creeping, cylindric, slender; roots fasciculate, filiform, fleshy, usually numerous though few in holomycotrophic species. Stem erect, unbranched, leafy, with 1 to a few subcymbiform or cylindric basal sheaths. Leaves alternate, plicate, sessile, directly sheathing stem at base, reduced to membranous sheaths in holomycotrophic species. Inflorescence terminal, racemose, many or few flowered, rarely 1-flowered; proximal floral bracts foliaceous and usually longer than flowers, distal ones much shorter. Flowers resupinate, suberect, weakly spreading and campanulate, or rarely widely spreading, white, pink, or yellow; ovary slightly twisted, glabrous. Sepals free, similar to each other, subequal. Petals slightly shorter than sepals, ± connivent with sepals; lip adnate to base of column, 2-partite or rarely simple and not distinct from petals in peloric forms; hypochile with erect lateral lobes embracing column, saccate or with a short spur at base; epichile spreading, ovate-elliptic, apex obtuse or acute; disk with 3–7 longitudinal lamellae, or unornamented in peloric forms. Column erect, usually with 2 narrow lateral wings; anther erect, hinged, 2-locular; pollinia 2, each 2-partite, granular-farinaceous, lacking caudicles and viscidia; stigma concave, rounded; rostellum inconspicuous or absent. Capsule erect.

About 15 species: mainly in Europe, N Africa, and E Asia, but also in the Himalayas, SE Asia, and extending to the west coast of North America; nine species (four endemic) in China.

- 1a. Holomycotrophic herbs lacking green leaves.
 - 2a. Epichile of lip transversely oblong-elliptic, apex obtuse; lamellae extending from base to middle or slightly above middle of epichile; spur arising from base of hypochile 1. *C. calcarata*
 - 2b. Epichile of lip broadly ovate, apex acute-acuminate; lamellae extending from base almost to apex of epichile; spur arising from slightly above base of hypochile 2. *C. gracilis*
- 1b. Leafy autotrophic herbs.
 - 3a. Flowers yellow 3. *C. falcata*
 - 3b. Flowers white.
 - 4a. Lip simple, similar to petals, not spurred or saccate at base 4. *C. nanlingensis*
 - 4b. Lip 2-partite, distinct from petals, spurred or saccate at base.
 - 5a. Hypochile of lip spurred at base, spur protruding between bases of lateral sepals.
 - 6a. Plants 2–4(or 5)-leaved; leaves 2–8 cm 5. *C. erecta*
 - 6b. Plants 6–8-leaved; leaves 6–14 cm 6. *C. longibracteata*
 - 5b. Hypochile of lip saccate or gibbous-saccate, enclosed within bases of lateral sepals.
 - 7a. Floral bracts all more than 30 mm, foliaceous and exceeding ovary 7. *C. damasonium*
 - 7b. Floral bracts only basal 1 or 2 foliaceous and exceeding ovary, distal ones not more than 6 mm.
 - 8a. Rachis 6–14 cm, laxly 3–14-flowered; lip 7–12 mm 8. *C. alpicola*
 - 8b. Rachis 1.5–6 cm, subdensely 2–20-flowered; lip 5–7 mm 9. *C. longifolia*

1. *Cephalanthera calcarata* S. C. Chen & K. Y. Lang, Acta Bot. Yunnan. 8: 271. 1986.

硕距头蕊兰 shuo ju tou rui lan

Plants holomycotrophic, 8–21 cm tall. Rhizome ca. 5 cm, ca. 0.2 cm in diam., with tubular sheaths 2–7 mm; roots sparse, fleshy. Stem slender, lacking green leaves. Basal sheaths several, tubular, 7–25 mm, membranous. Inflorescence laxly 3–7-flowered; rachis 2.5–5 cm; floral bracts lanceolate to linear-lanceolate, basal ones to ca. 10 × 2 mm, scarious, apex acuminate. Flowers weakly spreading or not opening at all, suberect, white; pedicel and ovary 8–12 mm. Sepals equal, lanceolate-oblong, 13–14 × ca. 4 mm, 5-veined, apex acute. Petals similar to sepals, suboblong to narrowly elliptic, 10–12 × ca. 3 mm, apex acute; lip suberect, 8–9 × ca. 9 mm, spurred at base, 2-partite; hypochile lobes erect and clasping column, slightly falcate, narrowly triangular, ca. 3.5 mm, apex acute; epichile transversely oblong-elliptic, ca. 5 × 7 mm, densely papillose toward apex, apex obtuse, with 5–7 longitudinal lamellae extending from near

base to middle or slightly above middle; spur located at base of hypochile, protruding between bases of lateral sepals, conic, 2–3 mm, apex obtuse. Column ca. 8 mm; stigma circular; anther oblong, ca. 3 mm. Capsule to 1 cm. Fl. May.

• Leaf litter in broad-leaved forests; ca. 2600 m. NW Yunnan.

2. *Cephalanthera gracilis* S. C. Chen & G. H. Zhu, Acta Bot. Yunnan. 24: 600. 2002.

纤细头蕊兰 xian xi tou rui lan

Plants holomycotrophic, 9–21 cm tall. Rhizome with several short scales toward apex. Stem slender, lacking green leaves. Basal sheaths 2 or 3, tubular, 8–15 mm, membranous. Inflorescence laxly 3- or 4-flowered; rachis 4–8 cm; floral bracts linear-lanceolate, basal ones 12–20 × 2–3 mm, apex acuminate. Flowers weakly spreading, suberect, ca. 1 cm; pedicel and ovary 10–18 mm. Sepals linear-lanceolate or oblong-lanceolate, ca. 10 × 2–3 mm, 1-veined, obtuse; lateral sepals slightly oblique. Petals lanceolate, ca. 8.5 × 2.5–3 mm, 1-

veined, acuminate; lip suberect, ca. 9×7 mm, spurred at base, 2-partite; hypochile lobes erect and clasping column, obliquely triangular-lanceolate, ca. 2.5 mm, apex subacute; epichile broadly ovate, $5-6 \times 5-7$ mm, apex acute to acuminate, with 5 fleshy papillose lamellae extending from base almost to apex; spur located slightly above base of hypochile, protruding between bases of lateral sepals, conic, 1.5–3 mm, apex obtuse. Column ca. 6 mm. Fl. May.

• NW Yunnan.

3. *Cephalanthera falcata* (Thunberg) Blume, Coll. Orchid. 187. 1859.

金兰 jin lan

Serapias falcata Thunberg in Murray, Syst. Veg., ed. 14, 816. 1784; *Cephalanthera bijiangensis* S. C. Chen; *C. japonica* A. Gray; *C. platycheila* H. G. Reichenbach; *C. raymondiae* Schlechter; *Cymbidium falcatum* (Thunberg) Swartz; *Epipactis falcata* (Thunberg) Swartz; *Pelexia falcata* (Thunberg) Sprengel; *P. japonica* Sprengel.

Plants leafy, autotrophic, 20–50 cm tall. Stem slender to somewhat robust, 4–7-leaved. Basal sheaths 3–5, 1–5 cm. Leaves elliptic, elliptic-lanceolate, or ovate-lanceolate, $5-11 \times 1.5-3.5$ cm, apex acuminate to obtuse. Inflorescence subdensely 5–10-flowered; rachis 3–8 cm; floral bracts usually very small, 1–3 mm and all shorter than ovary, though occasionally lower one to 12 mm and exceeding ovary. Flowers suberect, weakly spreading, yellow; pedicel and ovary straight to slightly curved, 7–15 mm. Sepals rhombic-elliptic, $12-15 \times 3.5-4.5$ mm, 5-veined, apex obtuse to acute. Petals similar to sepals but shorter, $8-12 \times 2.5-4.5$ mm, apex obtuse to acute; lip suberect, 8–9 mm, spurred at base, 2-partite; hypochile lobes erect and loosely embracing column, triangular to ovate-lanceolate, 1.5–3.5 mm, apex subacute; epichile transversely elliptic, ca. $5 \times 8-9$ mm, densely papillose toward apex, with 5–7 brownish orange lamellae; central 3 lamellae 0.5–1 mm tall, outer lamellae shorter; spur protruding between bases of lateral sepals, conic, sometimes slightly incurved, ca. 3 mm, apex obtuse. Column 6–7 mm, apex dilated, with 2 ovate wings; anther elliptic, ca. 2 mm. Capsule narrowly elliptic, $2-2.5 \times 0.5-0.6$ cm. Fl. Apr–May, fr. Aug–Sep. $2n = 34$.

Forests, grasslands, valleys, along streams; 700–2000 m. Anhui, N Fujian, N Guangdong, N Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, W Yunnan (Bijiang), Zhejiang [Japan, Korea].

Cephalanthera bijiangensis, described as a species endemic to Yunnan (Acta Phytotax. Sin. 25: 472. 1987), was distinguished from *C. falcata* only by the length of the lowest floral bract, which exceeds the ovary. Though the floral bracts of *C. falcata* are frequently all short (to ca. 3 mm), several collections seen from Japan indicate that plants of this species do occasionally have a foliaceous lower floral bract that exceeds the ovary. As such, it seems unjustifiable to maintain *C. bijiangensis* as distinct, and it is here treated as a synonym of *C. falcata*, with which it agrees in other respects.

4. *Cephalanthera nanlingensis* A. Q. Hu & F. W. Xing, Novon 19: 56. 2009.

南岭头蕊兰 nan ling tou rui lan

Plants leafy, autotrophic, 13–24 cm tall. Stem slender, somewhat flexuous, with a few basal sheaths, 3–6-leaved.

Leaves elliptic to lanceolate, $3-5 \times 0.8-1.2$ cm, apex acuminate. Inflorescence ± laxly 3–5-flowered; rachis 3.2–5 cm, ridged; floral bracts triangular, 2–3 mm. Flowers suberect, weakly spreading or not opening at all, white; pedicel and ovary 8–11 mm. Sepals suboblong, cymbiform, $7-8 \times 2-2.5$ mm, 3- or 5-veined, apex obtuse. Petals obovate, $5-6.5 \times 1.7-2$ mm, 4- or 5-veined, apex obtuse; lip similar to petals, without a spur. Column ca. 5 mm, without wings; anther ovoid, ca. 1.5 mm; rostellum absent. Fl. Apr–May.

• Edge of evergreen broad-leaved forests; 700–1500 m. N Guangdong.

The actinomorphic perianth of *Cephalanthera nanlingensis* indicates that it is a peloric form. On account of habit, flower color, and leaf shape and size, and given its occurrence in Guangdong, it seems probable that it is derived from *C. erecta*.

5. *Cephalanthera erecta* (Thunberg) Blume, Coll. Orchid. 188. 1859.

银兰 yin lan

Serapias erecta Thunberg in Murray, Syst. Veg., ed. 14, 816. 1784; *Cephalanthera elegans* Schlechter; *C. erecta* var. *szechuanica* Schlechter; *C. szechuanica* (Schlechter) Schlechter; *Epipactis erecta* (Thunberg) Swartz; *Limodorum erectum* (Thunberg) Kuntze.

Plants leafy, autotrophic, 10–30 cm tall. Stem slender, with 2–4 basal sheaths, 2–4 (or 5)-leaved. Leaves elliptic to ovate-lanceolate, $2-8 \times 0.7-2.3$ cm, apex acute or acuminate. Inflorescence ± laxly 3–10-flowered; rachis 2–8 cm, ridged; basal floral bract foliaceous, lanceolate and to 80 mm, distal ones narrowly triangular, 1–3 mm. Flowers erect, weakly spreading or not opening at all, white; pedicel and ovary 6–9 mm. Sepals oblong-elliptic, $8-10 \times 2.5-3.5(-4.5)$ mm, 5-veined, apex acute to obtuse. Petals similar to sepals but slightly shorter; lip 5–6 mm, spurred at base, 2-partite; hypochile lobes erect and embracing column, ovate-triangular to lanceolate, 1.5–2.5 mm, apex acute; epichile subcordate to broadly ovate, ca. $3 \times 4-5(-5.5)$ mm, apex acute, with 3 brownish longitudinal lamellae, papillate toward apex; spur protruding between bases of lateral sepals, conic, 2–3 mm, apex subacute. Column 3.5–4 mm, with 2 narrowly oblong wings; anther ovoid, ca. 1.5 mm. Capsule narrowly elliptic to broadly cylindrical, ca. $1.5 \times 0.3-0.5$ cm. Fl. Apr–Jun, fr. Aug–Sep. $2n = 34$.

Clearings in forests, thickets; 800–2300 m. Anhui, N Fujian, S Gansu, N Guangdong, N Guangxi, Guizhou, Hubei, Jiangxi, S Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea].

The report of this species from Xizang (Zayü) (Fl. Xizang. 5: 747. 1987) was based on a fruiting specimen, which was obviously misidentified.

6. *Cephalanthera longibracteata* Blume, Coll. Orchid. 188. 1859.

长苞头蕊兰 chang bao tou rui lan

Epipactis longibracteata (Blume) Wettstein; *Limodorum longibracteatum* (Blume) Kuntze; *Serapias longibracteata* (Blume) A. A. Eaton.

Plants leafy, autotrophic, 30–50 cm tall. Stem slender to

somewhat robust, with several basal sheaths, 6–8-leaved, slightly scabrous toward apex. Leaves broadly lanceolate to oblong-lanceolate, 6–14 × 1.5–3 cm, abaxially scabrous on veins, apex long acuminate. Inflorescence ± laxly 8–15-flowered; rachis 3–5.5 cm; floral bracts linear-lanceolate, basal 2 to ca. 10 cm, becoming shorter and narrower above. Flowers erect, weakly spreading, white; pedicel and ovary 12–16 mm. Sepals narrowly ovate to lanceolate, 10–13 × 2–3 mm, apex acute to acuminate. Petals ovate, 8.5–9 × ca. 3 mm, apex acute to mucronate; lip shorter than petals, 5.5–7 mm, spurred at base, 2-partite; hypochile broadly ovate; hypochile lobes erect and embracing column, triangular, 2–2.5 mm, apex subacute-falcate; epichile ovate-cordate, ca. 3.5 × 4–4.5 mm, with 3 longitudinal lamellae, papillate at apex, margin slightly undulate, apex acute; spur protruding slightly between bases of lateral sepals, slightly incurved, conic, 1–1.5 mm, apex obtuse. Column 5.5–6.5 mm; anther ovoid, ca. 1.5 mm. Capsule erect, 2–2.5 cm. Fl. May–Jun, fr. Aug–Sep. $2n = 30, 32, 33, 34, 36$.

Forests, forest margins. S Jilin (Linjiang), Liaoning [Japan, Korea, Russia (Far East)].

7. *Cephalanthera damasonium* (Miller) Druce, Ann. Scott. Nat. Hist. 60: 225. 1906.

大花头蕊兰 da hua tou rui lan

Serapias damasonium Miller, Gard. Dict., ed. 8, Serapias no. 2. 1768; *Cephalanthera yunnanensis* Handel-Mazzetti.

Plants leafy, autotrophic, 14–36 cm tall. Stem slender, smooth or sometimes scabrous toward apex, with 2–5 basal sheaths, 4- or 5(–7)-leaved. Leaves elliptic to oblong, becoming smaller and linear-lanceolate above, 3–6 × (0.5–)1.2–2 cm, apex acute to acuminate. Inflorescence laxly (1 or)2- or 3(–5)-flowered; rachis 1–2.5 cm; floral bracts foliaceous, lanceolate to elliptic, 30–50 × 5–12 mm, all exceeding ovary. Flowers suberect, rarely opening fully, white, 1.5–2.5 cm; pedicel and ovary 10–12 mm. Sepals narrowly obovate-elliptic, 1.6–1.8 cm × 5.5–6.5 mm, 7-veined, apex obtuse to acute. Petals subobovate, 13–14 × ca. 6 mm, apex acute to acuminate; lip 8–9 mm, 2-partite; hypochile gibbous-saccate, enclosed within bases of lateral sepals, with an orange-yellow patch near base of disk; hypochile lobes erect and loosely embracing column, ovate-triangular, 2–2.5 mm; epichile transversely elliptic, ca. 4 × 8 mm, densely papillose toward apex, with 3 longitudinal, orange lamellae in basal half, obtuse-truncate. Column 9–11 mm, with 2 narrow, oblong wings; anther ovoid, ca. 2.5 mm. Fl. Jun. $2n = 36, 54$.

Open forests; 2100–2900 m. N and NW Yunnan (Lijiang, Luquan) [Bhutan, India, Myanmar; SW Asia, Europe].

The extensive extra-Chinese synonymy is not cited here.

8. *Cephalanthera alpicola* Fukuyama, Bot. Mag. (Tokyo) 52: 242. 1938.

高山头蕊兰 gao shan tou rui lan

Cephalanthera taiwaniana S. S. Ying.

Plants leafy, autotrophic, 15–45 cm tall. Stem slender, with several basal sheaths, 5–8-leaved. Leaves elliptic-lanceolate to sub lanceolate, 4–10 × 0.6–2.5 cm, base slightly contracted, apex acuminate. Inflorescence laxly 3–14-flowered; rachis 6–14

cm; basal floral bract linear-lanceolate and slightly exceeding ovary, distal ones subtriangular, 3–5 mm. Flowers suberect, weakly spreading or remaining closed, white; pedicel and ovary 10–17 mm. Sepals narrowly elliptic to suboblong, 10–15 × 3–5 mm, apex acute. Petals elliptic to sublanceolate, 8–12 × 3–4.5 mm, apex acute; lip 7–12 mm, 2-partite; hypochile shallowly saccate, enclosed within bases of lateral sepals; hypochile lobes erect to spreading, obliquely triangular-ovate, apex obtuse; epichile broadly ovate to ovate-suborbicular, 3–6 × 5–6 mm, with 3–5 irregularly papillate, brownish lamellae. Column erect, 5–7 mm, with 2 small wings; anther ovoid, 2–3 mm. Capsule cylindrical, 2–3 cm. Fl. May–Aug.

• Dry open *Pinus* forests, alpine meadows; 2000–3000 m. C and N Taiwan.

9. *Cephalanthera longifolia* (Linnaeus) Fritsch, Oesterr. Bot. Z. 38: 81. 1888.

头蕊兰 tou rui lan

Serapias helleborine Linnaeus subsp. *longifolia* Linnaeus, Sp. Pl. 2: 950. 1753; *Cephalanthera acuminata* Lindley; *C. ensifolia* (Swartz) Richard var. *acuminata* (Lindley) Tang & F. T. Wang; *C. mairei* Schlechter; *C. thomsonii* H. G. Reich- enbach.

Plants leafy, autotrophic, 20–50 cm tall. Stem slender to somewhat robust, with 3–5 loosely clasping basal sheaths, 4–7-leaved. Leaves elliptic, lanceolate, or oblong-lanceolate, 4–16 ×

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0.5–3 cm, apex acuminate to long acuminate. Inflorescence subdensely 2–20-flowered; rachis 1.5–6 cm; floral bracts linear-lanceolate to narrowly triangular, basal 1 or 2 usually foliaceous and to ca. 70 mm, distal ones 2–6 mm. Flowers weakly spreading, white, 1–1.5 cm; pedicel and ovary 6–10 mm. Sepals narrowly rhombic-elliptic or narrowly elliptic-lanceolate, 11–16 × 3.5–4.5 mm, 5-veined, apex acuminate or subacute. Petals subobovate, 7–8 × ca. 4 mm, 5–7-veined, apex acute or mucronate; lip 5–7 × 6–9 mm, 2-partite; hypochile saccate, enclosed within bases of lateral sepals, with a small orange patch in middle of disk; hypochile lobes erect and embracing column, subovate-triangular, 3–4 mm, apex subacute; epichile triangular-cordate, 3–4 × 5–6 mm, with 3–5 orange lamellae, densely pillose toward apex, apex obtuse to acute. Column 4–6 mm, with 2 small oblong wings; anther 2–2.5 mm; stigma stalked. Capsule elliptic, 1.7–2 × 0.6–0.8 cm. Fl. May–Jun, fr. Sep–Oct. $2n = 16, 32, 34, 34 + 2B, 42$.

Forests, thickets, along streams, open grasslands; 1000–3600 m. S Gansu, W Henan, W Hubei, S Shaanxi, S Shanxi, W Sichuan, S and SE Xizang, NW Yunnan [Bhutan, India, Kashmir, Myanmar, Nepal, Pakistan; N Africa, SW Asia, Europe].

The extensive extra-Chinese synonymy is not cited here.

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