42. HABENARIA Willdenow, Sp. Pl. 4: 5, 44. 1805.

Fimbrorchis Szlachetko; Habenaria sect. Kryptostoma Summerhayes; Habenorkis Thouars; Kryptostoma (Summerhayes) Geerinck; Medusorchis Szlachetko; Ochyrorchis Szlachetko; Senghasiella Szlachetko; Smithanthe Szlachetko & Margottiska.

Herbs, terrestrial. Tubers subglobose, ellipsoid, or oblong, fleshy, unlobed, neck with several slender roots. Stem erect, base often with tubular sheaths, above sheaths with leaves and sometimes several bractlike leaves above. Leaves 1 to several, loosely arranged or tufted, base contracted into amplexicaul sheaths. Inflorescence racemose, terminal, few to many flowered. Flowers resupinate. Sepals free; dorsal sepal connivent with petals forming a hood; lateral sepals spreading and reflexed. Petals simple or bilobed; lip often 3-lobed, base often spurred, sometimes saccate or spurless. Column short, both sides often with auricles (staminodes); anther erect, with distinct connective and 2 divergent locules, base of each often protruding and grooved; pollinia 2, granular-farinaceous, sectile, usually each by a long caudicle attached to a viscidium; viscidium naked, relatively small; stigmas 2, separate, convex or elongate, ± clavate, at base of column; rostellum usually stout and large, with arms parallel to basal grooves of anther, ± embracing caudicles.

About 600 species: worldwide, mainly in tropical and subtropical areas; 54 species (19 endemic) in China.

The recent fragmentation of Habenaria by Szlachetko and his co-workers (Szlachetko & Olszewski, Fl. Cameroun 34: 231. 1998; Olszewski & Szlachetko, Ann. Bot. Fenn. 37: 299. 2000; Szlachetko, Orchi idea (Hamburg) 55: 489. 2004; Szlachetko, Richardiana 4: 55. 2004; Szlachetko & Margottiska, Orchiidea (Hamburg) 55: 174. 2004) has not been widely taken up. Although Szlachetko et al. retain many species in Habenaria, they also recognize the genera Fimbrorchis, Kryptostoma, Medusorchis, Ochyrorchis, Senghasiella, and Smithanthe as represented in China and have placed some Chinese Habenaria species in these genera. Habenaria is almost certainly polyphyletic and some reorganization of it is undoubtedly necessary. We await the results of molecular studies that are currently underway before adopting a different generic classification from that proposed here.

1a. Leaves basal, appressed to substrate, often 2, rarely 1 or more than 2, often cordate, orbicular, or ovate.

2a. Petals simple.

3a. Flowers white; sepals ciliate or not.

4a. Leaves 3 or 4(–6), in a rosette; lip with a conic appendage at base; spur longer than pedicel and ovary .................................................................................................................. 1. H. delavayi

4b. Leaves 2, subopposite; lip lacking an appendage; spur shorter than pedicel and ovary .................................................................................................. 2. H. siamensis

3b. Flowers green or greenish white; sepals not ciliate.

5a. Spur 8–13 mm, ca. as long as or longer than ovary; leaves 2–3 × as long as wide ......................... 5. H. humidicola

5b. Spur indistinct or 1–7 mm, shorter than ovary; leaves slightly longer than wide.

6a. Stem and ovary pubescent ................................................................................................................................. 3. H. diplonema

6b. Stem and ovary glabrous.

7a. Leaves 2, subopposite; spur ca. 7 mm ........................................................................................................... 6. H. diphylla

7b. Leaves 1 or 2, not as above; spur less than 2 mm.

8a. Inflorescence 10–20-flowered; spur ca. 1.5 mm .................................................................................. 4. H. acianthoides

8b. Inflorescence 4- or 5-flowered; spur indistinct or absent ........................................................................... 7. H. reniformis

2b. Petals bilobed, anterior lobe sometimes small and obscure.

9a. Leaves with yellowish white markings adaxially.

10a. Leaves thinly textured; sepals ciliate; petals deeply 2-lobed, lower lobe linear, 9(–13) mm ............... 8. H. fargesii

10b. Leaves relatively thickly textured; sepals not ciliate; petals shallowly 2-lobed, lower lobe ca. 0.5 mm ......................................................................................................................... 9. H. wolongensis

9b. Leaves lacking yellowish white markings adaxially.

11a. Dorsal sepal 3–6(–7) mm; petals not ciliate.

12a. Spur 6–9 mm, shorter than pedicel and ovary ...................................................................................... 10. H. aitchisonii

12b. Spur 11–13 mm, longer than pedicel and ovary ................................................................................. 11. H. balfouriana

11b. Dorsal sepal 7–13 mm; petals ciliate.

13a. Leaves glaucous adaxially; base of peduncle densely pubescent; dorsal sepal 10–13 mm; spur nearly as long as pedicel and ovary .................................................................................................................. 12. H. glaucifolia

13b. Leaves green adaxially; base of peduncle sparsely pubescent or glabrous; dorsal sepal 7–9 mm; spur longer than pedicel and ovary.

14a. Leaves with 5–7 white veins adaxially; lip lacking an appendage in mouth of spur ........ 13. H. tibetica

14b. Leaves with 5–7 green veins adaxially; lip with a conic appendage in mouth of spur ................................................................................................. 14. H. szechuanica
1b. Leaves cauline, well spaced or tufted, never appressed to substrate, various in shape but never cordate nor orbicular.

15a. Petals bilobed.
   16a. Petals shallowly bilobed; lip ± cross-shaped.
   17a. Flowers small; petals ca. 4 mm; lateral lobes of lip obvate-oblancoolate, spreading at a right angle to mid-lobe; spur 1.4–1.5 cm, ca. as long as pedicel and ovary ................................. 15. *H. schindleri*
   17b. Flowers rather large, petals 5–5.5 mm; lateral lobes of lip linear, spreading at an acute angle to mid-lobe; spur 2.5–3.5 cm, longer than pedicel and ovary ................................. 16. *H. linearifolia*

16b. Petals deeply bilobed; lip not cross-shaped.
   18a. Petals usually with 6 or 7 filiform laciniae; lip with many filiform laciniae ......................... 17. *H. polytricha*
   18b. Petals and lip lacking filiform laciniae.

15b. Petals simple.
   23a. Lateral lobes of lip with many long laciniae along outside margins.
   24a. Petals linear, ca. 0.5 mm wide; spur thickened and geniculate-curved near middle .............. 23. *H. medioflexa*
   24b. Petals not linear, 3–8 mm wide; spur not as above.

25a. Petals falcate, subovate, ca. 8 mm wide.
   26a. Sepals not ciliate; connective ca. 8 mm wide; staminodes spatulate, ca. 2 mm; spur shorter than ovary ............................................................................................................ 28. *H. yuana*
   26b. Sepals ciliate; connective 2–4 mm wide; staminodes elliptic, ca. 1 mm; spur ca. as long as or longer than ovary.
   27a. Inflorescence 1–4-flowered; spur 7–8.5 cm, much longer than ovary; connective ca. 2 mm wide .................................................................................................................. 29. *H. intermedia*
   27b. Inflorescence 5- or more flowered; spur 3.5–4 cm, ca. as long as or slightly longer than ovary; connective 3–4 mm wide ................................................................................. 30. *H. arietina*

25b. Petals oblong or lanceolate, 4–5 mm wide.
   28a. Spur 4.5–6.5 cm, much longer than pedicel and ovary ............................................................ 26. *H. davidii*
   28b. Spur 1.7–3.5 cm, shorter than or nearly as long as pedicel and ovary.
   29a. Connective 10–12 mm wide .............................................................................................. 24. *H. limprichtii*
   29b. Connective 2–5 mm wide.
      30a. Petals ± hairy adaxially; spur 17–18 mm; connective ca. 2 mm wide .... 25. *H. pectinata*
      30b. Petals glabrous adaxially; spur 20–35 mm; connective ca. 5 mm wide ........ 27. *H. mairei*

23b. Lateral lobes of lip sometimes serrate but lacking long laciniae along outside margins.

31a. Lateral sepals strongly oblique.
   32a. Lip with a ring-shaped or cupular structure, or sometimes a lamella near entrance of spur.
   33a. Lateral lobes of lip much shorter than mid-lobe.
      34a. Spur 10–17 mm, shorter than pedicel and ovary; petals oblong, 3–4 mm ........ 36. *H. acufera*
      34b. Spur 20–29 mm, longer than pedicel and ovary; petals narrowly ovate or narrowly elliptic, 4–5 mm ................................................................. 37. *H. linguella*

33b. Lateral lobes of lip nearly as long as mid-lobe.
   35a. Flowers white, with a brown vein on lateral sepals; spur 20–22 mm, slightly longer than pedicel and ovary .......................................................... 38. *H. rostellifera*
   35b. Flowers red-orange, with pale green sepals, without a brown vein on lateral sepals; spur 11–12 mm, shorter than pedicel and ovary .................. 39. *H. rostrata*

32b. Lip lacking a ring-shaped, cupular structure or lamella near entrance of spur.
   36a. Dorsal sepal much smaller than lateral sepals.
   37a. Lateral sepals obliquely axi-shaped, ca. 7 × 13 mm; petals ca. 4 mm
wide; spur 5–8 cm, pendulous, longer than pedicel and ovary; ovary glabrous ................................................................. 31. H. commelinifolia

37b. Lateral sepals obliquely triangular, ca. 5 × 8 mm; petals ca. 1 mm wide; spur 2–2.2 cm, ca. as long as or shorter than pedicel and ovary; ovary pubescent ................................................................. 32. H. austrosinensis

36b. Dorsal sepal not or slightly smaller than lateral sepals.

38a. Dorsal sepal with 3 serrulate keels on abaxial surface ..................................... 33. H. ciliolaris

38b. Dorsal sepal without keels on abaxial surface.

39a. Rachis villous on ridges; petals triangular-lanceolate, ca. 6 mm; lip with a conic callus at base; spur 1.6–2 cm, ca. as long as pedicel and ovary ................................................................. 34. H. hystrix

39b. Rachis glabrous; petals linear-lanceolate, 13–15 mm; lip without callus at base; spur 3–6 cm, much longer than pedicel and ovary ........................................ 35. H. fordii

31b. Lateral sepals not or slightly oblique.

40a. Flowers orange to red; lip mid-lobe bilobed .................................................. 40. H. rhodocheila

40b. Flowers not orange to red; lip or its mid-lobe simple.

41a. Lip often unlobed; spur often absent ......................................................... 41. H. malintana

41b. Lip deeply 3-lobed; spur present.

42a. Lateral lobes of lip broad, subrhombic or suborbicular, apical margin serrate.

43a. Plants 9–25 cm tall; leaves cordate or ovate; spur 17–20 mm, slightly shorter or nearly as long as pedicel and ovary ................................................................. 42. H. finetiana

43b. Plants 35–87 cm tall; leaves oblong to narrowly elliptic; spur to 4 cm, longer than pedicel and ovary ................................................................. 43. H. dentata

42b. Lateral lobes of lip narrow, not as above, margins never serrate.

44a. Mid-lobe of lip suberect or curved upward, apex adnate to tip of hood formed by dorsal sepal and petals.

45a. Floral bracts shorter than pedicel and ovary; lateral sepals reflexed; spur cylindric, to 21 mm, much longer than pedicel and ovary ................ 44. H. lucida

45b. Floral bracts longer than flower; lateral sepals spreading, not reflexed; spur clavate, 3–6 mm, shorter than pedicel and ovary ................................................................. 45. H. shweliensis

44b. Mid-lobe of lip never suberect or curved upward, apex never adnate to hood formed by dorsal sepal and petals.

46a. Leaves tufted at base of stem; spur longer than ovary.

47a. Leaves narrowly elliptic or broadly oblanceolate, 18–20 mm wide; flowers pale green ........................................ 46. H. iyoensis

47b. Leaves linear or linear-lanceolate, 4–15 mm wide; flowers yellowish green or white.

48a. Leaves 4 or 5, 4–6 mm wide; dorsal sepal ca. 2 mm; spur narrowly cylindric ......................... 47. H. viridiflora

48b. Leaves 6–13, 8–15 mm wide; dorsal sepal ca. 5 mm; spur narrowly cylindric-clavate.

49a. Dorsal sepal broadly ovate; lateral sepals narrowly ovate; petals ovate-ligulate; lip with lateral lobes narrower than mid-lobe .......... 48. H. plurifoliata

49b. Dorsal sepal elliptic; lateral sepals elliptic; petals linear; lip with lateral lobes and mid-lobe equal in width ....................... 49. H. tonkinensis

46b. Leaves not tufted at base of stem; spur longer or shorter than ovary.

50a. Dorsal sepal 7–8 mm.

51a. Spur narrowly cylindric, 3–5 mm, shorter than pedicel and ovary; dorsal sepal narrowly ovate, ca. 4 mm wide; petals ca. 2.5 mm wide; flowers yellow .... 50. H. fulva

51b. Spur clavate, 8–13 mm, ca. as long as pedicel and ovary; dorsal sepal cordate or broadly ovate, 5–6 mm wide; petals obliquely ovate-triangular, 3–3.8 mm wide; flowers yellowish green .................. 51. H. marginata

50b. Dorsal sepal 3–4 mm.

Habenaria yunnanensis Rolfe.

Plants 9–35 cm tall. Tubers oblong or ovoid, 1–2 × 1–1.5 cm, fleshy. Stem erect, terete, 3–5 mm in diam., glabrous, with 1 or 2 tubular sheaths, with 3 or rarely 4(–6) leaves in a dense basal rosette, and with 1–5 bractlike leaves above. Leaf blade orbicular or ovate, 1.5–5 × 1.5–4 cm, slightly fleshy, base obtuse-rounded, abruptly narrowed and amplexicaul, apex obtuse or acute. Raceme 6–15 cm, loosely 7–20-flowered; floral bracts lanceolate, ca. 1/2 length of ovary, apex aristate; ovary twisted, slightly arching, fusiorm, glabrous, including pedicel 1.3–1.8 cm. Flowers white. Dorsal sepal erect, broadly elliptic, ca. 4 × 4 mm, concave, abaxially keeled and toward apex pubescent, 3-veined; lateral sepals reflexed, lanceolate, 4–5 × ca. 2.5 mm, 3-veined, apex acute, abaxially and along margin pubescent. Petals linear, ca. 6 × 0.8 mm, base twisted, 1-veined, apex acute; lip spurred, deep 3-lobed above base; lobes narrow, equal in width, stout; lateral lobes linear-cuneate, 8–9 × 0.8–1.2 mm; mid-lobe linear, ± subcylindric, ca. 4.5 mm, glabrous. Flowers green, very small. Dorsal sepal erect, 1–2 cm, longer than ovary, with 1 slightly incurved, subulate appendage at front margin of mouth; pollinia obvoid; cilia densely nearly oblong, slender; viscidium ovate; stigmas clavate, apex papillate. Fl. Jun–Aug.

- Forests, grassy places in forests, shrubby grasslands; 1500–3000 m. Guizhou, W Sichuan, NW to SE Yunnan.


中泰玉凤花 zhong tai yu feng hua

Plants 14–16 cm tall. Tubers oblong, 2–3 cm × 8–10 mm, fleshy. Stem erect, terete, 2–3 mm in diam., glabrous, with 2 spreading basal leaves, with 3–5 bractlike leaves above. Leaf blade orbicular or ovate-oblong, 4–5 × 2.5–3.5 cm, base amplexicaul-sheathing, apex acute or acuminate; ovary twisted, slightly arching, cylindric, including pedicel to 15 mm, glabrous. Flowers white. Sepals 3-veined, margin finely ciliate; dorsal sepal forming a hood with petals, erect, ovate, concave, ca. 8 × 4 mm; lateral sepals reflexed, obliquely ovate-lanceolate, ca. 9 × 4 mm. Petals obliquely falcate-lanceolate, ca. 8 × 2.5 mm, 2-veined; lip spurred at base, deeply 3-lobed above base; lateral lobes linear-filiform, ± curved, 17–21 × ca. 0.5 mm, attenuate toward apex; mid-lobe straight, linear, 6–9 × 0.8–1.5 mm; spur pendulous, cylindric-clavate, 9–10 mm, conspicuously shorter than ovary, dilated from middle to end, near end ca. 2.2 mm in diam., apex obtuse; connective narrow, ca. 1 mm wide; rostellum short; stigmas oblong-clavate, ca. 4 mm. Fl. Aug.

- Forests, grassy places; ca. 600 m. SE Guizhou [Thailand].


小巧玉凤花 xiao qiao yu feng hua

Plants 8–13 cm tall. Tubers oblong, ca. 1 cm × 5 mm, fleshy. Stem erect or ascending, slender, pubescent, with 2 nearly opposite leaves near middle. Leaf blade orbicular, 1.5–2 × 1.4–1.7 cm, adaxially with yellowish white venation, densely finely papillate, base narrowed and amplexicaul-sheathing, margin white ciliate, apex acute. Raceme 4–14-flowered; Rachis pubescent; floral bracts lanceolate, much shorter than ovary, apex acuminate; ovary twisted, terete, pubescent, including pedicel to ca. 2 cm. Flowers green, small. Dorsal sepal erect, broadly ovate, ca. 3.5 × 3 mm, glabrous, 1-veined, apex obtuse-rounded; lateral sepals reflexed, obliquely ovate-elliptic, ca. 4 × 2.5 mm, glabrous, 1-veined, apex subobtuse. Petals erect, obliquely falcate-ovate, ca. 3.5 × 2.3 mm, glabrous, 1-veined, unlobed; lip spurred at base, above base 3-lobed; lateral lobes filiform, 6–7 mm, much longer than mid-lobe; mid-lobe linear-ligulate, ca. 2 mm, apex subacute; spur pendulous, clavate, ca. 4 mm. Fl. Aug.

- Forests, soil-covered rocks; 2800–4200 m. N Fujian, SW Sichuan, NW Yunnan.


小花玉凤花 xiao hua yu feng hua

Plants 18–20 cm tall. Tubers ovoid, ca. 1.5 cm, fleshy. Stem erect or ascending, slender, glabrous, with 1 leaf at base and 2 or 3 bractlike leaves above. Leaf blade green or purplish red, ovate-oblanceolate, 1.5–3 × 2.2–2.8 cm, slightly fleshy, base subcordate, apex mucronate. Raceme with 10–20 secund flowers, 8–12 cm; floral bracts ovate-lanceolate, much shorter than ovary, apex acuminate; ovary twisted, fusiform, including pedicel to ca. 4.5 mm, glabrous. Flowers green, very small. Dorsal sepal forming a hood with petals, erect, ovate, ca. 1.5 × 1.2 mm, 1-veined, apex obtuse; lateral sepals reflexed, obliquely ovate,
ca. 1.75 × 1 mm, 1-veined, apex obtuse. Petals obliquely ovate, ca. 1.5 × 1.5 mm, 1-veined; lip spurred at base, 3-veined, deeply 3-lobed below middle; lateral lobes divaricate, ± curved, filiform, ca. 3.5 mm; mid-lobe straight, linear, ca. 2 mm; spur pendulous, oblong-cylindric, ca. 1.5 mm, apex obtuse. Fl. Jul.


Plants 18–20 cm tall. Tubers globose, ca. 1 cm in diam., fleshy. Stem rather slender, with 1 or 2 leaves at base and 3 or 4 bractlike leaves above. Leaf blade almost spreading horizontally, orbicular, ovate-cordate, or broadly ovate-orbicular, 1.8–2.5 × 1.5–2.7 cm, fleshy, base often cordate, amplexicaul, apex obtuse. Raceme sparsely 4- or 5-flowered, 7–8 cm, glabrous; floral bracts lanceolate, small, 6–8 mm, much shorter than ovary; ovary twisted, cylindric-fusiform, including pedicel 13–16 mm, glabrous. Flowers green, small. Dorsal sepal erect, connate, narrowly ovate-oblong, ca. 5 × 1.7 mm, 3-veined, apex obtuse; lateral sepals spreading or reflexed, obliquely ovate-lanceolate, ca. 6 × 1.5 mm, 3-veined, apex acuminate. Petals oblique, narrowly lanceolate, falcate, ca. 4.5 × 1 mm, 1-veined, apex subacute; lip linear, slightly longer than or ca. as long as sepals, usually with 1 tooth on either side below middle; spur often absent; stigmas subcylindric or clavate, ca. 1.5 mm. Fl. Oct.

Grassy places in forests. Guangdong, S Hainan [Cambodia, India, Nepal, Thailand, Vietnam].


雅致玉凤花 y a zhi yu feng hua

Plants 13–24 cm tall. Tubers ovoid or oblong, 1.5–3 × 1–1.5 cm, fleshy. Stem erect or ascending, terete, slender, 1–2 mm in diam., finely papillate-pubescent, with 2 nearly opposite leaves at base, and 1–3 bractlike leaflets above leaves. Leaf blade spreading horizontally, adaxially with yellowish white markings, ovate-orbicular or orbicular, 4–4.5 × 4–5 cm, slightly fleshy, base abruptly narrowed and amplexicaul, apex acute. Raceme 4–9–flowered, 5–15 cm; rachis finely papillate-pubescent; floral bracts lanceolate, much shorter than ovary, apex acuminate; ovary twisted, cylindric, including pedicel 7–8 mm, papillate-pubescent. Flowers yellowish green. Dorsal sepal ovate, concave, 3–3.5 × ca. 2.5 mm, 3-veined, ciliate, apex acute; lateral sepals strongly reflexed, obliquely ovate, 5–5.5 × ca. 4 mm, 4-veined, ciliate, apex acute. Petals connivent with dorsal sepal, deeply 2-lobed; upper lobe falcate-oblong, ca. 4 mm; lower lobe linear, ca. 8 mm; lip spurred at base, deeply 3-lobed above base; lateral lobes divaricate, filiform, ca. 1.5 cm, apex curled; mid-lobe linear, much shorter than lateral lobes; spur pendulous, cylindric, clavate below middle, longer than ovary; connective broad; pollinia obcuneate; caudicles curved, linear, slender; viscidia subglobose; rostellum with slender lateral lobes. Fl. Aug.

Forests, along valleys; 1400–3000 m. N Chongqing, SE Gansu, Sichuan.


卧龙玉凤花 wo long yu feng hua
Plants 21–30 cm tall. Tubers oblong, 1.5–2.5 × 1–1.5 cm, fleshy. Stem erect, pubescent, with 2 nearly opposite leaves at base, and sometimes 1–6 bractlike leaflets above leaves. Leaf blade spreading horizontally, adaxially with yellowish white markings, cordate or ovate, 4–8.5 × 3.5–9 cm, slightly fleshy, base abruptly narrowed and amplexicaul, apex acute. Raceme many flowered, 7–10 cm; rachis pubescent; floral bracts lanceolate, shorter than ovary, ciliate, apex acuminata; ovary twisted, cylindric-fusiform, including pedicel 8–10 mm. Flowers yellowish green. Dorsal sepal erect, broadly ovate, concave, ca. 5 × 3.5 mm, 3-veined, apex obtuse; lateral sepals reflexed, obliquely ovate-oblong, 6–7 × 3.5–4 mm, 3-veined, apex subacute. Petals 2-lobed; upper lobe obliquely ovate-lanceolate, 5–6 × 2–2.2 mm; lower lobe a tooth at base of upper lobe; lip longer than sepals, deeply 3-lobed above base; lateral lobes retrorse, almost embracing ovary, subulate, 1–1.2 cm; mid-lobe linear, ca. 1 cm; spur pendulous, slightly curved, cylindric-clavate, ca. 1.3 cm, longer than ovary, apex subobtuse; connective relatively narrow; stigmas suboblong. Fl. Jul.–Aug.


Plants 12–33 cm tall. Tubers oblong or ellipsoid, 1–2.5 × 0.8–1.5 cm, fleshy. Stem erect, terete, papillate-pubescent, with 2 nearly opposite leaves at base. Leaf blade spreading horizontally, ovate or ovate-oblanceolate, 2–5 × 1.5–4 cm, adaxially sometimes with 5 yellowish white veins, base narrowed and amplexicaul, apex acute. Raceme several to many flowered, 5–15 cm; rachis pubescent; floral bracts ovate-lanceolate, ca. as long as or shorter than ovary, apex acuminate; ovary twisted, terete, including pedicel 7–10 mm, papillate-hairy. Flowers yellowish green or green, small. Dorsal sepal forming a hood with petals, erect, ovate, concave, 3–5 × 2.5–3.5 mm, 3-veined, apex obtuse or acute; lateral sepals reflexed, obliquely ovate-oblong, 3.5–5.5 × 2–3 mm, 3-veined, apex obtuse or acute. Petals indistinctly 2-lobed; upper lobe obliquely falcate-lanceolate, 3.5–1.5 × 2–2 mm; lower lobe a tooth at base of upper lobe; lip longer than sepals, above base deeply 3-lobed; lateral lobes retrorse, almost embracing erect sepals, subulate, 6–12 mm, apex slightly hooked; mid-lobe reflexed, straight, linear, 5–9 × 1–1.2 mm; spur pendulous, cylindric-clavate, 6–9 mm, shorter than ovary; connective relatively narrow; stigmas subclavate. Fl. Jul.–Sep. 2n = 42.


Plants 15–20 cm tall. Tubers oblong, 1–1.5 × 0.7–1 cm, fleshy. Stem erect, terete, 2–2.5 mm in diam., densely papillate-hairy, with 2 nearly opposite leaves at base. Leaf blade spreading horizontally, sometimes slightly tinged with yellowish white, ovate or broadly elliptic, 3–4 × ca. 3 cm, slightly fleshy, with 5 main veins, base obtuse-rounded, apex acuminate or acute. Raceme 3–7-flowered, erect, ca. 7 cm; rachis papillate; floral bracts lanceolate, apex acuminate; ovary twisted, fusiform, including pedicel 11–12 mm, finely papillate-hairy. Flowers yellowish green. Dorsal sepal forming a hood with petals, erect, ovate, concave, 5–6 × 3.5–4 mm, 3-veined, margin ciliate-denticulate, apex obtuse; lateral sepals reflexed, obliquely ovate-oblong, 6–7 × 3.5–4 mm, 3-veined, apex subacute. Petals 2-lobed; upper lobe obliquely ovate-lanceolate, 5–6 × 2–2.2 mm; lower lobe a tooth at base of upper lobe; lip longer than sepals, deeply 3-lobed above base; lateral lobes retrorse, almost embracing ovary, subulate, 1–1.2 cm; mid-lobe linear, ca. 1 cm; spur pendulous, slightly curved, cylindric-clavate, ca. 1.3 cm, longer than ovary, apex subobtuse; connective relatively narrow; stigmas suboblong. Fl. Jul.–Aug.


Plants 15–50 cm tall. Tubers oblong or ovoid, 1.5–3 × 1–1.5 cm, fleshy. Stem erect, terete, 3–5 mm in diam., pubescent, with 2 nearly opposite leaves at base. Leaf blade spreading horizontally, abaxially slightly tinged with grayish white, adaxially purplish green, suborbicular or ovate-orbicular, 3.5–4.6 × 3–4.7 cm, rather stout, base obtuse-rounded and amplexicaul, apex acute or subacuminate. Raceme 5–20 cm, 3–10-flowered; peduncle densely pubescent at base; rachis pubescent; floral bracts lanceolate or ovate, shorter than ovary, apex acuminate; ovary twisted, terete, including pedicel 2.5–3 cm, pubescent. Flowers white or whitish green. Dorsal sepal forming a hood with petals, erect, ovate or oblong, concave, 10–13 × 6–7 mm, 5-veined, apex obtuse; lateral sepals reflexed, obliquely ovate-oblong, 11–14 × 7–7.5 mm, 5-veined, apex acute. Petals deeply 2-lobed; upper lobe spatulate-oblong, ca. 12 × 6 mm, margin ciliate, apex obtuse; lower lobe much smaller, linear-lanceolate, 3–5 × 1–1.5 mm, apex acute or subobtuse; lip reflexed, much longer than sepals, base with a short claw, above base deeply 3-lobed; lateral lobes diverse, linear-lanceolate, ca. 2.5 cm, circinate toward apex; mid-lobe straight, linear, ca. 1.2 cm, slightly wider than lateral lobes; spur pendulous, cylindric-subclavate, 2.5–3 cm, nearly as long as ovary, apex slightly obtuse; connective extremely wide; stigmas lanceolate. Fl. Jul.–Aug.

Plants 18–35 cm tall. Tubers subglobose, oblong, or ellipsoid, 2–3 × 2–2.5 cm, fleshy. Stem erect, terete, papillate-hairy, with 2 nearly opposite leaves at base. Leaf blade spreading horizontally, ovate or orbicular, 3–6.5 × 2.5–7 cm, adaxially with 5–7 white veins, base obtuse-rounded, abruptly narrowed and amplexicaul, apex acute to obtuse. Raceme 4–10 cm, loosely 3–8-flowered; rachis papillate-hairy; floral bracts lanceolate or linear-lanceolate, apex acuminate; ovary twisted, narrowly fusiform, including pedicel 1.5–2 cm, finely papillate-hairy. Flowers yellowish green to whitish. Dorsal sepal forming a hood with petals, erect, ovate, concave, 4.5–5 × 4.5–5 mm, 5-veined, apex obtuse; lateral sepals strongly reflexed, obliquely oblong-ovate, 6–7 × 4.5–5 mm, 4(or 5)-veined, apex obtuse; lower lobe triangular-lanceolate, ca. 4 × 2 mm, 2-veined; lower lobe triangular-lanceolate, 1.5–1.8 mm, apex shallowly bilobed; lip spreading, (11–)13–15 mm, below middle deeply 3-lobed and ± cross-shaped; lobes 7–9 mm; lateral lobes spreading at right angles to mid-lobe, obovate-oblan- ceolate, 1–1.5 mm wide, apex fimbriate; mid-lobe linear, ca. 0.8 mm wide, toward apex contracted; spur pendulous, 1.4–1.5 cm, nearly as long as ovary, abruptly dilated near apex; stigmas oblong. Fl. Jul–Oct. 2n = 28.

Forests or grasslands along valleys; 200–1700 m. Anhui, Fujian, Guangdong, Hebei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shandong, Zhejiang [Japan, Korea].


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Habenaria lineafolia (Maximowicz) Szlachetko

Plants 25–80 cm tall. Tubers ovoid or globose, fleshy. Stem erect, terete, with 5–7 leaves below middle. Leaf blade linear, 9–20 × 3–7 cm, base amplexicaul-sheathing, apex acuminate. Raceme 8–20-flowered, 5–16 cm; rachis finely papillate-hairy; floral bracts lanceolate to ovate-lanceolate, basal ones ca. 1.5 cm, shorter than ovary, apex long acuminate; ovary twisted, slightly arching, cylindrical, including pedicel 1.8–2 cm, glabrous. Flowers white or greenish white, glabrous. Dorsal sepal forming a hood with petals, erect, ovate-orbicular, concave, 5.5–6 × 3.5–4 mm, 5-veined, apex obtuse; lateral sepals strongly reflexed, obliquely oblong-ovate, 6–7 × 4.5–5 mm, 4(or 5)-veined, apex obtuse. Petals 2-lobed; upper lobe ovate-triangular, ca. 4 × 2 mm, 2-veined; lower lobe triangular-lanceolate, 1.5–1.8 mm, apex shallowly bilobed; lip spreading, (11–)13–15 mm, below middle deeply 3-lobed and ± cross-shaped; lobes 7–9 mm; lateral lobes spreading at right angles to mid-lobe, obovate-oblan- ceolate, 1–1.5 mm wide, apex fimbriate; mid-lobe linear, ca. 0.8 mm wide, toward apex contracted; spur pendulous, 1.4–1.5 cm, nearly as long as ovary, abruptly dilated near apex; stigmas oblong. Fl. Jul–Sep. 2n = 28.

Forests or grasslands along valleys; 200–1500 m. Anhui, N Fujian, Hebei, Heilongjiang, Henan, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shandong, Zhejiang [Japan, Korea, Russia (Far East)].


Elephant’s Ears

Elephant’s Tusk

**Fimborchis linearifolia** (Maximowicz) Szlachetko subsp. schindleri (Schlechter) Szlachetko; Habenaria sagittifera H. G. Reichenbach f. lacerata Matsuda.

Plants 25–70 cm tall. Tubers oblong or ovoid, 5–15 mm in diam., fleshy. Stem erect, terete, with 4–7 leaves below middle. Leaf blade linear, 5–23 × 0.3–0.9 cm, base amplexicaul-sheathing, apex acuminate. Raceme 5.5–18 cm, 6–25-flowered; rachis glabrous; floral bracts linear-lanceolate to ovate-lanceolate, basal ones 15–20 mm, longer than ovary, glabrous; ovary twisted, slightly arching, terete, including pedicel 1.4–1.5 cm. Flowers white, glabrous. Dorsal sepal forming a hood with petals, erect, ovate-ornbicular, concave, 4.5–5 × 4.5–5 mm, 5-veined, apex obtuse; lateral sepals strongly reflexed, obliquely oblong-ovate, 6–7 × 4–5 mm, 4(or 5)-veined, apex obtuse. Petals 2-lobed; upper lobe ovate-triangular, ca. 4 × 2 mm, 2-veined; lower lobe triangular-lanceolate, 1.5–1.8 mm, apex shallowly bilobed; lip spreading, (11–)13–15 mm, below middle deeply 3-lobed and ± cross-shaped; lobes 7–9 mm; lateral lobes spreading at right angles to mid-lobe, obovate-oblan- ceolate, 1–1.5 mm wide, apex fimbriate; mid-lobe linear, ca. 0.8 mm wide, toward apex contracted; spur pendulous, 1.4–1.5 cm, nearly as long as ovary, abruptly dilated near apex; stigmas oblong. Fl. Jul–Oct. 2n = 28.

Forests or grasslands along valleys; 200–1700 m. Anhui, Fujian, Guangdong, Hebei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Shandong, Zhejiang [Japan, Korea, Russia (Far East)].
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Medusorchis polytricha (Rolfe) Szlachetko.

Plants 40–80 cm tall. Tubers oblong, 3–5 × 1–2.5 cm, fleshy. Stem erect, terete, stout, with 7 or 8(–10) leaves near middle and 3 to many bractlike leaves above leaves. Leaf blade narrowly elliptic to oblong-lanceolate, 4–20 × 2–6 cm, base contracted into amplexicaul sheath, apex acuminate. Raceme 6–15(–40)-flowered, 15–30 cm; floral bracts lanceolate, 10–12 mm, apex long acuminate; ovary twisted, terete, including pedicel 14–15 mm, glabrous. Flowers greenish white; sepals green. Dorsal sepal elliptilanceolate, concave, 8–9 × 3–4 mm, 3-veined, apex aristate; lateral sepals reflexed, obliquely ovate, 9–12 × 5–6 mm, 3-veined, apex aristate. Petals pale green or white, deeply 2-lobed; upper lobe 2-lobed and lower lobe 3-5-lobed once again, lobules all filiform, 14–17 mm; lip pale green or white, above base 3-lobed, each lobe divided once more into more than 20 lobules; lobules filiform, 14–18 mm; spur pendulous, white, cylindric-clavate, 12–14 mm, shorter than ovary, slightly dilated toward end, apex obtuse; stigmas oblong. Fl. Aug–Oct.

Forests; 300–1100 m. Guangxi, Jiangsu, SW Sichuan, Taiwan, Zhejiang [Japan (Ryukyu Islands), Philippines].


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Habenaria amanoana Ohwi; H. delessertiana Kraenzlin; H. linearpetala Hayata; H. rhynchocarpa (Thwaites) J. D. Hooker; H. sutebensis Rolfe ex Downie; Platanthera rhyncho-scarpa Thwaites.

Plants 40–89 cm tall. Tubers oblong or narrowly ellipsoid, 2–5 × 1–2 cm, fleshy. Stem erect, terete, stout, with 5–8 leaves near middle and many bractlike leaves above. Leaf blade elliptic or oblong to oblong-lanceolate, 8–16 × 3–5.5 cm, base contracted into amplexicaul sheath, apex acute or acuminate. Raceme densely many flowered, 10–20 cm; floral bracts lanceolate or ovate-lanceolate, 1.5–2.8 × 0.4–0.6 cm, often longer than flowers, apex aristate; ovary twisted, cylindric-clavate, including pedicel 1.5–2.2 cm, glabrous. Flowers green or greenish white. Dorsal sepal erect, ovate-clavate, concave, 1.4–1.6 × 0.4–0.5 cm, 3-veined, apex long acuminate or caudate-aristate; lateral sepals reflexed, obliquely ovate, 1.6–1.8 × 0.5–0.6 cm, 3-veined, apex long acuminate or caudate-aristate. Petals slightly shorter and narrower than dorsal sepal, 2-lobed; upper lobe linear, 10–13 × 1–1.8 mm, 1-veined, apex acuminate; lower lobe narrowly falcate, small, ca. 2.5 mm; lip brownish, 10–15 mm, deeply 3-lobed from base; lateral lobes linear or subulate, shorter than mid-lobe; mid-lobe linear or ligulate, wider than lateral lobes; spur pendulous, cylindric, 15–26 mm, ca. as long as or longer than ovary, apex obtuse; stigmas oblong-clavate. Fl. Aug–Oct. 2n = 40, 42.

Broad-leaved forests or forest margins; 300–1800 m. Guizhou, Taiwan, SE Xizang [India, Japan (Ryukyu Islands), Kashmir, Nepal, Philippines, Thailand, Vietnam].


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Habenaria cirrhifera Ohwi; H. longitentaculata Hayata; H. polytricha (J. D. Hooker) Pradhan (1979), not Rolfe (1896); H. stenopetala Lindley var. polytricha J. D. Hooker.

Plants 40–70 cm tall. Tubers oblong, 3–5 × 1–2.5 cm, fleshy. Stem erect, terete, stout, with 6 or 7 leaves near middle and 2–7 bractlike leaves above. Leaf blade oblong-lanceolate or obovate-lanceolate, 13–15 × 3.5–4.5 cm, base contracted into amplexicaul sheath, apex acute or acuminate. Raceme densely many flowered, 8–20 cm; floral bracts lanceolate, 18–24 × 2.5–4 mm, ca. as long as or longer than ovary, apex long acuminate; ovary twisted, cylindric, including pedicel 1.8–2.2 cm, glabrous. Flowers green. Dorsal sepal erect, ovate-lanceolate, concave, 1.2–1.5 × 0.4–0.6 cm, 3-veined, apex long acuminate-caudate; lateral sepals reflexed, slightly oblique, ovate-lanceolate, 1.4–1.5 × 0.4–0.6 cm, 3-veined, apex long acuminate-caudate. Petals deeply 2-lobed from base; lobes divaricate, filiform; upper lobe 1.1–1.4 cm; lower lobe 1.8–2 cm; lip deeply 3-lobed from base; lobes filiform, 1.8–2.5 cm × ca. 0.8 mm, sometimes mid-lobe shorter than lateral lobes; spur pendulous, cylindric, 1.8–2.3 cm, ca. as long as or longer than ovary, slightly thickened toward end; pollinia oblong; viscidia orbicular, small; stigmas clavate. Fl. Aug–Oct. 2n = 42, 42 + 2B.

Broad-leaved forests; 400–700 m. SW Guangxi, SE Hainan, N Taiwan [India (Sikkim), Japan (Ryukyu Islands), Nepal, Vietnam].


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Habenaria cirrhifera Ohwi; H. longitentaculata Hayata; H. polytricha (J. D. Hooker) Pradhan (1979), not Rolfe (1896); H. stenopetala Lindley var. polytricha J. D. Hooker.

Plants 15–45 cm tall. Tubers oblong, to 3.5 × ca. 1.5 cm, fleshy. Stem erect, terete, slender, with 3 or 4 leaves near middle and 2 or 3 bractlike leaves above. Leaf blade lanceolate or ovate-lanceolate, 2.5–5.2 × 0.8–1.2 cm, base contracted into amplexicaul sheath, margin very narrow and membranous, apex acuminate. Raceme 2–9-flowered; floral bracts ovate-lanceolate, concave, ca. 2.4 cm, often longer than ovary, apex long acuminate; ovary twisted, cylindric-fusiform, including pedicel 18–20 mm, glabrous. Flowers whitish green. Sepals abaxially green, adaxially white, 8–9 × 3.5–4.5 mm, 3-veined, apex acute; dorsal sepal concave-hooded, erect, narrowly ovate; lateral sepals reflexed, obliquely ovate, concave. Petals white, obliquely ovate, 9–11 × ca. 2 mm, deeply 2-lobed from base; upper lobe shorter and broader than lower lobe, basal half connivent with dorsal sepal, apical half spreading, knife-shaped; lower lobe filiform, apex often curved; lip pale green, 9–12 mm, deeply 3-lobed from base; lobes linear-filiform; lateral lobes ca. as long as but narrower than mid-lobe; spur pendulous, yellowish green, base narrow and whitish, 22–24 mm, longer than ovary, slender, with widest part near middle, becoming narrower toward both ends; pollinia subglobose; caudicles 3.5–4 mm; viscidia narrowly elliptic, ca. 0.5 mm; stigmas yellowish white, broadly bean-shaped. Fl. Oct.

● Forests, along valleys; ca. 300 m. Hong Kong.

Habenaria pseudodenticulata Handel-Mazzetti.

Plants 35–60 cm tall. Tubers oblong, 3–4 × 1–2 cm, fleshy. Stem erect, terete, stout, with 5 or 6 leaves near middle and many bractlike leaves above. Leaf blade elliptic or elliptic-lanceolate, 3–15 × 2–4 cm, base contracted into amplexical sheath, apex acuminate. Raceme loosely 3–12-flowered, 4–12 cm; floral bracts narrowly lanceolate, ca. 15 × 3–4 mm, apex acuminate; ovary twisted, slightly arching, cylindric-fusiform, including pedicel 1.5–3 cm, glabrous. Flowers greenish or white. Dorsal sepal concave-hooded, ovate, ca. 6 × 12 mm, thickened and geniculate-curved near middle; stigmas globose. Fl. Sep.

Forests; 700–800 m. S Yunnan [Thailand, Vietnam].


宽药隔玉凤花 kuan yao ye yu feng hua

Habenaria oligoschista Schlechter; H. pectinata D. Don var. limprichtii (Schlechter) Pradhan; Kryptostoma limprichtii (Schlechter) Szlachetko & Olszewski; K. oligoschistum (Schlechter) Szlachetko & Olszewski; Ochyrorchis limprichtii (Schlechter) Szlachetko; O. oligoschista (Schlechter) Szlachetko

Plants turning black when dried, 18–60 cm tall. Tubers ovoid-ellipsoid or oblong, 1.5–3 × 1–1.5 cm, fleshy. Stem erect, terete, stout, with 4–7 leaves. Leaf blade ovate to oblong-lanceolate, 4–10 × 1.5–3 cm, base amplexical, apex acuminate or acute. Raceme loosely 3–20-flowered, 5–20 cm; floral bracts ovate-lanceolate, 3–4 × ca. 1 cm, apex acuminate, basal ones ca. as long as ovary; ovary twisted, terete, including pedicel 2–2.5 cm. Sepals green or whitish green, apical margin ciliate; dorsal sepal forming a hood with petals, erect, concave, ovate-elliptic, 18–20 × 9–10 mm, 5-veined, apex obtuse; lateral sepals reflexed, obliquely ovate, 19–21 × 9–10 mm, 5- or 6-veined, apex acute. Petals erect, white, obliquely oblong, falcate, 18–20 × 5–7 mm, 3-veined, unlobed, margin ciliate; lip white, slightly longer than sepal, spurred at base, deeply 3-lobed above base; lobes nearly equal in length, hairy; lateral lobes linear, outer margins with 8–10 filiform lobules; mid-lobe linear, ca. 15 × 1 mm, apex obtuse; spur pendulous, cylindric, 2–3 cm, ca. as long as or shorter than ovary, apex obtuse; connective very broad, 10–12 mm wide; pollinia ovoid; caudicles linear, slender; viscidia orbicular, small, rostellum with elongate arms; stigmas clavate. Fl. Jun–Aug.

Forests, thickets, grasslands; 1900–3500 m. W Hubei, Sichuan, NW to S Yunnan [Vietnam].


剑叶玉凤花 jian ye ye yu feng hua

Orchis pectinata Smith, Exot. Bot. 2: 77. 1806, not Thunberg (1794); Habenaria ensifolia Lindley; Kryptostoma pectinatum (D. Don) Szlachetko & Olszewski; Ochyrorchis ensifolia (Lindley) Szlachetko; O. pectinata (D. Don) Szlachetko

Plants turning black when dried, 55–70 cm tall. Tubers oblong, 2–3 × 1–1.5 cm, fleshy. Stem erect, terete, stout, glabrous, with several tubular sheaths and many leaves. Leaf blade oblong to linear-lanceolate, 6–15 × 1.5–2 cm, base amplexical, apex acuminate. Raceme 6–13-flowered, 10–20 cm; floral bracts lanceolate to linear-lanceolate, 2.5–3.2 cm, much longer than ovary, apex acuminate; ovary twisted, slightly arching, terete, including pedicel 1.8–2 cm. Sepals greenish, 5-veined,
floral bracts elliptic-lanceolate, margin ciliate, apex acuminate; ovary twisted, terete, including pedicel 2–3 cm. Sepals yellowish green, margin ciliate; dorsal sepal erect, narrowly ovate, concave, 1.3–1.5 × 0.6–0.7 cm, 5-veined, apex obtuse; lateral sepals spreading, slightly oblique, ovate-lanceolate, 1.4–1.7 × 0.5–0.6 cm, 5-veined, apex acute. Petsals forming a hood with dorsal sepal, erect, white, obliquely oblong, 1.3–1.5 × ca. 0.4 cm, 3-veined, margin ciliate, unlobed, apex obtuse; lip white or yellowish white, 20–25 mm, base spurred, deeply 3-lobed above base, lobes ciliate; lateral lobes linear, 19–22 mm, outer margin comblike, with 8–10 filiform lobules; mid-lobe linear, 18–20 mm; spur pendulous, cylindric-clavate, 20–35 mm, ca. as long as or slightly shorter than ovary, thickened toward end; connective 4–5 mm wide; pollinia narrowly ellipsoid, ca. 4 mm; cadsicles linear, ca. 4 mm; viscidia ovate, small; stigmas clavate. Fl. Jul–Aug.

- Forests, shrubby grasslands; 2400–3500 m. W Sichuan, SE Xizang, N Yunnan.


Ochyrorchis mairei (Schlechter) Szlachetko.

Plants turning black when dried, 40–57 cm tall. Tubers oblong, ca. 2 × 1 cm, fleshy. Stem erect, terete, stout, with 5 or 6 laxly arranged leaves. Leaf blade ovate or ovate-elliptic, 2.5–9 × 2–4 cm, base amplexicaul, apex acute. Raceme 7–9-flowered, 10–12 cm; floral bracts elliptic-ovate, 2.5–3.5 × 0.7–1.2 cm, longer than ovary, apex acuminate; ovary twisted, cylindric-fusiform, including pedicel 2–2.5 cm. Flowers greenish, large. Dorsal sepal erect, oblong-elliptic, concave, 2–2.1 × 1–1.1 cm, 5-veined, apex obtuse; lateral sepal spreading, obliquely oblong, 2.1–2.2 × ca. 0.8 cm, 5-veined, apex acute. Petals forming a hood with dorsal sepal, obliquely subovate-falcate, 2–2.1 × ca. 0.8 cm, 5- or 6-veined, margin slightly ciliate, unlobed, apex obtuse; lip ca. 2.5 cm, base spurred, deeply 3-lobed above base, lobes ciliate; lateral lobes linear, 1.8–2 cm, outer margin with more than 10 filiform lobules; mid-lobe linear, 1.5–1.7 cm; spur pendulous, cylindric-clavate, 1.4–2.5 cm, slightly dilated toward end, shorter than ovary; connective 12–15 mm wide; pollinia narrowly ellipsoid, ca. 3 mm; cadsicles linear, ca. 5 mm; viscidia subglobose, small; stigmas clavate. Fl. Aug.

- Forests; 1800–2600 m. W Sichuan, S Yunnan.


Habenaria intermedia (D. Don) Olszewski & Szlachetko, Ochyrorchis intermedia (D. Don) Szlachetko.

Plants turning black when dried, 23–30 cm tall. Tubers ellipsoid, 1.5–3 × 1–2 cm, fleshy. Stem erect, terete, stout, with 3–5 laxly arranged leaves. Leaf blade ovate-lanceolate, 3.5–8 × 2–4 cm, base amplexicaul, apex acute. Raceme 1–4-flowered, 6–15 cm; floral bracts ovate, 4–5 cm, nearly as long as ovary, acuminate; ovary twisted, terete, including pedicel 3.8–4.5 cm. Flowers white or greenish. Sepals ciliate; dorsal sepal erect, ovate-oblong, concave, ca. 2.2 × 1.2 cm, 7-veined, apex acute; lateral sepal reflexed, obliquely falcate-lanceolate, ca. 3 × 0.6 cm; apical margin ciliate, apex often recurved; dorsal sepal erect, concave, lanceolate, ca. 17 × 5 mm, apex subacute; lateral sepals spreading, obliquely oblong, subfalcate, ca. 19 × 5 mm, apex acute. Petals forming a hood with dorsal sepal, greenish or white, obliquely falcate, ca. 17 × 3 mm, adaxially hairy, margin ciliate, unlobed, apex acute; lip white, slightly longer than sepal, spurred at base, deeply 3-lobed; lateral lobes linear, ca. 2 cm, outer margin with 6 or 7 filiform lobules; mid-lobe linear, ca. 1.8 cm; spur pendulous, cylindric-clavate, 17–18 mm, slightly dilated toward apex; connective ca. 2 mm wide; pollinia narrowly ellipsoid; cadsicles curved, slender; viscidia dis-oid; stigma thinly clavate. Fl. Aug. 2n = 42, 42 + 2B.

Forests; ca. 1800 m. S Yunnan [India, Nepal].


Habenaria chloropecten Schlechter; H. leucopecten Schlechter; H. pectinata D. Don var. davidii (Franchet) Finet; Kryptostoma davidii (Franchet) Szlachetko & Olszewski; Ochyrorchis davidii (Franchet) Szlachetko.

Plants turning black when dried, 65–75 cm tall. Tubers oblong, 2–5 × 0.8–1.5 cm, fleshy. Stem erect, terete, stout, 4–6 mm in diam., with 5–7 leaves. Leaf blade ovate, ovate-oblong, or oblong-lanceolate, 5–12 × 1.5–4.5 cm, base amplexicaul, apex acuminate. Raceme 4–15-flowered, 4–21 cm; floral bracts lanceolate, ca. 4.5 cm, apex acuminate, basal ones longer than ovary; ovary twisted, terete, including pedicel 2.5–3.5 cm. Sepals greenish or white, margin ciliate; dorsal sepal erect, oblong, concave, 15–18 × 6–7 mm, 5-veined, apex obtuse; lateral sepals reflexed, obliquely ovate-lanceolate, 17–20 × 6–8 mm, 5–7-veined, apex acuminate. Petals forming a hood with dorsal sepal, erect, white, obliquely lanceolate, subfalcate, ca. 18 × 0.6 cm; caudicles linear, ca. 2 cm, outer margin with 6 or 7 filiform lobules; mid-lobe linear, ca. 1.8 cm; spur pendulous, cylindric-clavate, 17–18 mm, slightly dilated toward apex; connective ca. 2 mm wide; pol-linia narrowly ellipsoid; cadsicles curved, slender; viscidia dis-oid; stigma thinly clavate. Fl. Aug. 2n = 42, 42 + 2B.

Forests; ca. 1800 m. S Yunnan [India, Nepal].


Ochyrorchis mairei (Schlechter) Szlachetko.

Plants turning black when dried, 18–65 cm tall. Tubers oblong or ovoid, 1.5–2.5 × 1–1.5 cm, fleshy. Stem erect, terete, robust, with 2 or 3 tubular sheaths and 5 or 6 leaves. Leaf blade elliptic-ligulate or oblong-lanceolate, 2.5–12 × 1.5–4 cm, base amplexicaul, apex acuminate. Raceme 4–19-flowered, 6–18 cm;

cm, 7-veined, apex acute. Petals forming a hood with dorsal sepal, erect, white, obliquely subovate-falcate, ca. 2.2 × 0.8 cm, 5-veined, margin ciliate, unlobed, apex acute; lip 2.8–3 cm, base spurred, deeply 3-lobed above base, lobes ciliate; lateral lobes linear, outer margin with 10 filiform lobules; mid-lobe linear, 18–20 mm, slightly shorter than lateral lobes, apex acute; spur pendulous, cylindrical, 7–8.5 cm, much longer than ovary, slightly dilated near end, apex obtuse; connective ca. 2 mm wide; pollinia ovoid; caudicles linear; viscidia orbicular; small; rostellum elongate arms; stigmas clavate. Fl. Jul. 2n = 42.

Forests; 2600–3000 m. S Xizang [India, Kashmir, Nepal].


Habenaria intermedia D. Don var. arietina (J. D. Hooker) Finet; H. pectinata D. Don var. arietina (J. D. Hooker) Kraenzlin; Ochyrochis arietina (J. D. Hooker) Szlachetko.

Plants turning black when dried, 57–65 cm tall. Tubers oblong, 3–5 × 1–2 cm, fleshy. Stem erect, terete, robust, with 5–7 laxly arranged leaves. Leaf blade ovate-lanceolate or oblong-lanceolate, 5.5–10 × 2–3 cm, base amplexicaul, apex acute. Raceme densely many (more than 5-) flowered, to 30 cm; floral bracts ovate-lanceolate, 1.8–2 cm, nearly as long as ovary, apex acuminata; ovary twisted, terete, including pedicel 3–3.5 cm. Flowers white or greenish white. Sepals 5-veined, ciliate; dorsal sepal erect, oblong, concave, ca. 19 × 6 mm, apex acute; lateral sepal reflexed, obliquely falcate-lanceolate, ca. 20 × 6 mm, apex acute. Petals forming a hood with dorsal sepals, obliquely subovate-falcate, ca. 19 × 8 mm, 5-veined, adaxially pubescent, margin ciliate, unlobed; lip ca. 3 cm, base spurred, deeply 3-lobed above base; lobes linear, nearly equal in length, ciliate; lateral lobes ca. 2.2 cm, outer margin with 10 filiform lobules; mid-lobe ca. 2 mm wide; spur pendulous, cylindrical-clavate, 3.5–4 cm, as long as or slightly longer than ovary, slightly dilated below middle, apex obtuse; connective 3.5–4 mm wide; pollinia ovoid; caudicles linear; viscidia orbicular; small; rostellum with elongate arms; stigmas clavate. Fl. Aug. 2n = 42.

Grassy slopes; 2300–2400 m. SE Xizang [Bhutan, India, Nepal].


Habenaria commelinifolia Roxburgh, Fl. Ind., ed. 1832, 3: 451. 1832 ["commelinifolia"].

Plants 60–75 cm tall. Tubers ellipsoid or oblong, 5–8 × 3–5 cm, fleshy. Stem erect, stout, with 4–6 well-spaced leaves and several bractlike leaves above. Leaf blade oblong-blanched, linear-lanceolate to linear-lanceolate, 7–15 × 1.5–2.5 cm, base contracted into amplexicaul sheath, apex acute. Raceme many flowered, 9–11 cm; floral bracts linear-lanceolate, ca. as long as or longer than flowers, margin ciliate, apex acuminate; ovary twisted, slender, including pedicel 3–4 cm. Flowers white. Dorsal sepal concave-hooded, broadly ovate, ca. 7 × 9 mm, 5-veined, apex acute; lateral sepals reflexed, strongly oblique, axe-shaped, ca. 7 mm, strongly dilated toward apex and ca. 13 mm wide, with 3 strongly curved veins. Petals connivent with dorsal sepal, obliquely oblong, subfalcate, ca. 6.5 × 4 mm, 2-veined, apex acute or obtuse; lip ca. 4 cm, with linear base 4–6 mm, then deeply 3-lobed, lobes filiform-linear; lateral lobes 2.5–3.2 cm; mid-lobe pendulous, 1.8–2.2 cm, slightly wider than lateral lobes; spur pendulous, cylindrical-clavate, 5–8 cm, slender, near apex dilated, with a bristle projection on front margin of mouth; pollinia ellipsoid; caudicles linear; viscidia orbicular; stigmas clavate. Fl. Aug. 2n = 42.

Forests; 900–1200 m. SW Yunnan [India, Myanmar, Nepal, Thailand, Vietnam].


Habenaria commelinifolia Roxburgh, Fl. Ind., ed. 1832, 3: 451. 1832 ["commelinifolia"].

Plants 30–60 cm tall. Tubers narrowly ellipsoid, 3–5 × 1–3 cm, fleshy. Stem erect, terete, stout, pubescent, with 3–5 leaves below middle and 9–13 bractlike leaves above. Leaf blade narrowly elliptic to oblong-oblancoate, 13–25 × 2.5–6 cm, relatively thin, base contracted into amplexicaul sheath, apex acuminate. Raceme many flowered, 9–14 cm; rachis pubescent; floral bracts lanceolate, ca. 15 mm, shorter than ovary, ciliate, apex acuminate; ovary twisted, cylindrical-fusiform, pubescent, including pedicel 15–27 mm. Flowers white. Dorsal sepal concave-hooded, broadly ovate, ca. 3.5 × 5 mm, abaxially pubescent, 3-veined, apex acute; lateral sepals reflexed, strongly obliquely triangular, ca. 5 mm, toward apex strongly dilated and ca. 8 mm wide, with 3 strongly curved veins. Petals forming a hood with dorsal sepal, obliquely linear, ca. 4 × 1 mm, 1-veined, apex obtuse; lip longer than sepals, above base deeply 3-lobed; lobes similar, linear, ca. 8 mm; spur curving upward above ovary, cylindrical-clavate, 20–22 mm, ca. as long as or slightly shorter than ovary, apex dilated; connective narrow; stigmas elliptic, ca. 1 mm. Fl. Jul.–Aug.

Damp places in forests along valleys; 700–1400 m. S Yunnan [Thailand].


Habenaria kweitchuenensis Schlechter.

Plants 25–60 cm tall. Tubers narrowly ellipsoid or oblong, 3–5 × 1.5–2.5 cm, fleshy. Stem erect, terete, stout, with 5 or 6 leaves near middle and 5–10 bractlike leaves above. Leaf blade elliptic-lanceolate, obtuse-spatulate, or narrowly elliptic, 5–16 × 2–5 cm, base contracted and amplexicaul, apex acuminate or acute. Raceme 6–30-flowered, 9–23 cm; peduncle and rachis ridged, ridges villous; floral bracts ovate, 13–15 mm, shorter than ovary, ciliate, apex acuminate; ovary twisted, cylindrical-fusiform, denticulate-ridged, including pedicel 23–25 mm. Flowers white or greenish white, rarely tinged with pink. Dorsal sepal forming a concave hood with petals, saccate, broadly ovate, 6–9 × 5.5–8 mm, abaxially 3-keeled, 5-veined, toward apical margin ciliate; lateral sepals reflexed, strongly oblique, ovate, 6.5–10 × 4–7 mm, 3- or 4-veined, apex acute. Petals obliquely lanceolate, 6–7 × 2–3 mm, unlobed, 1-veined, apex

Plants 30–45 cm tall. Tubers oblong, ca. 3 × 1 cm, fleshy. Stem erect, terete, stout, with 5 or 6 leaves below middle and 5–8 bractlike leaves above. Leaf blade narrowly elliptic or oblong, 9–16 × 3–5 cm, base contracted and amplexicaul, apex acuminate or acute. Raceme 6–10-flowered, 8–11 cm; peduncle and racis ridged, ridges villous; floral bracts ovate, ca. 1.5 cm, shorter than ovary, ciliate, apex acuminate; ovary twisted, cylindric-fusiform, slightly ridged, including pedicel ca. 18 mm. Flowers white or greenish white. Dorsal sepal forming a hood with petals, broadly ovate, ca. 6 × 6–6.5 mm, 3-veined; lateral sepals reflexed, strongly oblique, ovate, ca. 7 × 6 mm, 3-veined, apex acute. Petals obliquely triangular-lanceolate, ca. 6 × 2 mm, simple, 1-veined, apex long acuminate; lip longer than sepals, deeply 3-lobed from base; petals, filiform; lateral lobes 20–22 mm; mid-lobe 20–24 mm, base with 1 obtusely conic callus; spur spreading horizontally, cylindric-clavate, 16–20 mm, ca. as long as ovary, slightly dilated toward apex; stigmas narrowly elliptic, ca. 1.5 mm. Fl. Aug–Sep. 2n = 42.

Forests, along valleys; 300–400 m. Guangdong, W Hainan [Indonesia (Kalimantan), Philippines].


Habenaria hystrix Rolfe, Orchidaceae 2: 35. 1908.

Plants 28–45 cm tall. Tubers oblong, ca. 3 × 1 cm, fleshy. Stem erect, terete, stout, with 5 or 6 leaves below middle and 5–8 bractlike leaves above. Leaf blade narrowly elliptic or oblong, 9–16 × 3–5 cm, base contracted and amplexicaul, apex acuminate or acute. Raceme 6–10-flowered, 8–11 cm; peduncle and racis ridged, ridges villous; floral bracts ovate, ca. 1.5 cm, shorter than ovary, ciliate, apex acuminate; ovary twisted, cylindric-fusiform, slightly ridged, including pedicel ca. 18 mm. Flowers white or greenish white. Dorsal sepal forming a hood with petals, broadly ovate, ca. 6 × 6–6.5 mm, 3-veined; lateral sepals reflexed, strongly oblique, ovate, ca. 7 × 6 mm, 3-veined, apex acute. Petals obliquely triangular-lanceolate, ca. 6 × 2 mm, simple, 1-veined, apex long acuminate; lip longer than sepals, deeply 3-lobed from base; petals, filiform; lateral lobes 20–22 mm; mid-lobe 20–24 mm, base with 1 obtusely conic callus; spur spreading horizontally, cylindric-clavate, 16–20 mm, ca. as long as ovary, slightly dilated toward apex; stigmas narrowly elliptic, ca. 1.5 mm. Fl. Aug–Sep. 2n = 42.

Forests, along valleys; 300–400 m. Guangdong, W Hainan [Indonesia (Kalimantan), Philippines].


Habenaria loloorum Schlechter.

Plants 14–38 cm tall. Tubers oblong or narrowly ellipsoid, 2.5–4 × 1–2.5 cm, fleshy. Stem erect, terete, glabrous, with 3 or 4 leaves and many bractlike leaflets. Leaf blade narrowly oblong or narrowly oblong-lanceolate, 4–12 × 1–1.5 cm, base amplexicaul, apex acuminate or acute. Raceme 8–20-flowered, 3–8 cm; floral bracts lanceolate, basal ones 1.5–1.7 cm, longer than ovary, ciliate; ovary twisted, cylindric-fusiform, including pedicel 15–18 mm. Flowers yellow, small. Dorsal sepal forming a hood with petals, erect, broadly ovate, concave, 3–4.5 × 3–3.5 mm, 3-veined, apex obtuse; lateral sepals reflexed, obliquely ovate-elliptic, 5–6 × 3.5–4 mm, 3-veined, apex obtuse. Petals obliquely oblong, 3–4 × 1.8–2 mm, 1-veined, unlobed; lip 9–10 mm, spurred at base, with a cupular structure near mouth of spur, spreading, 3-lobed from base; lateral lobes subulate, 1.5–3.5 mm; mid-lobe straight, linear, 7–8 × ca. 1 mm, apex obtuse; spur pendulous, cylindric-clavate, 10–17 mm, shorter than ovary, near middle geniculate-curved, slightly thickened from middle to apex; connective narrow; pollinia narrowly ellipsoid; caudicles linear, longer than pollinia; viscidia orbicular, small; stigmas suberect, exserted along both sides of spur mouth, oblong, 2–2.5 mm. Fl. June–Aug. 2n = 42 + 0–2B.

Forests, thickets, grasslands; 200–2000 m. Guangxi, SW and W Sichuan, Yunnan [NE India, Laos, Malaysia (Peninsular), Myanmar, Thailand, Vietnam].


Centrochilus gracilis Schauer; Habenaria acuifera Lindley var. linguella (Lindley) Finet; H. chrysantha Schlechter; H. endothrix Miquel; H. simeonis Kraenzlin.

Plants 20–50(–75) cm tall. Tubers 3–5 × 1–2 cm, fleshy. Stem erect, terete, glabrous, with 3 or 4 leaves and 3–9 bractlike leaflets. Leaf blade narrowly oblong to narrowly oblong-lanceolate, 5–12(–27) × 1.2–2 cm, base amplexicaul, apex acuminate. Raceme densely 9–20-flowered, 2.5–6 cm; floral bracts linear-lanceolate, 1.2–2.5 cm, ciliate; ovary twisted, cylindric-fusiform, including pedicel 1.8–2.3 cm. Flowers yellow or brownish yellow. Dorsal sepal forming a hood with petals, erect, broadly elliptic, concave, 4–5 × 3–3.5 mm, 3-veined, apex obtuse; lateral sepals reflexed, oblique, broadly obovate, 6–7 × 4.4–5.5 mm, 3- or 4-veined, apex obtuse or subacute. Petals oblique, narrowly ovate or obliquely narrow elliptic, 4–5 × 2.5–4 mm, 1-veined, apex obtuse; lip 9–10 mm, spurred at base, with a ring-shaped rim at mouth of spur, 3-lobed from base; lateral lobes subulate, 1.5–2.75 mm, apex acuminate; mid-lobe linear, 8–9 mm, apex obtuse; spur pendulous, cylindric, 2.2–9 cm, longer than ovary, slender, slightly thickened toward end, 1–1.5 mm in diam., apex obtuse; connective narrow; pollinia narrowly obovoid; caudicles linear, longer than pollinia; viscidia ovate; stigmas oblong, ca. 1.5 mm. Fl. June–Aug.

Forests, grasslands; 500–2500 m. Guangdong, Guangxi, Guizhou, Hainan, Yunnan [Vietnam].

齿片坡参 chi pian po shen

Habenaria hancockii Rolfe.

Plants 17–40 cm tall. Tubers oblong, 2–5 × 1–2 cm, fleshy. Stem erect, terete, stout, glabrous, with 4 or 5 leaves and 5–9 bractlike leaflets. Leaf blade narrowly elliptic or oblong to oblong-lanceolate, 5–10 × 1–2 cm, base amplexicaul, apex acuminate. Raceme densely many flowered, 3.5–6 cm; floral bracts lanceolate, 2–2.5 cm, ciliate, apex acuminate; ovary twisted, cylindric-fusiform, including pedicel 1.8–1.9 cm. Flowers white, lateral sepals with brown markings. Dorsal sepal forming a hood with petals, erect, broadly elliptic, concave, ca. 6 × 4 mm, 3-veined, apex obtuse; lateral sepal reflexed, obliquely elliptic, ca. 9 × 4.5 mm, 4-veined. Petals oblique, narrowly ovate or narrowly elliptic, ca. 6 × 3 mm, 3-veined, unlobed, apical margin ciliate; lip spurred at base, with a 3-toothed, subcylindric lamella near mouth of spur, deeply 3-lobed from base, lobes linear; lateral lobes divericate, 6–8 × ca. 1 mm, attenuate toward apex; mid-lobe ca. 10 × 2 mm, apex obtuse; spur pendulous, cylindric-clavate, 2–2.2 cm, slightly longer than ovary, apical half slightly dilated, apex obtuse; connective relatively narrow; pollinia narrowly ellipsoid; caudicles linear, longer than pollinia; viscidium elliptic, small; stigmas oblong, ca. 2.5 mm. Fl. Jul–Aug.

Grassy slopes; 1000–2200 m. C Guizhou, C, NW, and SE Yunnan [Cambodia, Malaysia (Peninsular), Thailand, Vietnam].


喙房坡参 hui fang po shen

Habenaria acuifera Lindley var. rostrata (Lindley) Finet.

Plants 20–30 cm tall. Tubers oblong, 2–3 × 0.8–1 cm, fleshy. Stem erect, terete, glabrous, with 4 or 5 leaves and 4–8 bractlike leaflets. Leaf blade oblong or oblong-lanceolate, 5–10 × 0.7–1 cm, base amplexicaul, apex acute. Raceme many flowered, sometimes nearly corymbiform, 4–6 cm; floral bracts lanceolate, shorter than ovary, ciliate, apex aristate; ovary twisted, arching, cylindric-fusiform, including pedicel 15–16 mm. Flowers reddish orange, with greenish sepals. Dorsal sepal forming a hood with petals, erect, broadly elliptic, concave, ca. 4.5 × 3 mm, 3-veined, apex obtuse; lateral sepals reflexed, obliquely ovate-elliptic, ca. 6.5 × 4 mm, 3-veined, apex obtuse. Petals obliquely broadly oblong, falcate, ca. 4.5 × 2 mm, 1-veined, margin ciliate, apex obtuse; lip ca. 10 mm, spurred at base, with a 3-lobed, ring-shaped structure near mouth of spur, shortly 3-lobed, lobes linear; lateral lobes extremely bifid, ca. 7 × 0.6 mm, apex acuminate; mid-lobe ca. 8 × 1 mm, apex obtuse; spur pendulous, cylindric-clavate, 11–12 mm, slightly shorter than ovary, slightly dilated toward apex; connective narrow; pollinia ellipsoid; caudicles linear, slender; viscidium linear; stigmas oblong, ca. 2 mm. Fl. Jul–Aug.

Forests, forest margins, thickets; 900–2000 m. S Sichuan, C and S Yunnan [Laos, Myanmar, Thailand, Vietnam].


橙黄玉凤花 cheng huang yu feng hua

Smithanthera rhodocheila (Hance) Szlachetko & Margońska.

Plants 8–35 cm tall. Tubers oblong-cylindric, 2–4 × 1–2 cm, fleshy. Stem erect, terete, stout, with 4–6 leaves below middle and 1–3 bractlike leaflets above leaves. Leaf blade linear-lanceolate to suboblong, 10–15 × 1.5–2 cm, base amplexicaul, apex acuminate. Raceme loosely 2–10-flowered, 3–8 cm; floral bracts ovate-lanceolate, 1.5–1.7 cm, shorter than ovary, apex acuminate; ovary twisted, terete, including pedicel 2–3 cm. Flowers with green sepals and petals and orange-yellow to red lip. Dorsal sepal forming a hood with petals, erect, suborbicular, concave, ca. 9 × 8 mm, 3-veined, apex obtuse; lateral sepals reflexed, oblong, 9–10 × ca. 5 mm, 5-veined, apex obtuse. Petals spatulate-linear, ca. 8 × 2 mm, 1-veined, apex obtuse; lip spreading, ovate in outline, 1.8–2 × ca. 1.5 cm, 4-lobed, with short claw at base, spurred; lateral lobes spreading, oblong, ca. 7 × 5 mm, apex obtuse; mid-lobe bilobed, lobules nearly sub-ovate, ca. 4 × 3 mm, apex obliquely truncate; spur pendulous, dull yellow, cylindric, 2–3 cm × ca. 1 mm, apex often upcurved; rostellum deltoïd, large, with elongated arms; stigmas clavate. Capsule fusiform, ca. 1.5 cm, apex beaked. Fl. Jul–Aug, fr. Oct–Nov. 2n = 38, 42.

Shaded places or soil-covered rocks in forests or along valleys; 300–1500 m. Fujian, Guangdong, Guangxi, Hainan, Hunan, Jiangxi [Cambodia, Laos, Malaysia, Philippines, Thailand, Vietnam].


南方玉凤花 nan fang yu feng hua

Thelymitra malintana Blanco, Fl. Filip. 642. 1837; Habenaria dentata (Swartz) Schlechter f. ecalcarata (King & Pantling) Tuyama; H. dentata subsp. ecalcarata (King & Pantling) Panigrahi & Murti; H. dentata var. ecalcarata (King & Pantling) Handel-Mazzetti; H. geniculata D. Don var. ecalcarata King & Pantling; Kraenzlinorchis malintana (Blanco) Szlachetko.

Plants 40–55 cm tall. Tubers ellipsoid, 2–4 × 1.5–2.5 cm, fleshy. Stem erect, terete, stout, with 3 or 4 leaves and 5 or 6 bractlike leaflets. Leaf blade oblong or oblong-lanceolate, 6–13 × 1.5–4.5 cm, base amplexicaul, apex acute or acuminate. Raceme densely more than 10-flowered; floral bracts narrowly lanceolate, ca. 2 cm, margin ciliate; ovary twisted, cylindric-fusiform, including pedicel 2–2.5 cm. Flowers white, ca. 1.5 cm in diam. Sepals suborbicular, oblong-lanceolate to ovate-lanceolate, 11–13 × 3–5 mm, 3-veined, margin finely ciliate, apex acute; lateral sepals spreading, slightly oblique. Petals narrowly oblong-lanceolate, 7–8 × ca. 2 mm, 1- or rarely 3-veined, unlobed, margin finely ciliate, apex acuminate; lip ligulate-lanceolate, 11–12 mm, margin finely ciliate, usually unlobed, with very small lateral lobes on both basal sides, sparsely or rarely with a short spur 2–8 mm. Fl. Oct–Nov. 2n = 38, 42, 84, 168.

Forests, grasslands; 500–1300 m. S Guangxi, Hainan, SW Si-


Habenaria geniculata D. Don var. yunnanensis (Finet) Finet; *H. miersiana* Champion ex Bentham var. *yunnanensis* Finet; *H. poyentinensis* Kraenzlin; *H. tienensis* Tang & F. T. Wang; *Plantaginorchis finetiana* (Schlechter) Szlachetko.

Plants 9–25 cm tall. Tubers oblong, 1.5–2 cm × 8–10 mm, fleshy. Stem erect, glabrous, below middle with 2 or 3 leaves, with 1–4 bractlike leaves above. Leaf blade cordate or ovate, 2.5–5 × 1.8–3.5 cm, with white margin when dried, apex acute. Raceme 2–8-flowered, 3–5 cm; floral bracts lanceolate, ca. 2 cm, nearly as long as ovary, apex acuminate; ovary twisted, terete, including pedicel 1.8–2 cm. Flowers white, sometimes second. Sepal and petal margins ciliate; dorsal sepal forming a hood with petals, erect, ovate or elliptic, concave, ca. 8 × 5 mm, 5-veined, apex acute; lateral sepals reflexed, obliquely oval, 9–10 × ca. 5 mm, 5-veined, apex acute. Petals linear, subfalcate, ca. 6 × 2 mm, 1-veined, unlobed, apex obtuse; lip broadly obovate, ca. 12 × 10 mm, 3-lobed; lateral lobes rhombic, ca. 4 mm wide, margins serrate; mid-lobe ligulate, ca. 4 × 2 mm, slightly longer than lateral lobes, apex subobtuse; spur pendulous, cylindrical, 17–20 mm, slightly shorter than or nearly as long as ovary, apex slightly dilated, obtuse, slightly curved; stigmas oblong. Fl. Aug–Oct. 2n = 64*

Forests, grasslands; 2000–3500 m. W Sichuan, C and NW Yunnan.


Habenaria dilatata (Pursh) Hooker subsp. lucida (Wallich ex Lindley) S. S. Ying; *H. longiracemosa* Fukuyama; *H. recurva* Rolfe ex Downie var. *erectiflora* Tang & F. T. Wang; *Habenella lucida* (Wallich ex Lindley) Szlachetko & Kras-Lapinska; *Hetacea taiwaniana* S. S. Ying; *Peristylus longiracemosus* (Fukuyama) K. Y. Lang; *Platantheroides lucida* (Wallich ex Lindley) Szlachetko; *Rhomboda taiwaniana* (S. S. Ying) Ormerod.

Plants 40–61 cm tall. Tubers oblong or ellipsoid, 3–5 × 1–3 cm, fleshy. Stem erect, terete, slender, with 4–6 ± clustered leaves and 3–6 bractlike leaflets. Leaf blade obovate, subspatulate, or oblong-lanceolate, 8–18 × 2.5–4.5 cm, base contracted into amplexicaul sheath, apex acute or acuminate. Raceme 25–43-flowered, 15–23 cm; floral bracts lanceolate to ovate-lanceolate, 8–10 × 3–4 mm, shorter than ovary, apex acuminate; ovary twisted, cylindrical, including pedicel 16–18 mm. Sepals green, 3-veined; dorsal sepal forming a hood with petals, ovate, concave, 3.5–4 × 2.5–3 mm, apex obtuse; lateral sepals reflexed, obliquely ovate or ovate-oblong, 4–4.5 × ca. 2.5 mm, apex obtuse. Petals yellow, narrowly ovate-oblong, 3.5–5 × ca. 1.5 mm, 2-veined, apex obtuse; lip yellow, ca. 5 mm, thickly textured, 3-lobed from base; lobes narrowly oblong; lateral lobes reflexed, 3.5–4.5 × 1–1.5 mm, apex obtuse; mid-lobe suberect, 3.5–4.5 × 1–1.5 mm, apex adnate to tip of hood formed by dorsal sepal and petals; spur cylindrical, ca. 21 × 1 mm, slender; connective narrow; pollinia ovoid; viscidia lanceolate, ca. 1.2 mm. Fl. Jul–Sep. 2n = 42.

Forests; 400–1200 m. Guangdong, Hainan, Taiwan, S Yunnan [Cambodia, E India, Laos, Myanmar, Thailand, Vietnam].


Habenaria crassilabra Kraenzlin.

Plants 35–50 cm tall. Tubers ellipsoid, 2.5–3 × 1.2–2 cm, fleshy. Stem erect, terete, with 4 or 5–7 somewhat clustered leaves below and 3 to many bractlike leaves above. Leaf blade elliptic, elliptic-lanceolate, lanceolate, or oblong, 5–10 × 1.8–4 cm, thinly textured, base contracted into amplexicaul sheath, apex acute. Raceme loosely 14–30-flowered, 10–15 cm; floral bracts ovate-lanceolate, 1.5–2 × 0.3–0.4 cm, longer than flowers, apex acuminate; ovary twisted, slightly arching, cylindrical, 1.1–1.2 cm. Flowers spreading horizontally, yellowish green. Sepals green, 3-veined; dorsal sepal broadly ovate, concave, 3–4 ×
2.8–3 mm, apex obtuse; lateral sepals spreading, obliquely ovate, concave, 3.4 × 2.5–2.8 mm, apex obtuse. Petals forming a hood with dorsal sepal, erect, yellow, obliquely ovate, 2.8–3.5 × ca. 2 mm, 3-veined, apex obtuse or emarginate; lip yellowish green, thickly textured, ca. 4 mm, 3-lobed from base; lateral lobes pendulous, narrowly oblong, ca. 3 × 1 mm, apex obtuse, reflexed; mid-lobe suberect, narrowly ovate-lanceolate, ca. 3 × 2 mm, apex adnate to tip of hood formed by dorsal sepal and petals; spur pendulous, slightly curved, cylindric-clavate, 3–6 mm, shorter than ovary, conspicuously dilated toward apex; connective narrow; pollinia ovoid; viscidia linear-oblong, ca. 0.8 mm. Fl. Jul–Sep.

Grassy slopes; 1300–2000 m. SW Guizhou, N Yunnan [Myanmar].


岩坡玉凤花 yan po yu feng hua

Habenaria minor Fukuyama & Masamune; H. rupestris T. P. Lin & T. W. Hu.

Plants 15–40 cm tall. Tubers oblong, 2–4 × 1–1.5 cm, fleshy. Stem erect, terete, with 5–7 tufted leaves at base and 2 bractlike leaves above. Leaf blade narrowly elliptic or broadly oblanceolate, 8–10 × 1.8–2 cm, base contracted into amplexicaul sheath, apex acute. Raceme densely many flowered, 8–10 cm; floral bracts ovate-lanceolate, 8–12 × ca. 3 mm, basal ones nearly as long as ovary; ovary twisted, cylindric-fusiform, including pedicel 8–12 mm. Flowers greenish. Dorsal sepal forming a hood with petals, erect, broadly ovate, concave, 5–6 × 3.8–4 mm, 3-veined, apex obtuse; lateral sepals reflexed, obliquely ovate, 5–6 × 2.2–3 mm, 3-veined, apex acute. Petals narrowly falcate-lanceolate, 5–6 × ca. 2 mm, 1-veined, apex obtuse; lip spurred, deeply 3-lobed above base; lateral lobes spreading, almost at right angles to mid-lobe, filiform, 7–15 mm; mid-lobe linear, 7–9 mm, apex obtuse; spur pendulous, slightly curved, cylindric, 11–20 mm, longer than ovary, apex obtuse; connective rather broad; stigmas clavate. Fl. Oct. 2n = 42.

Rocky slopes, sparse forests; below 700 m. C and S Taiwan [S Japan].

47. Habenaria viridiflora (Rottler ex Swartz) R. Brown, Prodr. 312. 1810.

緑花玉凤花 lü huá yu feng hua


Plants 13–20 cm tall. Tubers oblong, 1.5–2 × 0.8–1 cm, fleshy. Stem erect, slender, rigid, glabrous, with 4 or 5 leaves, with 4 or 5 bractlike leaves above. Leaf blade linear, 5–10 × 0.4–0.6 cm, base amplexicaul, apex acuminate or acute. Raceme several to more than 10-flowered, 2–4 cm, glabrous; floral bracts ovate-lanceolate, ca. 4 mm, much shorter than ovary, apex long acuminate; ovary twisted, terete, slender, including pedicel ca. 1 cm. Flowers yellowish green, small, glabrous. Dorsal sepal forming a hood with petals, ovate, concave, ca. 2 × 1.3 mm, 3-veined, apex obtuse; lateral sepals reflexed, obliquely ovate-oblong, ca. 2.8 × 1.3 mm, 3-veined, apex obtuse. Petals obliquely ovate, ca. 2 × 1.1 mm, 1-veined, apex acute; lip ca. 3.2 mm, fleshy, near base deeply 3-lobed; lobes linear, apex obtuse; lateral lobes perpendicular to mid-lobe, often ca. 2 mm; mid-lobe ca. 3 mm; spur pendulous, cylindric, to 1.6 cm, much longer than ovary, slender; pollinia obovoid; caudicles short; stigmas clavate. Fl. Jun. 2n = 42, 44, 84.


蓮座玉凤花 lián zuò yu feng hua

Plants 28–33 cm tall. Tubers cylindric-oblang, ca. 2.5 cm × 8 mm, fleshy. Stem erect, terete, stout, ca. 3 mm in diam., with 1 or 2 tubular sheaths at base, with (4–)6–10 leaves ± in a rosette and many bractlike leaves above. Leaf blade linear-lanceolate, 7–9 × 0.8–1.1 cm, base contracted into amplexicaul sheath, apex acute or acuminate. Raceme 10–25-flowered, 6–17 cm; floral bracts lanceolate, basal ones nearly as long as ovary, apex acuminate; ovary twisted, terete, including pedicel 8–12 mm. Flowers yellowish green or white. Dorsal sepal forming a hood with petals, erect, broadly ovate, concave, ca. 5 × 2.9 mm, 3-veined, apex obtuse; lateral sepals reflexed, narrowly ovate, ca. 6 × 2.4 mm, 2-veined, apex subobtuse. Petals obliquely ovate-ligulate, falcate, ca. 4.5 × 1.2 mm, 1-veined, apex acute; lip deeply 3-lobed from base; lateral lobes spreading at right angles to mid-lobe, filiform, ca. 14 mm; mid-lobe linear, ca. 7 mm, wider than lateral lobes; spur pendulous, cylindric-clavate, ca. 14 mm, longer than ovary, slender, apical half ca. 1.4 mm in diam., slightly thickened toward end, apex acute or obtuse; connective wide; stigmas clavate. Fl. Oct.

Forests, along rivers; 700–1600 m. S Guangxi, S Yunnan.


丛叶玉凤花 cong ye yu feng hua

Plants 24–40 cm tall. Tubers oblong, 3–4 × 1–1.5 cm, fleshy. Stem erect, terete, stout, glabrous, with 10–13 clustered leaves at base and 5–13 bractlike leaves above. Leaf blade linear to linear-lanceolate, 7–13 × 0.8–1.5 cm, base contracted, apex acuminate or acute. Raceme many flowered, 11–21 cm; floral bracts lanceolate to ovate-lanceolate, 13–17 mm, apex long acuminate; ovary twisted, cylindric-fusiform, including pedicel 13–15 mm. Flowers fragrant, white. Dorsal sepal forming a hood with petals, erect, elliptic, concave, ca. 5 × 3–3.5 mm, 3-veined, apex obtuse; lateral sepals reflexed, obliquely elliptic, ca. 6 × 2.5–3 mm, 3-veined, apex obtuse. Petals linear, slightly oblique, ca. 5 × 1 mm, 1-veined, apex acute; lip deeply 3-lobed from base; lobes linear, base ca. 0.5 mm wide; lateral lobes spreading nearly at right angles to mid-lobe, 10–11 mm; mid-lobe 7–8 mm, apex obtuse; spur pendulous, slightly curved, cylindric-clavate, ca. 17 mm, longer than ovary, thickened toward end; pollinia obovoid; caudicles slender; viscidia orbicular, small; stigmas clavate. Fl. Sep–Oct.

Broad-leaved forests; 600–1200 m. S Guangxi (Dongxing), S Yunnan [Cambodia, Laos, N Vietnam].

褐黄玉凤花  he huang yu feng hua

Plants 21–40 cm tall. Tubers oblong, 1–2 cm × 5–10 mm, fleshy. Stem erect, terete, glabrous, with 3–5 leaves below middle, with 3–10 bractlike leaves above. Leaf blade oblong-lanceolate, 4–8 × 0.6–1.8 cm, base amplexicaul, apex acute. Raceme densely many flowered, ca. 6 cm; floral bracts lanceolate, ca. as long as or longer than flower, apex acuminate; ovary twisted, cylindric-fusiform, including pedicel 8–10 mm. Flowers yellow or yellowish brown. Dorsal sepal erect, narrowly ovate, concave, ca. 6 × 3.5–4 mm, 3-veined, apex obtuse; lateral sepals obliquely oblong-lanceolate, ca. 9 × 3 mm, 3-veined, apex obtuse. Petals forming a hood with dorsal sepal, falcate-lanceolate, ca. 8 × 2.5 mm, oblique, 2-veined, apex acute; lip yellow, relatively long, deeply 3-lobed from base, lobes linear; spur pendulous, straight, cylindric, 3–5 mm, apex obtuse; stigmas arching, cylindric. Fl. Aug–Sep.

Forests; 900–1000 m. SW Guangxi, S Yunnan [Myanmar].

51. **Habenaria marginata** Colebrooke in Hooker, Exot. Fl. 2: ad t. 136. 1824.

滇南玉凤花  dian nan yu feng hua

*Platanthera marginata* (Colebrooke) Lindley.

Plants 8–37 cm tall. Tubers ellipsoid or narrowly ellipsoid, 2–4 × 1–2.5 cm, fleshy. Stem terete, glabrous, with 1 or 2 tubular sheaths at base, 3–5 leaves below middle, and 3–5 bractlike leaves above. Leaf blade narrowly oblong or oblong-lanceolate, 4–9 × 1–2 cm, base contracted into amplexicaul sheath, margin yellow when dried, apex acuminate or subobtuse. Raceme 3–15-flowered, 2.5–10 cm; floral bracts lanceolate, ca. 8 × 2.5 mm, oblique, 2-veined, apex acuminate; lip ca. 1 cm, deeply 3-lobed from base; lobes similar, linear; mid-lobe slightly longer and wider than lateral lobes; spur pendulous, straight, cylindric, 3–5 mm, apex obtuse; stigmas arching, cylindric. Fl. Aug–Sep.

Forests; 500–1200 m. S Yunnan [Bhutan, India, Kashmir, Myanmar, Nepal, Thailand].

52. **Habenaria leptoloba** Bentham, Fl. Hongk. 362. 1861.

细裂玉凤花  xi lie yu feng hua

Plants 15–31 cm tall. Tubers oblong, ca. 2 cm × 8 mm, fleshy. Stem erect, terete, slender, near base with 3–6 leaves, with 2–5 bractlike leaves above. Leaf blade lanceolate or linear, 6–15 × 1–1.8 cm, base contracted into amplexicaul sheath, apex acuminate or acute. Raceme 8–19-flowered, 8–14 cm; floral bracts lanceolate, 4–12 mm, longer than ovary, apex acuminate; ovary twisted, cylindric-fusiform, glabrous, including pedicel 7–8 mm. Flowers yellowish greenish; sepals greenish. Dorsal sepal forming a hood with petals, broadly ovate, concave, ca. 3 × 2.8 mm, 1-veined, apex obtuse; lateral sepals spreading or reflexed, obliquely ovate-lanceolate, ca. 4.5 × 2 mm, 1-veined, apex obtuse. Petals erect, whitish green, obliquely ovate, concave, ca. 3.8 × 2 mm, 1-veined, apex obtuse; lip yellow, relatively long, deeply 3-lobed from base, lobes linear; spur pendulous or slightly curved, cylindric, 8–11 mm, longer than ovary, slender, slightly thickened near end, apex obtuse. Fl. Aug–Nov.

Humid places in forests or grasslands. Hong Kong.


细距玉凤花  xi ju yu feng hua

Plants 40–45 cm tall. Stem terete, with 3 tubular sheaths at base, 3 or 4 leaves near base, and 6–8 bractlike leaves above. Leaf blade narrowly oblong, narrowly elliptic, or narrowly spatulate, 9–15 × 2–2.5 cm, papery, base attenuate into amplexicaul sheath, apex acuminate or acute. Raceme loosely 15–30-flowered, 10–18 cm; floral bracts lanceolate, much shorter than ovary, apex aristate; ovary twisted, cylindric-fusiform, glabrous, including pedicel ca. 15 mm. Flowers pinkish white. Dorsal sepal forming a hood with petals, erect, oblong-ovate, concave, ca. 4 × 2.5 mm, 3-veined, apex obtuse; lateral sepals reflexed,
oblique, narrowly ovate, ca. 4.5 × 2 mm, 2-veined, apex obtuse. Petals obliquely oblong-ovate, ca. 4 × 1.7 mm, with 1 vein, apex obtuse; lip deeply 3-lobed above base; lateral lobes divergent, pendulous, filiform, 9–10 mm; mid-lobe narrowly ligulate, 4–5 × ca. 1 mm; spur pendulous, curved, ca. 21 mm, much longer than ovary, slender, slightly dilated toward end; connective very narrow; pollinia inversely pear-shaped; caudicles long; viscidia ovate-elliptic. Fl. Oct.

- Forests; ca. 1200 m. SW Yunnan.


密花玉凤花 mi hua yu feng hua

Plants to 50 cm tall. Tubers oblong, 4–5 × 2–2.5 cm, fleshy. Stem erect, terete, slender, glabrous, with 6 leaves below middle and 11 sparse bractlike leaves above. Leaf blade elliptic to narrowly elliptic, 8–18 × 3–6.5 cm, base contracted into amplexicaul sheath, apex acuminate or acute. Raceme densely many flowered, 9.5–13 cm, glabrous; floral bracts lanceolate, 7–15 mm, slightly shorter than or nearly as long as ovary, apex long acuminate. Flowers greenish, small, glabrous. Dorsal sepal forming a concave hood with petals, ovate, ca. 4 × 3 mm, 3-veined, apex acute; lateral sepals reflexed, obliquely oblong-lanceolate, ca. 4.5 × 2 mm, 3-veined, apex subobtuse. Petals lanceolate, concave, ca. 4 × 1.7 mm, with 1 vein, attenuate toward apex, apex subobtuse; lip 3-lobed from base; lobes linear; lateral lobes slightly curved, ca. 7 mm; mid-lobe erect, ca. 5 mm; spur pendulous, curved, ca. 17 mm, much longer than ovary, slender; stigmas suboblong, small. Fl. Sep. 2n = 42.

Forest margins, forests; 1100–1200 m. S Yunnan [Bhutan, India, Myanmar, Nepal, Thailand].