

140. FLICKINGERIA A. D. Hawkes, Orchid Weekly 2: 451. 1961.

金石斛属 jin shi hu shu

Chen Xinqi (陈心启 Chen Sing-chi); Jeffrey J. Wood

*Desmotrichum* Blume, Bijdr. 329. 1825, not Kützing (1845, nom. cons.); *Ephemerantha* P. F. Hunt & Summerhayes, nom. illeg. superfl.

Herbs, epiphytic. Basal rhizome branching, creeping or prostrate; roots smooth. Aerial shoots (sympodia) clambering, ascending or pendulous, terminating in a 1-leaved pseudobulb consisting of 1 internode, erect and bushy or drooping and laxly branched, new branches arising at base of pseudobulb, sometimes also from other nodes along erect stems also terminated by a pseudobulb; these aerial sympodia produce progressively smaller units distally, remaining dependent on basal roots. Pseudobulbs usually ± laterally compressed, clavate or fusiform. Leaves apical, narrowly to oblong-elliptic, leathery, base slightly contracted, subsessile, not sheathing. Inflorescence producing solitary flowers each on 1 or more short, subterminal, tufted peduncles, borne in front of or behind leaf base, or both, gregariously blooming in response to a stimulus. Flowers fragile, ephemeral, lasting less than a day, thin and membranous. Sepals and petals acute. Mentum conspicuous, deflexed, conic. Petals narrower than sepals; lip 3-lobed or entire, with a distinct hypochile (including lateral lobes), mesochile, and epichile (blade or mid-lobe), 2- or 3-keeled; lateral lobes erect; mid-lobe variable in shape, straight, curved, or very undulate-pleated and transversely bilobulate. Column short, with a long foot; pollinia 4 in 2 pairs, naked, i.e., without a stipe or caudicle, subglobose.

Between 65 and 70 species: S and SE Asia, Australia, Pacific islands; nine species (five endemic) in China.

See the treatment by Seidenfaden (Orchid Genera in Thailand IX. *Flickingeria* Hawkes & *Epigeneium* Gagnep. Dansk Bot. Ark. 34(1): 1–104. 1980).

- 1a. Lip rhombic-ovoid, entire; disk with a fleshy basal appendage ca. 2.3 × 2.3 mm; column with toothed stielidia ..... 1. *F. shihfuana*
- 1b. Lip 3-lobed; disk and column without above combination of characters.
  - 2a. Terminal pseudobulb comprising 2 or 3 internodes; mid-lobe of lip very plicate, deeply fimbriate-lacerate, divided into many fine segments ..... 2. *F. comata*
  - 2b. Terminal pseudobulb comprising 1 internode; mid-lobe not as above.
    - 3a. Inflorescence only emerging from top of pseudobulb just below leaf (abaxial); leaves 1–1.2 cm wide ... 3. *F. angustifolia*
    - 3b. Inflorescence appearing only in axil of foliage leaf (adaxial), or simultaneously adaxial and abaxial.
      - 4a. Inflorescences borne simultaneously adaxially and abaxially; leaves 1.5–3.6 cm wide, minutely retuse, arista absent or indistinct; lateral lobes of lip red spotted, mid-lobe white, turning pale cream-colored when old; proximal part of keels deep purple, distal wavy part with deep purple edges and spots; pseudobulbs ca. 4 × as long as broad ..... 4. *F. albopurpurea*
      - 4b. Inflorescence adaxial, otherwise without above combination of characters.
        - 5a. Mentum at an acute angle to ovary, narrowly conic; sepals and petals milky yellow, spotted with purplish red ..... 5. *F. fimbriata*
        - 5b. Mentum perpendicular or at an obtuse angle to ovary; sepals and petals variously colored.
          - 6a. Lip 3-keeled, median narrow, outer expanded and undulate distally; flowers pale yellow, unspotted ..... 6. *F. tricarinata*
          - 6b. Lip 2-keeled; flowers with or without spots.
            - 7a. Sepals and petals lemon-yellow to deep yellow, unspotted; lip red ..... 7. *F. calocephala*
            - 7b. Sepals and petals pure white or white, densely spotted purple-red; lip pure white or white with yellow keels.
              - 8a. Flowers pure white ..... 8. *F. concolor*
              - 8b. Flowers white, densely spotted purple-red, keels yellow, purple-red below ..... 9. *F. bicolor*

1. *Flickingeria shihfuana* T. P. Lin & Kuo Huang, Taiwania 50: 292. 2005.

士富金石斛 shi fu jin shi hu

Plants suberect to pendulous. Stems up to 30 cm, slender, tufted, frequently branching, internodes terete, clavate, or cylindrical, 2–3 cm × 2–3 mm, terminal internode enlarged into a pseudobulb. Pseudobulbs greenish, lustrous, flattened, elongate fusiform, ca. 2.8 cm × 3–3.5 mm, initially covered by sheaths. Leaves articulate, oblong to ovate-oblong, ca. 4 × 1.1–1.6 cm, leathery, rigid, acute. Inflorescence abaxial or adaxial, 1 or 2 flowers open at a time, subtended by bracts; floral bracts scari-

ous, ca. 3 mm, acute. Flowers ca. 1 cm wide, white with pink markings, sepals greenish at base, spur greenish; pedicel and ovary ca. 6 mm. Sepals oblong, ca. 5 × 2.5 mm, margins reflexed, acute. Petals slender, ca. 5.5 × 1 mm, margins reflexed, acute; lip rhombic-ovoid, reflexed, ca. 5 × 5 mm; disk with a fleshy basal appendage ca. 2.3 × 2.3 mm, spur rounded. Column ca. 2 mm, with triangular, acutely toothed stielidia; anther cap ovoid. Fl. Jun–Oct.

• Epiphytic in montane forests; ca. 1200 m. Taiwan.

2. *Flickingeria comata* (Blume) A. D. Hawkes, Orchid Weekly 2: 452. 1961.

金石斛 jin shi hu

*Desmotrichum comatum* Blume, Bijdr. 330. 1825; *Callista comata* (Blume) Kuntze; *Dendrobium comatum* (Blume) Lindley; *D. fimbriatolabellum* Hayata; *Desmotrichum fimbriatolabellum* (Hayata) Hayata; *Ephemerantha comata* (Blume) P. F. Hunt & Summerhayes; *E. fimbriatolabella* (Hayata) P. F. Hunt & Summerhayes; *E. tairukounia* S. S. Ying; *Flickingeria fimbriatolabellum* (Hayata) A. D. Hawkes; *F. tairukounia* (S. S. Ying) T. P. Lin.

Rhizome creeping, ca. 1.3 cm in diam., stout, internodes 3–6 mm. Pseudobulbs fusiform, ca. 6.5 × 1.7–2.3 cm. Stems ascending, pale yellow, many branched. Leaf shortly petiolate, ovate to oblong, 5–11 × 2–5 cm, leathery, apex obtuse or rounded. Inflorescence simultaneously adaxial and abaxial, very short, usually 1- or 2-flowered. Flowers thinly textured, fragile, whitish, with purple spots on sepals and petals, lip yellow; pedicel and ovary ca. 1.5 cm, slender. Dorsal sepal narrowly lanceolate, 10–15 × 3–3.5 mm, acute; lateral sepals linear-falcate, oblique, 10–15 × ca. 4.5 mm; mentum borne at an acute angle to ovary, narrowly conic, ca. 4 mm. Petals linear, 10–15 × 1–1.5 mm, acute; lip obtriangular, 10–15 mm, base cuneate, 3-lobed; lateral lobes subovate, 3.5–4 × 1–1.5 mm, apical margin ± lacerate; mid-lobe very plicate, 10–12 mm, margin deeply fimbriate-lacerate, divided into many fine segments. Column ca. 4 mm, stout, foot ca. 4 mm. Fl. Jul.  $2n = 38$ .

Epiphytic on tree trunks along streams and in mixed forests, cliffs; 100–1000 m. E and S Taiwan [Indonesia, Malaysia, New Guinea, Philippines; Australia, Pacific islands].

*Flickingeria tairukounia* appears to be a peloric form of *F. comata*.

**3. *Flickingeria angustifolia*** (Blume) A. D. Hawkes, Orchid Weekly 2: 452. 1961.

狭叶金石斛 xia ye jin shi hu

*Desmotrichum angustifolium* Blume, Bijdr. 330. 1825; *Callista angustifolia* (Blume) Kuntze; *Dendrobium angustifolium* (Blume) Lindley; *Ephemerantha angustifolia* (Blume) P. F. Hunt & Summerhayes.

Rhizome creeping, 3–4 mm in diam., internodes 5–10 mm. Pseudobulbs golden yellow, slightly compressed, fusiform, 3–3.5 cm × 4–7 mm. Stems pendulous, golden yellow, slender, many branched. Leaf blade narrowly lanceolate, 7–10 × 0.8–1.2 cm, leathery, apex acute and slightly bilobed. Inflorescence abaxial, often 1-flowered, base with 2 or 3 tufted scalelike sheaths. Flowers only lasting half a day, thinly textured; sepals and petals pale yellow with brownish purple stripes, lateral lobes of lip purple with whitish margins, mid-lobe orange; pedicel and ovary ca. 7 mm. Dorsal sepal ovate-elliptic, ca. 5.5 × 3 mm, obtuse; lateral sepals obliquely ovate-triangular, broader and larger than dorsal sepal, base very oblique and broad, apex acute; mentum borne at an acute angle to ovary, ca. 7 mm. Petals ovate-lanceolate, ca. 5 × 2 mm, acute; lip 10–12 × 4–5 mm, with a long claw at base, 3-lobed; lateral lobes erect, apex rounded; mid-lobe subobovate, ca. 5 mm, entire, deeply 2-lobed, apiculate in sinus; lobules subobovate-oblong; disk with 2 lamellae extending from base to base of mid-lobe. Column ca.

3 mm, stout. Fl. Jun–Sep.

Epiphytic on tree trunks in forests; ca. 1000 m. SW Guangxi, Hainan [Indonesia, Malaysia (Peninsular), Thailand, Vietnam].

**4. *Flickingeria alboburpurea*** Seidenfaden, Dansk Bot. Ark. 34(1): 48. 1980.

滇金石斛 dian jin shi hu

Rhizome creeping, 4–8 mm in diam., internodes 3–7 mm. Stems usually pendulous, yellow or yellowish brown, many branched. Pseudobulbs golden yellow, slightly compressed, fusiform, 3–8 cm × 7–20 mm. Leaf blade oblong or oblong-lanceolate, 9–19.5 × 1.5–3.6 cm, leathery, base contracted into a very short petiole, apex obtuse and minutely retuse, arista in sinus absent or indistinct. Inflorescence simultaneously adaxial and abaxial, 1- or 2-flowered; peduncle very short, with several scalelike sheaths. Flowers lasting half a day, thinly textured; pedicel and ovary pale yellow, sepals and petals white, mentum yellowish, lip and column densely spotted purple-red, mid-lobe white, turning pale cream-colored when old, proximal part of keels deep purple, distal wavy part with deep purple edges and spots; pedicel and ovary ca. 5 mm. Dorsal sepal oblong, ca. 10 × 3.5 mm, acute; lateral sepals obliquely ovate-lanceolate, ca. 10 × 3.5 mm, base oblique and relatively wide, apex acute; mentum perpendicular to ovary, ca. 5 mm, obtuse. Petals narrowly oblong, ca. 9 × 2.2 mm, acute; lip ca. 12 mm, 3-lobed; lateral lobes erect, subovate, rounded, ca. 7 mm apart between apices; mid-lobe obovate-flabellate in outline, ca. 5 × 7 mm, 2-lobed, basal margin lacerate-cripsed; disk with 2 lamellae extending from base to narrowed base of mid-lobe, crisped-undulate in apical half. Column ca. 3 mm, stout, foot ca. 5 mm. Fl. Jun–Jul.

Epiphytic on tree trunks in open forests, lithophytic on rocks in forests; 800–1200 m. S Yunnan [Laos, Thailand, Vietnam].

**5. *Flickingeria fimbriata*** (Blume) A. D. Hawkes, Orchid Weekly 2: 454. 1961.

流苏金石斛 liu su jin shi hu

*Desmotrichum fimbriatum* Blume, Bijdr. 329. 1825; *Dendrobium fimbriatum* (Blume) Lindley (1830), not Hooker (1823); *D. plicatile* Lindley; *Ephemerantha fimbriata* (Blume) P. F. Hunt & Summerhayes.

Rhizome creeping, 5–7 mm in diam., internodes 7–8 mm. Stems ascending or pendulous, many branched. Pseudobulbs golden yellow, compressed fusiform, 3.5–6.5 × 1–2.3 cm. Leaf blade oblong-lanceolate or narrowly elliptic, 10–20 × 3–5 cm, leathery, slightly obtuse; petiole very short. Inflorescence usually 1–3-flowered. Flowers thinly textured; sepals and petals milky yellow, tinged brownish or with purplish red spots, lip whitish, with purple-red spots on lateral lobes and with yellowish white central lamellae; pedicel and ovary ca. 5 mm. Dorsal sepal ovate-lanceolate, ca. 9 × 2.5 mm, acuminate; lateral sepals obliquely ovate-lanceolate, similar in size to dorsal sepal, base oblique and relatively wide, apex acuminate; mentum borne at an acute angle to ovary, narrowly conic, ca. 7 mm. Petals lanceolate, ca. 9 × 2 mm, subacute; lip ca. 1.5 cm, base narrowed and cuneate, 3-lobed; lateral lobes erect, subobovate,

entire; mid-lobe flabellate, ca.  $8 \times 7$ –8 mm, margin undulate-cripsed, apex subtruncate; disk with 2 or 3 lamellae extending from base to apex of mid-lobe; lamellae crisped in apical half. Column ca. 4 mm, stout, foot ca. 7 mm. Fl. Apr–Jun.

Epiphytic on tree trunks in forests, lithophytic on rocks in forests; 700–1700 m. SW Guangxi, Hainan, SE Yunnan [India (Andaman Islands, Nicobar Islands), Indonesia, Malaysia, Philippines, Thailand, Vietnam].

**6. *Flickingeria tricarinata*** Z. H. Tsi & S. C. Chen, Acta Phytotax. Sin. 33: 201. 1995.

三脊金石斛 san ji jin shi hu

*Flickingeria tricarinata* var. *viridilamella* Z. H. Tsi & S. C. Chen.

Rhizome creeping, 4–6 mm in diam., internodes 5–10 mm. Stems pendulous or nearly ascending, golden yellow, often branching. Pseudobulbs golden yellow, fusiform, slightly compressed, 4.5–6.5 cm  $\times$  8–15 mm. Leaf blade narrowly ovate-lanceolate, 11.5–12  $\times$  ca. 2.5 cm, leathery, apex acuminate and slightly emarginate. Inflorescence usually 1-flowered; peduncle ca. 4 mm. Flowers only lasting half a day, pale yellow, thinly textured; pedicel and ovary ca. 6 mm. Dorsal sepal  $\pm$  reflexed, ovate-oblong, ca. 14  $\times$  5 mm, acute; lateral sepals obliquely ovate-triangular, similar in size to dorsal sepal, base oblique and relatively wide; mentum perpendicular or at an obtuse angle to ovary, ca. 6 mm, broadly obtuse. Petals ascending, oblong, ca. 10  $\times$  3.2 mm, acute; lip obovate in outline, ca. 12 mm, 3-lobed; lateral lobes suberect, ovate-triangular, ca. 5  $\times$  4 mm, rounded; mid-lobe somewhat transversely narrowly oblong, ca. 4  $\times$  14 mm, adaxially with small papillae, base cuneate, margin undulate, apex with lobules  $\pm$  narrowly obovate; disk with 2 longitudinal lamellae extending from base to cuneate base of mid-lobe, and 1 central keel extending to near apex of mid-lobe; lamellae taller and crisped in apical half. Column ca. 4 mm, stout; foot ca. 5 mm. Fl. Jun.

• Epiphytic on tree trunks in forests; 800–900 m. S Yunnan.

**7. *Flickingeria calocephala*** Z. H. Tsi & S. C. Chen, Acta Phytotax. Sin. 33: 203. 1995.

红头金石斛 hong tou jin shi hu

Rhizome creeping, 5–6 mm in diam., internodes 6–10 mm. Stems pendulous or ascending, golden yellow, branching. Pseudobulbs subcylindric, 4–6.3 cm  $\times$  7–9 mm. Leaf blade narrowly oblong, 8.5–12.5  $\times$  1.4–1.6 cm, leathery, acuminate. Inflorescence usually 1- or 2-flowered; peduncle ca. 3 mm. Flowers lasting only half a day, lemon-yellow, lateral lobes of lip pale tangerine, lamellae brownish red; pedicel and ovary ca. 4 mm. Dorsal sepal ovate-oblong, ca. 10.5  $\times$  3.5 mm, acute; lateral sepals obliquely ovate-triangular, similar in size to dorsal sepal, base oblique and broader, apex acute; mentum perpendicular to ovary. Petals narrowly oblong, ca. 9  $\times$  2 mm, acute; lip obovate in outline, ca. 12 mm, ca. 7 mm wide between 2 lateral lobes when flattened, base cuneate, margin 3-lobed; lateral lobes erect, obovate, rounded; mid-lobe somewhat batlike, ca. 4.5  $\times$  10 mm, margin slightly erose; disk with 2 lamellae extending from base to near base of mid-lobe; lamellae crisped undulate in apical half. Column ca. 3 mm; foot ca. 5 mm. Fl.

Jun–Jul.

• Epiphytic on tree trunks in forests; ca. 1200 m. S Yunnan.

**8. *Flickingeria concolor*** Z. H. Tsi & S. C. Chen, Acta Phytotax. Sin. 33: 204. 1995.

同色金石斛 tong se jin shi hu

Rhizome creeping, ca. 7 mm in diam., internodes ca. 6 mm. Stems pendulous or ascending, pale yellow or golden yellow, ca. 4 mm in diam., usually branching. Pseudobulbs golden yellow, narrowly fusiform, slightly compressed, 5.5–6 cm × 8–13 mm. Leaf blade narrowly elliptic-lanceolate, 11–12 × 1.4–2.2 cm, leathery, acute and slightly bilobed. Peduncle ca. 3 mm, hidden in scalelike sheaths. Flowers only lasting half a day, usually solitary, pure white, thinly textured; pedicel and ovary ca. 5 mm. Dorsal sepal ovate-lanceolate, ca. 8 × 4 mm, acute; lateral sepals similar to dorsal sepal, base broad and oblique; mentum borne at an obtuse angle to ovary, obtuse. Petals narrowly oblong, ca. 10 × 2.5 mm, acute; lip ca. 10 mm, 3-lobed; lateral lobes erect, oblong, ca. 6 × 2.5 mm, rounded; mid-lobe somewhat transversely suboblong, margin inconspicuously erose; disk with 2 longitudinal lamellae extending from base to near base of mid-lobe, and a central keel extending to mid-lobe; lamellae strongly crisped undulate in apical half. Column ca. 3 mm, stout; foot ca. 5 mm. Fl. Jun.

- Epiphytic on tree trunks in forests; ca. 1600 m. S Yunnan.

**9. *Flickingeria bicolor*** Z. H. Tsi & S. C. Chen, *Acta Phytotax. Sin.* 33: 204. 1995.

二色金石斛 er se jin shi hu

Rhizome creeping, 5–7 mm in diam., stout, internodes 3–6 mm. Stems pendulous or ascending, golden yellow, 3–7 mm in diam., usually branching. Pseudobulbs golden yellow, fusiform, slightly compressed, 3.5–5 cm × 13–17 mm. Leaf blade elliptic-lanceolate, 12.5–13.5 × 1.7–2.3 cm, leathery, apex subacute and slightly bilobed. Inflorescence 1–5-flowered; peduncle 2–4 mm, with several tufted scalelike sheaths. Flowers lasting nearly half a day, thinly textured; pedicel and ovary pale yellow, sepals, petals, and lip creamy white or white, with dense purplish red spots on basal half of dorsal sepal and throughout lateral sepals, mentum pale yellow, lamellae on disk tinged with yellowish green or purplish red, column tinged red at base and margin; pedicel and ovary ca. 5 mm. Dorsal sepal oblong, slightly concave, 12–15 × 4–5 mm, acute; lateral sepals oblong-lanceolate, similar in size to dorsal sepal, base broad and oblique; mentum nearly perpendicular to ovary, ca. 5 mm, obtuse. Petals oblong, ca. 10 × 3 mm, acute; lip obovate in outline, ca. 12 mm, base cuneate, margin 3-lobed; lateral lobes suberect, ovate-triangular, ca. 8 × 3 mm, slightly obtuse; mid-lobe somewhat batlike, 2-lobed; lobules subflabellate, erect, basal margin crisped undulate; disk with 2 lamellae extending from base to near base of mid-lobe; lamellae strongly crisped undulate in apical half. Column ca. 3 mm, stout; foot ca. 6 mm. Fl. Jun–Jul.

- Epiphytic on tree trunks in open forests; ca. 900 m. S Yunnan.

