

94. TAINIA Blume, Bijdr. 354. 1825.

带唇兰属 dai chun lan shu

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

Ania Lindley; *Ascotainia* Ridley; *Mischobulbum* Schlechter; *Mitopetalum* Blume.

Herbs, terrestrial, glabrous. Rhizome with persistent or decaying tubular scales; roots not branched, villous, with root hairs. Pseudobulb erect, rarely prostrate, with 1 or few internodes. Leaf 1 per pseudobulb, deciduous, articulate, petiolate or not, petiole not sheathing, convolute, plicate or not, glabrous; blade elliptic to (ob)ovate, base decurrent along petiole, margin straight, undulate to crenulate. Inflorescence an erect raceme arising heteranthis on a leafless shoot or lateral from base of pseudobulb, often alternating with fertile shoots; peduncle with few internodes; scales tubular; floral bracts persistent. Flowers resupinate, open simultaneously. Sepals and petals ovate, elliptic, or obovate to linear, entire; lateral sepals decurrent on column foot when present. Lip immobile, entire or 3-lobed, with or without spur, saccate; keels (2 or)3–9. Column straight, with narrow seams that continue onto column foot when present; column foot absent or inconspicuous (rarely long), flat or swollen, without spur; anther cap with 2 thecae, usually 4-locular; pollinia 8, rarely 6 in (3 or)4 pairs, subequal, hard, caudicles present, stipe and viscidium absent. Capsule ellipsoid.

About 32 species: Sri Lanka and India, north to China and Japan, south from Myanmar to New Guinea and the Pacific islands; 13 species (two endemic) in China.

The genus *Tainia* has been monographed by Turner (Orchid Monogr. 6: 43–100. 1992) and treated in a broader sense to include *Ania* and *Mischobulbum* by de Vogel in Pridgeon et al. (Gen. Orchid. 4(1): 158–161. 2005).

Tainia hualienia S. S. Ying (Coloured Ill. Indig. Orchids Taiwan 1: 321. 1977) was described from Taiwan but was not included in either Fl. Taiwan (1978) or Fl. Taiwan, ed. 2 (2000). Its original description seems to be indicative of belonging to *Oreorchis* rather than *Tainia*.

- 1a. Leaves sessile, non-plicate, with a cordate base 1. *T. cordifolia*
1b. Leaves not as above.
- 2a. Pseudobulbs swollen, globose or ovoid, usually consisting of several internodes; inflorescence lateral; lip with a \pm distinct spur; petiole usually with an articulation \pm halfway (absent in *T. viridifusca*).
- 3a. Leaves sessile, 4.5–7 \times 3–5 cm, broadly ovate, fleshy or thickly leathery, dark purple abaxially 2. *T. longiscapa*
3b. Leaves not as above.
- 4a. Lip entire or subentire (when subentire mid-lobe broadest at base), never distinctly 3-lobed, elliptic to slightly obovate in outline 3. *T. hongkongensis*
4b. Lip distinctly 3-lobed; mid-lobe distinctly narrowed toward base.
- 5a. Lip blade more than 2 \times as long as broad, keels always straight; lateral lobes ca. 1 mm wide, acuminate 4. *T. angustifolia*
5b. Lip blade less than 2 \times as long as broad.
- 6a. Lip with 3 lamellae on disk 5. *T. penangiana*
6b. Lip with 5 lamellae on disk.
- 7a. Pseudobulb obliquely ovoid to ellipsoid, usually prostrate; petiole without an articulation \pm halfway; keels on lip sometimes decreasing in height halfway between base of lip and base of lateral lobes, always \pm at base of mid-lobe, then increasing in height again; sepals and petals brownish green or purplish brown 6. *T. viridifusca*
7b. Pseudobulb \pm conic, erect; petiole with an articulation \pm halfway; keels increasing in height uninterrupted toward tip of lip; sepals and petals dull reddish yellow 7. *T. ruybarrettoii*
- 2b. Pseudobulbs thin, cylindrical, sometimes swollen toward base, usually consisting of 1 internode; inflorescence terminal; lip at most very slightly saccate; petiole with an articulation.
- 8a. Lip entire 8. *T. emeiensis*
8b. Lip 3-lobed.
- 9a. Inflorescence arising directly from a node.
- 10a. Mature plant less than ca. 15 cm high excluding inflorescence; leaves mottled and tessellate 9. *T. laxiflora*
10b. Mature plant usually well over 25 cm high, rarely smaller; leaves uniformly colored 10. *T. dunnii*
- 9b. Inflorescence arising at least 2 mm above a node.
- 11a. Lip with 5 lamellae on mid-lobe 11. *T. minor*
11b. Lip with 3 lamellae.
- 12a. Lip elliptic to ovate, shorter than 20 mm; column foot shorter than 3 mm 12. *T. latifolia*
12b. Lip rhombic-hastate, longer than 30 mm; column foot longer than 10 mm 13. *T. macrantha*

1. *Tainia cordifolia* J. D. Hooker, Hooker's Icon. Pl. 19: ad t. 1861. 1889.

心叶带唇兰 xin ye dai chun lan

Mischobulbum cordifolium (J. D. Hooker) Schlechter; *Tainia fauriei* Schlechter.

Pseudobulbs ca. 8 cm × 3–4 mm, petiole-like, becoming thinner toward base, often ± enclosed in 2 tubular sheaths. Leaf sessile, abaxially with grayish white stripes, adaxially dirty green with deep green blotches, ovate-cordate, 7–15 × 4–8 cm, fleshy, main veins 3, base cordate, apex acute. Inflorescence erect; peduncle to 25 cm, with 2 or 3 tubular sheaths; rachis ca. 6 cm, 3–5-flowered; floral bracts ca. 7 mm, narrowly lanceolate, acuminate. Flowers large; sepals and petals brown with purplish brown stripes, lip lateral lobes white and spotted with purplish red, mid-lobe yellow, with purple spots along margin, lamellae yellow, column with purplish red spots; pedicel and ovary 1.5–1.8 cm. Sepals similar, lanceolate, ca. 22 × 4–5 mm, 3-veined, acuminate; lateral sepals adnate to column foot forming a broad mentum. Petals lanceolate, ca. 20 × 6–7 mm, 5-veined; lip subovate, 2.5–3 cm, slightly 3-lobed; lateral lobes nearly subovate; mid-lobe reflexed, subtriangular, apex acute; disk with 3 lamellae running from base to apex of mid-lobe; lateral lamellae arcuate. Column ca. 1 cm, broadly winged; foot ca. 1.4 cm. Fl. May–Jul.

Damp places in forests along valleys; 500–1000 m. Fujian, Guangdong, Guangxi, Taiwan, SE Yunnan [Vietnam].

2. *Tainia longiscapa* (Seidenfaden ex H. Turner) J. J. Wood & A. L. Lamb, Malesian Orchid J. 2: 54. 2008.

卵叶带唇兰 luan ye dai chun lan

Mischobulbum longiscapum Seidenfaden ex H. Turner, Orchid Monogr. 6: 67. 1992; *M. ovifolium* (Z. H. Tsi & S. C. Chen) Averyanov; *Tainia ovifolia* Z. H. Tsi & S. C. Chen.

Pseudobulbs close, purplish, narrowly ovoid, ca. 4 cm, base ca. 1.5 cm in diam. Petiole ca. 3 mm; leaf blade abaxially purple, adaxially deep green, broadly ovate, 4.5–7 × 3–5 cm, somewhat fleshy or thickly leathery, base rounded, apex acute. Inflorescence erect; peduncle ca. 18 cm, 2–3 mm in diam., near middle with 1 membranous tubular sheath; rachis 4- or 5-flowered; floral bracts narrowly lanceolate, ca. 1 cm, acuminate. Flowers yellowish green; pedicel and ovary ca. 1 cm. Dorsal sepal lanceolate, ca. 12 × 2 mm, 3-veined, long acuminate; lateral sepals similar to dorsal sepal, base adnate to column foot forming a conspicuous mentum. Petals similar to sepals in shape, ca. 12 × 1.2 mm, 3- or 4-veined, acute; lip obovate, 3-lobed near middle; lateral lobes ovate-triangular, small, ca. 7 mm wide at apex, acute; mid-lobe obovate, ca. 6 mm wide, mucronate; disk with 3 lamellae, median smaller. Column ca. 4 mm; foot ca. 0.4 mm. Fl. Mar.

Rocky places in evergreen broad-leaved forests; 600–1200 m. Hainan (Changjiang), S Yunnan [Thailand, N Vietnam].

3. *Tainia hongkongensis* Rolfe, Bull. Misc. Inform. Kew 1896: 195. 1896.

香港带唇兰 xiang gang dai chun lan

Ania hongkongensis (Rolfe) Tang & F. T. Wang; *Ascotainia hongkongensis* (Rolfe) Schlechter.

Pseudobulbs ovoid, 1–2 cm in diam., sheathing when young. Petiole 13–16 cm, slender, base with 1 tubular sheath ca. 6 cm; leaf blade oblong, ca. 26 × 3–4 cm, plicate, apex acuminate. Inflorescence erect; peduncle to 50 cm, ca. 3 mm in diam., with 4 tubular sheaths below inflorescence; rachis to 15 cm, laxly several flowered; floral bracts narrowly lanceolate, 6–12 mm, membranous, long acuminate. Flowers: pedicel and ovary purplish brown, sepals and petals yellowish green with purplish brown spots and stripes, lip white with yellowish green stripes, anther cap with 2 purple cornute appendages, column white, tinged with purple; pedicel and ovary ca. 15 mm. Sepals similar, oblong-lanceolate, ca. 20 × 2.2–3.5 mm, 5-veined, acuminate; lateral sepals adnate to column base. Petals obovate-lanceolate, ca. 20 × 3 mm, 5-veined, base contracted, apex acuminate; lip obovate, ca. 11 × 6 mm, ± embracing column below middle, spurred at base, entire, mucronate; disk with 3 narrow lamellae; spur projecting beyond base of lateral sepals, sub-oblong, ca. 3 × 2.5 mm. Column ca. 7 mm, slightly dilated toward apex. Fl. Apr–May.

Wooded slopes or open places in hilly areas; 100–500 m. S Fujian, S Guangdong [Vietnam].

4. *Tainia angustifolia* (Lindley) Benth & J. D. Hooker, Gen. Pl. 3: 515. 1883.

狭叶带唇兰 xia ye dai chun lan

Ania angustifolia Lindley, Gen. Sp. Orchid. Pl. 129. 1831; *Ascotainia angustifolia* (Lindley) Schlechter; *Eulophia evrardii* Guillaumin; *Mitopetalum angustifolium* (Lindley) Blume; *Nephelaphyllum evrardii* (Guillaumin) Tang & F. T. Wang.

Pseudobulbs ovoid, to 2 cm in diam., ± covered with sheaths. Petiole 20–30 cm, slender, articulate near middle, base with 2 tubular sheaths; leaf blade oblong or narrowly elliptic, ca. 30 × 3–5.5 cm, apex shortly acuminate. Inflorescence erect; peduncle ca. 45 cm, with 3 or 4 tubular sheaths below; rachis 7–15 cm, laxly few flowered; floral bracts lanceolate, ca. 7 mm, membranous. Flowers not opening widely, yellowish green; lip whitish, tinged with dark purple, mid-lobe dark purple, apical margin white, lamellae deep purple, column whitish, upper part purplish, anther cap brownish green; pedicel and ovary ca. 1 cm. Sepals similar, oblong, 15–17 × 4.5–5 mm, 5-veined, acute; lateral sepals adnate to column base. Petals elliptic, 13–15 × 3.5–4.5 mm, 5-veined, acute; lip oblong or suboblong, 15–17 mm, 3-lobed; lateral lobes erect, embracing column, triangular-lanceolate, ca. 1 mm wide, acuminate; mid-lobe nearly obovate, ca. 4 mm wide, rounded; disk with 5 lamellae extending to mid-lobe; lamellae parallel to each other, highly raised and undulate or denticulate on mid-lobe; spur slightly flattened, ca. 4 × 3 mm, obtuse and slightly concave. Column ca. 1 cm × 5 mm, broadly winged; rostellum slightly decurved, suborbicular. Fl. Sep–Oct.

Wooded slopes; 500–1200 m. SW Guizhou, S Yunnan [Myanmar, Thailand, Vietnam].

5. *Tainia penangiana* J. D. Hooker, Fl. Brit. India 5: 820. 1890.

绿花带唇兰 *lǜ huā dài chūn lán*

Ania hookeriana (King & Pantling) Tang & F. T. Wang ex Summerhayes; *A. penangiiana* (J. D. Hooker) Summerhayes; *Ascotainia hookeriana* (King & Pantling) Ridley; *A. penangiiana* (J. D. Hooker) Ridley; *Tainia hookeriana* King & Pantling; *T. taiwaniana* S. S. Ying.

Pseudobulbs close, purplish red or dark brownish green, ovoid, to 3 cm in diam., ± covered with sheaths. Petiole 27–32 cm; leaf blade oblong, ca. 35 × 6–9 cm, apex acuminate. Peduncle to 60 cm, 4–5 mm in diam., with 3 or 4 membranous sheaths below; rachis 15–20 cm, laxly few to 10-flowered; floral bracts narrowly lanceolate, usually 6–7 mm, membranous. Flowers yellowish green with orange-red spots and stripes, lip white with reddish spots and yellow tip; pedicel and ovary ca. 15 mm. Sepals similar, oblong-lanceolate, 18–21 × 3–5 mm, 7-veined, acuminate. Petals oblong, 17–20 × 3–4 mm, 7-veined, acute; lip obovate, ca. 15 mm, adaxially ± finely papillate, 3-lobed; lateral lobes suberect, ovate-oblong, obtuse and slightly incurved; mid-lobe orbicular or ovate-triangular, acute; disk with 3 lamellae extending to mid-lobe where raised or sometimes crestlike; spur exerted beyond base of lateral sepals, 3–5 mm, obtuse. Column subcylindric, ca. 1 cm; rostellum nearly ligulate, unlobed; anther cap without appendages. Fl. Feb–Mar. $2n = 40$, 72.

Evergreen broad-leaved forests, streamsides; 700–1000 m. S and W Hainan, Taiwan [NE India, Malaysia (Peninsular), Thailand, Vietnam].

6. *Tainia viridifusca* (Hooker) Bentham & J. D. Hooker, Fl. Brit. India 5: 820. 1890.

高褶带唇兰 *gāo zhě dài chūn lán*

Calanthe viridifusca Hooker, Bot. Mag. 78: ad t. 4669. 1852; *Ania elata* (Schlechter) S. Y. Hu; *A. viridifusca* (Hooker) Tang & F. T. Wang ex Summerhayes; *Ascotainia elata* Schlechter; *A. viridifusca* (Hooker) Schlechter; *Tainia elata* (Schlechter) P. F. Hunt.

Pseudobulbs close, dark green to purple, broadly ovoid, to 4 cm in diam. Leaf blade oblong or narrowly elliptic, plicate, ca. 50 × 3 cm, with long petiole at base, apex long acuminate. Inflorescence erect; peduncle purplish in lower part, to 73 cm, ca. 4 mm in diam., with 3 or 4 sheaths; rachis laxly 9- or 10-flowered; floral bracts yellowish green, narrowly lanceolate, 1–1.5 cm, long acuminate. Flowers opening widely, brownish green or purplish brown, lip and column white, anther cap with 2 purple spots at apex; pedicel and ovary ca. 2 cm. Sepals similar, oblong, 20–22 × ca. 5 mm, acute and aristate; lateral sepals sometimes with midvein extending keel-like beyond tip abaxially, base mostly adnate to column foot. Petals similar to sepals, and smaller, acute and aristate; lip obovate, ca. 14 × 8–9 mm, 3-lobed; lateral lobes erect, ovate-oblong, obtuse; mid-lobe orbicular, base without conspicuous claw, mucronate; disk with 3–5 lamellae extending to mid-lobe and becoming 5-undulate or crestlike there; spur extending beyond 2 lateral sepals, saccate-conic, ca. 4 mm, obtuse. Column subcylindric, ca. 9 mm; rostellum broadly triangular, fleshy, obtuse. Fl. Apr–May. $2n = 40$.

Evergreen broad-leaved forests; 1500–2000 m. NE, S, and SE Yunnan [NE India, Myanmar, Thailand, Vietnam].

7. *Tainia ruybarrettoi* (S. Y. Hu & Barretto) Averyanov, Opred. Orkhid. Vetnama, 403. 1994.

南方带唇兰 *nán fāng dài chūn lán*

Ania ruybarrettoi S. Y. Hu & Barretto, Chung Chi J. 13(2): 25. 1976.

Pseudobulbs slightly spaced, dark green or purplish red, ovoid, 2.5–5.5 × 2.5–4 cm, with 2 sheaths. Petiole 15–25 cm; leaf blade dark green, lanceolate, 30–45 × 4.5–5.3 cm, acute. Inflorescence erect; peduncle 30–45 cm, with 3 reddish sheath-like bracts below; rachis 10–30 cm, glabrous, laxly 5–28-flowered; floral bracts dark purple, narrowly lanceolate, 8–13 mm. Flowers: sepals and petals dull reddish yellow, purple-veined, margin yellow, lip white, with purple stripes and spots on lateral lobes, mid-lobe white, spotted with purple, spur orange, column white, spotted with purple, anther cap creamy yellow, with deep purple spots; pedicel and ovary longer than floral bracts. Sepals and petals 3–5-veined; dorsal sepal narrowly lanceolate, 2.7–3.5 × 0.4–0.5 cm, acute; lateral sepals similar to dorsal sepal, slightly falcate. Petals obliquely oblanceolate, 2.7–3.5 × 0.4–0.5 cm, acute; lip ca. 2.2 cm, 3-lobed; lateral lobes erect, embracing column, ovate-oblong, 4–5 × ca. 3 mm, adaxially purple hairy, obtuse-rounded; mid-lobe slightly recurved, suborbicular, ca. 7 × 7 mm, base narrowed into a claw, margin undulate, apex acute; disk with 5 lamellae extending from base to mid-lobe and thickened there, median longer; spur 3–5 × ca. 2 mm. Column slightly arcuate, ca. 12 mm; rostellum triangular. Fl. Mar.

Shady and damp places in forests, beside rivers, bamboo forests; 600–900 m. E Guangxi, Hainan, Hong Kong [N Vietnam].

8. *Tainia emeiensis* (K. Y. Lang) Z. H. Tsi, Fl. Reipubl. Popul. Sin. 18: 236. 1999.

峨眉带唇兰 *é méi dài chūn lán*

Mischobulbum emeiense K. Y. Lang, Acta Phytotax. Sin. 20: 185. 1982 [“*emeiense*”].

Pseudobulbs ascending, almost narrowly cylindrical, 4.5–8 cm × ca. 4 mm, narrowed from base toward apex. Petiole 4–4.5 cm; leaf blade elliptic, 12.5–14 × 4.5–6 cm, base subrounded, apex acute. Inflorescence erect; peduncle ca. 10 cm, with 2 or 3 tubular sheaths, basal one ca. 5 cm; rachis 3-flowered; floral bracts lanceolate, ca. 1.5 cm, longer than pedicel and ovary, acuminate. Sepals similar, lanceolate, ca. 20 × 4 mm, 5-veined, long acuminate; lateral sepals adnate at base to column foot forming a broad mentum ca. 3 mm. Petals ovate-lanceolate, ca. 17 × 6 mm, 5-veined, acuminate; lip ovate-lanceolate, ca. 18 × 8 mm, entire, acuminate; disk with 3 lamellae, lateral 2 dilated and triangular near or slightly above base, median somewhat fleshy and ridgelike. Column ca. 4 mm; rostellum acute at apex. Fl. Jul.

- Wooded slopes; ca. 800 m. SW Sichuan.

Turner (Orchid Monogr. 6: 73. 1992) stated that he had seen no specimens of this taxon and wrote “The description and figure given in the original publication resemble *T[ainia]. macrantha*, but show a

smaller species with a short column and column foot.”

9. *Tainia laxiflora* Makino, Bot. Mag. (Tokyo) 23: 138. 1909.

疏花带唇兰 shu hua dai chun lan

Ascotainia laxiflora (Makino) C. D. Darlington & Wylie; *Tainia laxiflora* var. *piyananensis* (Fukuyama) Masamune; *T. minor* J. D. Hooker var. *laxiflora* (Makino) T. Hashimoto; *T. piyananensis* Fukuyama.

Pseudobulbs cylindric, 1–1.3 × 0.2–0.5 cm, scale of subterminal node ± persistent. Petiole 1–3.5 cm; leaf blade tessellate, elliptic, 6.7–11.1 × 1.3–2 cm, slightly acuminate. Inflorescence terminal, arising from base of pseudobulb; peduncle 9.5–27 cm, 1–2 mm in diam.; rachis 2.2–8.3 cm; floral bracts triangular, 3–8 mm. Flowers mostly open simultaneously, opening widely; sepals and petals pale brownish to pale brownish yellow, lip lateral lobes white, mid-lobe yellow, keels white; pedicel and ovary 6–11 mm, longer than bracts. Dorsal sepal elliptic to obovate, 11.5–14 × ca. 1.5 mm, acute to obtuse; lateral sepals elliptic to triangular, strongly falcate, ca. 11 × 2 mm, acute to obtuse. Petals elliptic to obovate, strongly falcate, 11–13 × ca. 2 mm; lip 8–9 × 6.5–7 mm, 3-lobed; lateral lobes obliquely triangular, falcate, 1–1.5 mm, obtuse; mid-lobe transversely elliptic, ca. 3 × 6–7 mm, slightly acuminate; disk with 3 keels, sometimes raised platelike distally. Column 5.5–6 mm; foot 1–1.5 mm.

Taiwan [Japan].

10. *Tainia dunnii* Rolfe, J. Linn. Soc., Bot. 38: 368. 1908.

带唇兰 dai chun lan

Tainia flabellilobata C. L. Tso; *T. gracilis* C. L. Tso (1933), not Gagnepain (1932); *T. laxiflora* Makino var. *shimadae* (Hayata) Miroe; *T. parvifolia* C. L. Tso; *T. procera* Senghas; *T. quadriloba* Summerhayes; *T. shimadae* Hayata.

Pseudobulbs dark purple to purplish, cylindric, rarely narrowly ovoid, 1–7 cm × 5–10 mm, often ± covered with membranous sheaths. Petiole 2–6 cm; leaf blade narrowly oblong or elliptic-lanceolate, plicate, 12–35 × (0.6–)1.5–6 cm, 3-veined, acuminate. Inflorescence erect; peduncle 30–60 cm, slender, with 3 membranous tubular sheaths; rachis reddish brown, to 20 cm, laxly many flowered; floral bracts red, narrowly lanceolate, 3–7 mm, acuminate. Flowers yellowish brown or brownish purple, lateral lobes of lip pale yellow, with many purplish black spots, mid-lobe yellow, anther cap with 2 purple conic projections; pedicel and ovary reddish brown, ca. 1 cm. Dorsal sepal narrowly oblong-lanceolate, 11–12(–18) × 2.5–3 mm, acute or subobtuse, midvein rather conspicuous; lateral sepals narrowly oblong-falcate, base adnate to column foot forming a conspicuous mentum. Petals similar to sepals, acute, midvein rather conspicuous; lip orbicular in outline, ca. 1 cm, base adnate to end of column foot, 3-lobed; lateral lobes erect, deltoid, ca. 2.5 mm, ca. 1 cm wide when flattened, acute; mid-lobe transversely oblong, apex subtruncate or emarginate and sinus mucronate; disk glabrous or slightly hairy, with 3 lamellae. Column arcuate, ca. 8 mm, slender; foot ca. 2 mm. Fl. Mar–Apr.

• Evergreen broad-leaved forests, streamsides; 600–1900 m. N

Fujian, Guangdong, N Guangxi, C Guizhou, Hainan, Hunan, Jiangxi, Sichuan, Taiwan, Zhejiang.

11. *Tainia minor* J. D. Hooker, Fl. Brit. India 5: 821. 1890.

滇南带唇兰 dian nan dai chun lan

Pseudobulbs close or slightly spaced, cylindric-ovoid, 2.5–6.5 × 0.3–0.6 cm, ± covered with membranous tubular sheaths. Petiole 7–8 cm, slender; leaf blade oblong, 18–20 × 5–5.5 cm, 3-veined, base truncate or suborbicular, apex acute. Inflorescence erect, much longer than leaves, laxly few flowered; rachis pale purplish brown; floral bracts narrowly ovate-lanceolate, 3–5 mm. Flowers suberect; sepals and petals pale purplish brown with deep purple spots, lateral lobes of lip white, tinged with pale purplish brown, mid-lobe white, anther cap green; pedicel and ovary shorter than floral bracts. Dorsal sepal narrowly oblong, ca. 15 × 2 mm, 3-veined, slightly obtuse; lateral sepals narrowly falcate-oblong, ca. 15 × 2 mm, base adnate to column foot forming a short mentum. Petals narrowly falcate-oblong, ca. 15 × 2.5 mm, 3-veined, acute; lip elliptic in outline, ca. 1.2 cm, 3-lobed; lateral lobes erect, narrowly triangular, ca. 7 mm wide when flattened, acute; mid-lobe suborbicular, ca. 5 mm wide, apex rounded and emarginate; disk with 5 lamellae. Column ca. 7 mm; foot ca. 1 mm. Fl. May. $2n = 40$.

Damp places on wooded slopes; 1900–2100 m. SE Xizang, W to SE Yunnan [NE India, Myanmar].

12. *Tainia latifolia* (Lindley) H. G. Reichenbach, Bonplandia 5: 54. 1857.

阔叶带唇兰 kuo ye dai chun lan

Ania latifolia Lindley, Gen. Sp. Orchid. Pl. 130. 1831; *Eulophia hastata* Lindley; *Mitopetalum latifolium* (Lindley) Blume; *Tainia cordata* J. D. Hooker; *T. elliptica* Fukuyama; *T. hastata* (Lindley) J. D. Hooker; *T. khasiana* J. D. Hooker; *T. shimadae* Hayata var. *elliptica* (Fukuyama) S. S. Ying.

Pseudobulbs close, cylindric-ovoid, ca. 7 cm, base 1–1.5 cm in diam., usually ± covered with membranous sheaths. Petiole 8–30 cm, slender; leaf blade elliptic or elliptic-lanceolate, plicate, 18–32 × 5–7 cm, papery, acuminate. Inflorescence erect; peduncle 20–80 cm, with 3 tubular sheaths 5–8 cm; rachis deep brown, ca. 20 cm, laxly many flowered; floral bracts narrowly lanceolate, ca. 2 mm. Flowers fragrant; pedicel, ovary, sepals, and petals dark brown, lip yellow, column yellow, anther cap with 2 purplish red appendages; pedicel and ovary ca. 1.3 cm, ovary dilated, clavate. Dorsal sepal narrowly oblong, 11–13 × 1.7–2 mm, 3-veined, obtuse; lateral sepals narrowly falcate-oblong, ca. 12 × 2 mm, base adnate to column foot forming a short mentum. Petals similar to lateral sepals, 12–13 × 2–3 mm, 3-veined, subacute; lip elliptic to ovate, 8–12 × 4–9 mm, normally 3-lobed; lateral lobes erect, ovate-triangular, 5–7 mm wide when flattened, acute; mid-lobe suborbicular or obovate, ca. 4 mm wide, apex emarginate; disk with 3 lamellae extending to apex of mid-lobe, lateral ones broader and arcuate. Column arcuate, ca. 7 mm, distal margin entire to slightly denticulate; foot ca. 2 mm. Fl. Mar. $2n = 32, 40$.

Wooded slopes; 700–1400 m. Hainan, C and S Taiwan, S and SW Yunnan [Bangladesh, Bhutan, NE India, Laos, Myanmar, Thailand,

Vietnam].

Tainia latifolia is represented in China by subsp. *latifolia*; *T. lati-*

folia subsp. *elongata* (J. J. Smith) H. Turner, from Sumatra and Java, is a smaller plant with shorter pseudobulbs and a denticulate to slightly erose distal column margin.

13. *Tainia macrantha* J. D. Hooker, Hooker's Icon. Pl. 19: ad t. 1860. 1889.

大花带唇兰 da hua dai chun lan

Mischobulbum macranthum (J. D. Hooker) Rolfe.

Pseudobulbs prostrate on rhizome and then arching-ascending, narrowly cylindric, 4–9 cm × 5–7 mm. Petiole 4–5 cm; leaf blade elliptic, plicate, 14–20 × 4–7 cm, thinly papery, base truncate or subrounded, apex acuminate or shortly acuminate. Inflorescence erect, with 3 sheaths 1.5–6 cm; rachis 3–6-flowered; floral bracts ovate-lanceolate, 7–14 mm, acuminate. Flowers large, apical half bright red, basal half greenish white, spotted with bright red; pedicel and ovary ca. 15 mm. Dorsal sepal narrowly lanceolate, ca. 3.5 × 0.5–0.6 cm, 3-veined, acuminate; lateral sepals similar to dorsal sepal, ca. 3.8 × 0.7–0.8 cm, apex long acuminate, base broadly adnate to column foot forming a broadly conic mentum. Petals lanceolate, ca. 3.5 × 1 cm, 3-veined, acuminate; lip rhombic-hastate, ca. 3.5 × 2.1–2.2 cm, base cuneate, adnate to end of column foot, upper part slightly 3-lobed; lateral lobes erect, subtriangular, small, slightly obtuse; mid-lobe ovate-triangular, acute; disk with 3 lamellae, lateral 2 broader and arcuate. Column ca. 1.5 cm, winged; foot 1.1–1.5 cm. Fl. Jul–Aug.

Wooded slopes or rocky places along valleys; 700–1200 m. S and SW Guangdong, Guangxi [Vietnam].

