### 142. BULBOPHYLLUM Thouars, Hist. Orchid., Tabl. Esp. 3. 1822, nom. cons.

**石豆兰属 shi dou lan shu**

Chen Xinqi (陈心启 Chen Sing-chi); Jaap J. Vermeulen

**Phyllum**s Thouars.

Herbs, epiphytic. Rhizome usually rather long, creeping or hanging, usually bearing a series of pseudobulbs, very rarely without pseudobulbs. Pseudobulbs well spaced to clustered on rhizome, each with a single joint. Leaves 1 or rarely 2 or 3, arising from apex of pseudobulbs or very rarely directly from rhizome; leaf blade usually leathery, varying in size. Scape arising laterally from base of a pseudobulb or from a node of rhizome; inflorescence usually racemose or umbellate, 1- to many flowered; floral bracts often small. Flowers small to large. Sepals subequal in size or lateral sepals much longer than dorsal one; lateral sepals free or ± connate on lower or upper edges, base adnate to column foot forming a short mentum. Petals free, usually smaller than sepals; lip often hinged to end of column foot, mobile or sometimes immobile, usually fleshy and recurved. Column short, winged, base with a distinct foot; wings often dilated to form teeth or stelidia; anther 2-locular, sometimes 1-locular; pollinia 4, in 2 pairs, waxy, without appendages, sometimes attached to sticky substance.

About 1,900 species: largely in tropical areas of both Old and New Worlds; 103 species (33 endemic) in 18 sections in China.

*Bulbophyllum formosanum* (Rolfe) K. Nakajima (Biol. Mag. Okinawa 10: 36. 1973; Cirrhopetalum formosanum Rolfe, Bull. Misc. Inform. Kew 1914: 372. 1914), described from Taiwan, is a doubtful species. The original description by Rolfe is quite different from that by Seidenfaden (Dansk Bot. Ark. 29(1): 172, fig. 85. 1974), who published the combination figure rather than with Rolfe's description, which seems to refer to another species. Further study is needed.

### Key to sections

1a. Pseudobulbs 2-leaved.


2b. Lateral sepals ca. as long as dorsal sepal or slightly longer .......................... 18. *B. sect. Pleiophylla* (p. 438)

1b. Pseudobulbs, or shoot tip if pseudobulbs inconspicuous, 1-leaved.

3a. All inflorescences 1-flowered.

4a. Petals 5- or more veined.


5b. Dorsal sepal glabrous.

6a. Node at base of pedicel at least 1.5 × width of pedicel above subtending bract ...... 2. *B. sect. Sextochilos* (p. 409)

6b. Node at base of pedicel coinciding with bract attachment, or removed from it less than 1 × width of pedicel ........................................................................ 1. *B. sect. Leopardina* (p. 406)

4b. Petals 1–3-veined.

7a. New shoots arising well away from basal node of pseudobulb; pseudobulbs distinctly present ............................................................... 5. *B. sect. Macroaulia* (p. 415)

7b. New shoots arising from base of pseudobulb; or pseudobulbs minute, inconspicuous compared to size of plant.

8a. Lateral sepals ca. 2 × as long as dorsal sepal ......................... 13. *B. “Section 13”* (64. *B. omerandrum*; p. 427)

8b. Lateral sepals ca. as long as or slightly longer than dorsal sepal.

9a. Basal node of pedicel well above attachment of floral bract.


10b. Rhizome pendulous, roots growing over it toward point of attachment to substrate; petals with appendages ........................................ 3. *B. sect. Epicranthes* (p. 410)

9b. Basal node of pedicel level with attachment of floral bract.


11b. Pseudobulbs absent or minute, inconspicuous compared to size of plant .......................................................... 16. *B. sect. Stachysanthes* (p. 436)

3b. Racemose inflorescences (i.e., with 2 or more flowers) present.

12a. Petals 5- or more veined.


13b. Dorsal sepal glabrous.

14a. Lateral sepals twisted inward near base so that upper margins are turned toward one another .................................. 12. *B. sect. Umbellata* (56. *B. umbellatum*; p. 422)


12b. Petals 1–3-veined.
15a. Lip with small auricles well above base.
16a. Raceme elongated, or raceme congested and floral bracts longer than pedicel plus ovary ................................................................. 9. B. sect. Anisopetalon (p. 418)
15b. Lip without auricles well above base, or with retrorse auricles immediately next to ligament.
17a. Petal margins glabrous.
18a. Pseudobulbs inconspicuous, or very small compared to size of plant.
19a. Inflorescence 2- or 3-flowered ......................................................... 16. B. sect. Stachysanthes (p. 436)
19b. Inflorescence 5- or more flowered.
18b. Pseudobulbs distinctly present.
21a. Lateral sepals twisted inward near base so that upper margins are turned toward one another; upper margins fused or free; or lateral sepals ca. 8 mm wide.
22a. Lateral sepals fused along their upper margins; or lateral sepals free, and petals 4–7 mm ................................................................. 12. B. sect. Umbellata (p. 422)
22b. Lateral sepals free; petals ca. 2 mm ...... 4. B. sect. Corymbosa (20. B. ledungense; p. 411)
21b. Lateral sepals not twisted inward near base, free, ± spreading; lateral sepals 1–3 mm wide.
23a. Stelidia deltoid to subulate, rounded to acuminate, not twisted inward ................................................................. 4. B. sect. Corymbosa (p. 411)
17b. Petal margins (irregularly) denticulate, serrate, ciliate, fimbriate, or with glandular appendages.
24a. Raceme congested, flowers all radiating from ± same point, arranged in an umbel.
25a. Dorsal sepal glabrous with a terminal thread ending in a widened palea, or dorsal sepal ciliate ................................................................. 14. B. sect. Cirrhopetalum (p. 430)
25b. Dorsal sepal glabrous without a terminal thread ending in a palea, or dorsal sepal papillose, denticulate, erose, or with glandular appendages.
26a. Lateral sepals twisted inward near base so that upper margins are turned toward one another; upper margins fused or free ................................................................. 13. B. “Section 13” (p. 427)
26b. Lateral sepals diverging, not twisted inward ...... 8. B. “Section 8” (30. B. levinei; p. 417)
24b. Raceme elongate.
27a. Dorsal sepal ciliate.
28a. Lip with minute, retrorse auricles at its base, immediately next to ligament ................................................................. 10. B. sect. Hirtula (p. 419)
28b. Lip without auricles at its base ......................................................... 8. B. “Section 8” (32. B. insulsoides; p. 417)
27b. Dorsal sepal glabrous.
29a. Inflorescence 2- or 3-flowered ..................................................... 13. B. “Section 13” (64. B. omerandrum; p. 427)
29b. Inflorescence 5- or more flowered.
30a. Raceme lax, flowers spaced, scattered.
31a. Column foot elongate, causing a gap between petals and lateral sepals ................................................................. 11. B. sect. Altisceptrum (p. 421)
31b. Column foot not elongate, petals and lateral sepals partly overlapping ......................................................... 8. B. “Section 8” (31. B. eublepharum; p. 417)
30b. Raceme dense, flowers arranged in a ± regular pattern.
32b. Stelidia with a distinct tooth
1. **Bulbophyllum** sect. Leopardina *Bentham & J. D. Hooker, Gen. Pl. 3: 502. 1883* [“Leopardinae”].

**short-spur group duan ting zu**

Rhizome creeping or straggling; roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescences solitary, arising near pseudobulbs, 1-flowered or 2–4-flowered in an elongate or contracted raceme. Pedicel with basal node coinciding with attachment of subtending bract, or no more than 1 × diam. of pedicel above it. Sepals free, ± equal in length or lateral sepals somewhat longer, margins glabrous, 5- or more veined. Petals: margins glabrous to erose, 5- or more veined (3-veined in *Bulbophyllum ambrosia*); lip with or without antrorse auricles along margins well above its base, margins otherwise glabrous to partly or entirely erose or denticulate, adaxially glabrous to variously verrucose or papillose. Column: stigma not protruding at its base, foot distinct; anther: front margin not or slightly projecting, abaxially with a high, conic crest (a small crest in *B. ambrosia*); pollinia 4, with or without stipe, inner more than 1/2 as long as outer.

Seventy-two provisionally accepted species: Himalayas to W Pacific; seven species in China.

1a. Proximal margin of stigma distinctly protruding ……………………………………………………………………………………………………… 1. *B. striatum*

1b. Proximal margin of stigma not protruding.

2a. Anther abaxially with a low, rounded crest.

3a. Lip margins entire ………………………………………………………………………………………………………………………………….. 2. *B. ambrosia*

3b. Lip margins erose-lacerate ………………………………………………………………………………………………………………………… 3. *B. pectinatum*

2b. Anther abaxially with a high, conic or triangular and dorsiventrally flattened crest.

4a. Pseudobulbs prostrate on rhizome for ca. 2/3 of their length.

5a. Lip adaxially with 2 high, straight ridges with entire crests; anther abaxially with a dorsiventrally flattened crest …………………………………………………………………………………………………………………………………. 4. *B. psittacoglossum*

5b. Lip adaxially with 2 low, wavy ridges with proximally erose crests; anther abaxially with a conic crest ………………………………………………………………………………………………………………………………………… 5. *B. yunnanense*

4b. Pseudobulbs obliquely ascending, or prostrate on rhizome at their base only.

6a. Lip 5.5–8.5 × 4–6 mm; stelidia with a distinct, triangular tooth along lower margin …………………………………………………………………………………………………………………………………. 6. *B. griffithii*

6b. Lip 9.5–14 × 6–9 mm; stelidia with an inconspicuous, broadly deltoid wing along lower margin ………………………………………………………………………………………………………………………………….. 7. *B. leopardinum*


**细柄石豆兰** xi bing shi dou lan

*Dendrobium striatum* Griffith, Not. Pl. Asiat. 3: 318. 1851; *Sarcopodium striatum* (Griffith) Lindley.

Roots along entire rhizome. Rhizome 1–4 mm in diam., sections between pseudobulbs 1.5–10 cm, bract fibers hardly persistent. Pseudobulbs distant, globose to ovoid, 0.8–1.7 × 0.7–1.7 cm. Petiole 1.2–5.5 cm; leaf blade ovate to elliptic, 2.3–8 × 1.2–3.8 cm, obtuse. Inflorescence erect to spreading, 2.5–15 cm, 1-flowered or a (subumbellate) raceme, 2–4-flowered; peduncle 1.7–13 cm; bracts 4–6, longest 4.5–9.5 mm; rachis to 1.6 cm; floral bracts ovate, 4–7 × ca. 2 mm, acute. Flowers resupinate, fully opening ± simultaneously, light greenish or yellowish green, veins purple, lip whitish green or yellow with purple lines; pedicel and ovary 10–17 mm. Dorsal sepal recurved, elliptic to ovate, 9–12 × 3.3–4.5 mm, thin, glabrous, base rather narrowly attached, margins entire, apex acute; lateral sepals free, oblique, triangular, 8.5–13.5 × 3.5–5 mm, base rather broadly attached, otherwise as dorsal sepal. Petals recurved, elliptic to ovate-triangular, 4.5–7 × 1.8–2.4 mm, thin, glabrous, base rather narrowly attached, margins entire or slightly erose toward tip, apex acute to acuminate; lip recurved at ca. 1/3 of its length, ovate, 5–8 × 2.2–4 mm (all without artificial spreading), rather thin, glabrous, abaxially with a narrow, retuse median ridge over ca. 2/3 of length of lip, adaxially slightly concave and with 2 short, rather inconspicuous, parallel, rounded ridges near base, flat or slightly convex toward tip, margins entire and with 2 minute, antrorse, triangular, acute auricles near base, apex emarginate to rounded. Column 2.8–3.5 mm, stigma inside without keels, its basal margin protruding, column foot without tooth; stelidia rounded to ± truncate, ca. 0.7 mm, front margin somewhat erose, acute; anther abaxially glabrous, with a high, conic crest near tip, front margin not drawn out, erose. Fl. Jan–Feb, Oct–Dec.

Rocks in thickets on limestone slopes, epiphytic in forests; 1000–2300 m. SE Yunnan [Bhutan, India, Nepal, Thailand, N Vietnam].


**芳香石豆兰** fang xiang shi dou lan

Roots below pseudobulbs only. Rhizome 0.8–3 mm in diam., sections between pseudobulbs 3.5–8 cm, bract fibers moderately persistent. Pseudobulbs distant, narrowly ellipsoid or obovoid to cylindric, somewhat flattened or not, 1.8–5 × 0.5–0.9 mm. Petiole 0.3–0.9 cm; leaf blade elliptic, 3–9 × 0.8–2.1 cm, rounded to obtuse. Inflorescence erect to spreading, 3–11 cm, 1-flowered, rarely a subumbellate raceme, 2-flowered; peduncle 1.7–8 cm; bracts 3 or 4, longest 3–10 mm; rachis to 0.5 cm; floral bracts ovate, 2.5–5 × 1.5–4 mm, acute. Flowers resupinate, moderately to widely, and simultaneously opening. Pedicel and ovary 8–18 mm. Dorsal sepal recurved, (ovate
or) triangular, 9–14 × 6–9 mm, thin, glabrous, base narrowly attached, margin entire, apex acute to acuminate; lateral sepals free, oblique, elliptic to ovate including a winglike, sometimes anthorse widening along lower margin, or triangular, 10–14 × 7–11 mm, base rather broadly attached, otherwise as dorsal sepal. Petals recurved, triangular with lower margin decurrent along column foot, 5–8 × 2.2–4 mm, thin, glabrous, base broadly attached, margins entire, apex acute to acuminate; lip reflexed slightly over 1/2 its length, ± elliptic in general outline, 5.5–8 × 5–6 mm (all without artificial spreading), very thick; abaxially with a weak retuse median ridge toward base, surface glabrous; adaxially concave and with a median slit with slightly thickened margins toward base, convex but deeply furrowed toward tip, surface slightly rugose toward tip, apex rounded to apiculate. Column 1.8–3.2 mm, stigma inside without keels, at its base without teeth, column foot without tooth just above ligament; stelidia deltoid to triangular, 0.3–0.8 mm, acute with a minute tooth along upper margin, close to tip, or minutely bifurcate; anther abaxially ± glabrous and with a low, rounded crest; front margin not drawn out, slightly erose.

Epiphytic or lithophytic in forests, thicket, and on various bedrock types including limestone; 600–1500 m. Fujian, S Guangdong, W Guangxi, Hainan, Yunnan [Nepal, Vietnam].

1a. Pseudobulbs narrowly ellipsoid to cylindric, slightly flattened ....................... 2a. subsp. ambrosia
1b. Pseudobulbs obovoid, shortly stipitate, not flattened ......................... 2b. subsp. nepalense

2a. Bulbophyllum ambrosia subsp. ambrosia

芳香石豆兰(原亚种) fang xiang shi dou lan (yuan ya zhong)


Rhizome 1.4–3 mm in diam. Pseudobulbs dull, green, often slightly suffused with purple, narrowly ellipsoid to cylindric, somewhat flattened, 2.5–5 × 0.5–0.9 cm. Petiole 0.4–0.9 cm; leaf blade 3–9 × 1–2.1 cm, obtuse. Inflorescence 1-flowered, rarely a subumbellate raceme, 2-flowered. Flowers whitish with red veins, sometimes suffused with red toward margins, lip white, with a red median band, top part suffused with red or pink. Dorsal sepal 9–13 × 6–8.3 mm; lateral sepals elliptic to ovate including a winglike, sometimes anthorse widening along lower margin, 10–14 × 7–10 mm. Petals 5–8 × 2.2–4 mm. Fl. Jan–May, Nov–Dec.

Epiphytic or lithophytic in primary ever-wet forests, mixed semideciduous forests, coniferous forests, thickets, on various bedrock types including limestone; 600–1300 m. Fujian, S Guangdong, W Guangxi, Hainan, S and SE Yunnan [Vietnam].


西南石豆兰 xi nan shi dou lan

Rhizome 0.8–1.5 mm in diam. Pseudobulbs glossy, yellowish green, obovoid, not flattened, 1.8–2.5 × 0.7–0.8 cm. Petiole 0.3–0.5 cm; leaf blade 3–5 × 0.8–2 cm, rounded. Inflorescence 1-flowered. Flowers white or yellowish, with red veins, lip greenish white or yellowish, slightly stained with red toward margins. Dorsal sepal 12–14 × 8–9 mm; lateral sepals triangular, 12–14 × 10–11 mm. Petals 5–5.5 × ca. 3.5 mm. Fl. Nov–Dec.

Epiphytic in forests, associated with *Coelogyne cristata*; 1200–1500 m. Yunnan [Nepal].

3. Bulbophyllum pectinatum

*Bulbophyllum pectinatum* var. *transarisanense* (Hayata) S. Ying; *B. transarisanense* f. *alboviride* Fukuyama; *B. viridiflorum* Hayata.

Rhizome 1.8–3 mm in diam., sections between pseudobulbs 0.4–1.2 cm, bract fibers hardly persistent. Pseudobulbs close together, ovoid to almost globose, not or hardly prostrate proximally, 1.1–2.5 × 0.6–1.5 cm. Petiole 0.3–1.5 cm; leaf blade elliptic to ovate, 3–8 × 0.9–2.3 cm, rounded to obtuse. Inflorescence erect to spreading, 6–10 cm, 1-flowered; peduncle 1.2–4.5 cm; bracts ca. 3, longest 6–9 mm; floral bracts tubular for 2/3 or more of their length, 6.5–14 mm, acute. Flowers resupinate, opening wide, pale greenish, often with fine reddish purple spots mainly along veins; lip pale green to white, stained or finely spotted with reddish purple. Pedicel and ovary 32–60 mm. Dorsal sepal recurved with top incurved, ovate, 13–23 × 5–13 mm, rather thin, glabrous, base rather narrowly attached, margin entire, apex obtuse to acute; lateral sepals free, recurved to spreading, elliptic to ovate-triangular, 15–26 × 11–14 mm, (sub-)acute, rather broadly attached, otherwise as dorsal sepal. Petals recurved to spreading, elliptic to ovate-triangular, 10–19 × 5–11 mm, rather thin, glabrous, base rather broadly attached, margins entire, apex obtuse to acute; lip recurved to almost reflexed at ca. 2/3 of its length, ovate-triangular, 10–16 × 7–18 mm (all without artificial spreading), thick but proximally thin toward margins; abaxially with a retuse median ridge up to ca. 2/3 of length of lip, surface glabrous; adaxially deeply concave proximally, with 2 retorse, dorsiventrally flattened, rounded lobes close together and covering ligament, toward top slightly concave grading to distinctly convex and with 2 well-spaced, high, narrow, papillose ridges with a deeply erose crest, adaxially papillose-verrucose distally and sometimes in between ridges, surface otherwise glabrous, margins erose-lacerate, more deeply so proximally, apex obtuse. Column 2.5–5 mm, stigma inside with 3 keels, at its base without teeth, column foot without a tooth above ligament; stelidia deltoid, 1–2 mm, obtuse; anther abaxially ± glabrous and with a rounded crest; front margin drawn out, erose; pollinia with a fleshy stipe firmly attached to their bases. Fl. (Mar–) Apr–Jul (–Sep).

Epiphytic in forests, also found as a lithophyte along ravines; 1000–2700 m. Taiwan, SE to W Yunnan [NE India, Myanmar, N Thailand, Vietnam].

4. Bulbophyllum psittacoglossum


滇南石豆兰 dian nan shi dou lan

*Phyllokiis psittacoglossa* (H. G. Reichenbach) Kuntze;
Sarcopodium psittacoglossum (H. G. Reichenbach) Hooker.

Rhizome 2.8–4 mm in diam., sections between pseudobulbs 1.5–3.8 cm, bract fibers persistent, forming a loose net around pseudobulb. Pseudobulbs distant, ellipsoid to (ob-)ovoid, prostrate on rhizome for ca. 2/3 of their length, 2.3–5 × 1–2 cm. Petiole 1.3–4 cm; leaf blade elliptic to (ob-)ovate, 6–12 × 2.4–4 cm, acute. Inflorescence erect to spreading, 4–9 cm, 1-flowered or a raceme, 2– or 3-flowered; peduncle 0.7–2.5 cm; bracts ca. 2, longest 7–9 mm; rachis 0.3–2 cm; floral bracts elliptic, sometimes tubular at very base only, 4–12 × 2.5–8 mm, acute. Flowers resupinate, moderately opening, (greenish) yellow with dark reddish purple veins, lip yellowish, abaxially mottled with reddish purple, adaxially dark reddish purple. Pedicel and ovary 19–48 mm. Dorsal sepal recurved with top incurved, elliptic to ovate-triangular, 11.5–20 × 4–11.5 mm, rather thick, glabrous, base rather broadly attached, margin entire, apex obtuse to acute; lateral sepals free, recurved, ovate to triangular, 13–20 × 6.5–11 mm, otherwise as dorsal sepal. Petals recurved, elliptic to (ob-)ovate, 11–19 × 3.5–8 mm, rather thick, glabrous, base broadly attached, margins entire, apex obtuse to acute; lip recurved, ovate but constricted ca. halfway, 7–13 × 4–7 mm (all without artificial spreading), thick; abaxially with a retuse median ridge up to 1/2–2/3 of length of lip, surface glabrous; adaxially concave proximally, convex distally, with a median slit over most of length of lip, proximally widening into a shallow cavity bordered by 2 short, distally converging ridges, with 2 more ridges with wavy, proximally erose crests starting at lacerate part of margin and running almost parallel or converging slightly up to ca. 2/3 of length of lip, surface in between only slightly verrucose, surface toward margins coarsely and irregularly verrucose, margins deeply denticate-lacerate at ca. 1/4 of length of lip, otherwise ± entire, apex obtuse. Column 3–4.5 mm, stigma inside with 3 keels, at its base without teeth, column foot without a tooth above ligament; stelidia triangular, ca. 1 mm, acute, with or without a small deltoid, subacute tooth along upper margin, with an inconspicuous, widely deltoid, obtuse wing along lower margin, ca. halfway along column; anther abaxially ± glabrous and with high, narrowly conic, sharp crest; front margin not drawn out, slightly erose; pollinia with a small, thick stipe. Fl. May–Jul, Oct–Dec.

Epiphytic in forests, also lithophytic; 1400–2900 m. NW and SE Yunnan [Bhutan, Nepal].


短齿石豆兰 duan chi shi dou lan

Sarcopodium griffithii Lindley, Fol. Orchid. 2(Sarcopodium): 6. 1853; Bulbophyllum calodictyon Schlechter; B. chitouense S. S. Ying.

Rhizome 1.2–2 mm in diam., sections between pseudobulbs 0.4–2 cm, bract fibers hardly persistent. Pseudobulbs close together, not or hardly prostrate proximally, ovoid to almost globose, 0.7–3 × 1.3–2 cm. Petiole 0.2–1.5 cm; leaf blade elliptic to ovate, 2.2–12 × 1–2.8 cm, obtuse to acute. Inflorescence erect to spreading, 3.6–6 cm, 1-flowered; peduncle 0.6–2 cm; bracts ca. 2, longest 5–8 mm; floral bracts tubular for 2/3 or more of their length, 4–6.5 mm, acute. Flowers resupinate, moderately opening, yellow or yellowish green with reddish purple dots, lip yellow, heavily stained with reddish purple adaxially, column yellow. Pedicel and ovary 20–26 mm. Dorsal sepal recurved with top incurved, elliptic to ovate, 8–12 × 4.5–9 mm, rather thick, glabrous, base rather broadly attached, margin entire, apex obtuse to acute; lateral sepals free, recurved, (ovate-)triangular, 9–13 × 6–10 mm, (sub-)acute, other-
often arranged in oblique, irregular and frequently interrupted verse ribs, surface toward margins verrucose with verrucae partly or almost entirely covered with irregular, wavy transverse ribs, surface toward margins verrucose with verrucae often arranged in oblique, irregular and frequently interrupted crests, margins entire, somewhat irregular distally, with a triangular, obtuse to acute, somewhat erose-lacerate auricle at ca. 1/3 of length of lip, apex rounded to truncate. Column 3.8–5 mm, stigma inside with 3 keels, at its base without teeth, column foot without a tooth above ligament; stelidia triangular, 1.2–2 mm, acute, with or without a small subacute tooth along upper margin, with a distinct, spreading, straight, triangular, obtuse to acute along lower margin, ca. halfway along column; anther abaxially ± glabrous and with high, conic, sharp crest; front margin not drawn out, erose; pollinia ?without a stipe. Fl. Feb, Aug, Oct–Nov.

Understory epiphyte in forests; 1000–1700 m. C Taiwan, C and SE Yunnan [Bhutan, India (Sikkim), Nepal, Vietnam].


Rhizome 2.5–8 mm in diam., sections between pseudobulbs 1.2–4 cm, bract fibers moderately persistent, sometimes forming a loose net around pseudobulb. Pseudobulbs close together or distant, often somewhat prostrate proximally, ovoid, 2.5–5 × 1–2.5 cm. Petiole 2–8 cm; leaf blade elliptic to obovate, 3.5–18 × 2–6.5 cm, obtuse to acute. Inflorescence erect to spreading, 5–10 cm, 1-flowered or a raceme, 2-flowered; peduncle 0.6–2.5 cm; bracts ca. 2, longest 6–10 mm; rachis 0.2–0.7 cm; floral bracts tubular, 7–14 mm, acute. Flowers resupinate, moderately opening, (creamy) yellow to (pale) green, often partly spotted or suffused with red or purple, sometimes with a yellow halo around numerous red or purple spots, lip yellow, adaxially strongly suffused with red. Pedicel and ovary 28–50 mm. Dorsal sepal recurved with top incurved, elliptic to ovate-triangular, 14–20 × 6.5–13.5 mm, rather thick, glabrous, base rather broadly attached, margin entire, apex truncate and acuminate, lateral sepals free, recurved, ovate to triangular, 15–23 × 10–15 mm, obtuse and apiculate to acute, otherwise as dorsal sepal. Petals recurved, elliptic to ovate, 9.5–14 × 6–9 mm (all without artificial spreading), thick; abaxially with a truncate median ridge up to 2/3 of length of lip, surface glabrous; adaxially slightly concave proximally, convex distally, with a median slit over most of length of lip, proximally deepening and widening into a cavity bordered by 2 short, distally converging ridges, with 2 more ridges with straight, proximally erose-lacerose crests starting at lacerate part of margin and running almost parallel or converging slightly over most of length of lip, surface in between glabrous, surface toward margins almost glabrous to finely rugose-verrucose, margins denticate-lacerate at ca. 1/4 of length of lip, otherwise ± entire, apex obtuse. Column 4–6.5 mm, stigma inside without keels, at its base without teeth, column foot without a tooth above ligament; stelidia triangular, 1–2 mm, acute, with or without a small, deltoid, obtuse tooth along upper margin, with an inconspicuous, widely deltoid, obtuse wing along lower margin, ca. halfway along column; anther abaxially ± glabrous and with conic, sharp crest; front margin not drawn out, ± entire; pollinia without a stipe. Fl. Apr–Aug, Oct.

Epiphytic in forests, also lithophytic; 1300–3300 m. S Xizang, S Yunnan [Bhutan, India, Laos, Nepal, N Vietnam].


大花组 da hua zu

Rhizome creeping; roots sprouting along rhizome, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescences solitary, arising near pseudobulbs, 1-flowered. Pedicel with basal node distinctly more than 1 × diam. of pedicel above subtending bract. Sepals free, ± equally long, margins glabrous, 5- or more veined. Petals: margins glabrous, 5- or more veined; lip with or without lateral lobes along margins well above its base, margins otherwise glabrous to partly or entirely erose or denticulate, adaxially glabrous. Column: stigma not protruding at its base, foot distinct; anther: front margin not or slightly projecting, abaxially with a low, or a high, conic crest; pollinia 4, inner more than 1/2 as long as outer, all without appendages.
1a. Lip with rounded lateral lobes near middle .................................................. 8. B. pteroglossum
1b. Lip without lateral lobes, lanceolate in outline ............................................. 9. B. affine


**Bulbophyllum devangirense** N. P. Balakrishnan; **B. monanthum** (Kuntze) J. J. Smith (1912), not **B. monanthos** Ridley (1896); **B. tiagii** A. S. Chauhan; **B. uniflorum** A. N. Paxton.

Rhizome stout, ca. 5 mm in diam., rooting at nodes. Pseudobulbs 6–8 cm apart from each other, cylindrical, 3–4 cm, ca. 5 mm in diam., with a terminal leaf. Leaf subsessile; blade oblong, 18–24.5 × 3.4–5.5 cm, fleshy or thickly leathery, apex obtuse. Scape flattened, arising from nodes of rhizome, pendulous, 5–8 cm, terminating in a solitary flower; floral bracts ovate, much shorter than pedicel and ovary, apex acute. Flowers thickened, erect, pale yellow spotted with red, except purple-red mid-lobe of lip. Dorsal sepal elliptic, concave, 12–15 × ca. 7 mm, apex obtuse; lateral sepals obliquely ovate-triangular, ca. 7 × 6 mm, contracted and twisted above middle, base adnate to column foot forming a broad mentum, apex obverse. Petals oblong-lanceolate, ca. 8 × 3 mm, margin entire, apex subacute; lip erect, 2–2.5 mm, basal half subsquare, cordate at base, connected to end of column foot by a mobile joint, near middle 3-lobed; lateral lobes erect, their apices ca. 6 mm apart; mid-lobe deltoïd, apex obtuse-rounded. Column stout; foot upcurved, ca. 1 cm, with free part ca. 2 mm; stelidia inconspicuous; anther cap nearly subspherical. Fl. Nov.

Tree trunks in forests; ca. 1400 m. S Yunnan [Bhutan, NE India, Myanmar].


**Bulbophyllum kusukusense** Hayata; **Phyllorkis affinis** (Lindley) Kuntze; **Sarcopodium affine** (Lindley) Lindley & Paxton.

Rhizome stout, 4–5 cm in diam., covered with scalelike sheaths, rooting at nodes. Pseudobulbs erect, 4–8 cm apart from each other, subcylindric, 3–4 cm, 5–8 mm in diam., with a terminal leaf. Petiole 1–2 cm; leaf blade oblong, 6–26 × 1–4 cm, leathery or fleshy, base contracted into petiole, apex obtuse and slightly emarginate. Scape from node of rhizome and base of pseudobulb, 4–8 cm; inflorescence 1-flowered, base with 3–5 sheaths. Pedicel and ovary 3.5–7.5 cm. Flower thickly textured; sepals and petals pale yellow with purplish stripes; lip purple. Dorsal sepal lanceolate, 17–20 × 4–5 mm, apex acute; lateral sepals falcate-lanceolate, similar in size to dorsal sepal, base adnate to column foot forming a broad mentum, apex acute. Petals lanceolate, 11–15 × 3–4 mm, margin entire, apex acute; lip lanceolate, 8–10 mm, fleshy, adaxially glabrous, grooved at base, hinged to end of column foot by a mobile joint, apex acuminate, slightly recurved. Column ca. 5 mm, stout; stelidia inconspicuous; foot ca. 5 mm, without free part; anther cap ca. 3 mm, adaxially finely papillate. Fl. May–Jul. 2n = 36.

Tree trunks or rocks in forests or along valleys; 100–600 m. S Guangdong, S Guangxi, S Taiwan, S Yunnan [Bhutan, NE India, Japan (Ryukyu Islands), Laos, Nepal, Thailand, Vietnam].


**Epicranthes** Blume, Bijdr. 306. 1825.

Rhizome spreading to pendulous; roots sprouting along rhizome, growing backward over or alongside rhizome until they reach substrate; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescences arising near pseudobulbs, clustered on a lateral sympodium, 1-flowered. Pedicel with basal node distinctly more than 1 × diam. of pedicel above attachment of subtending bract. Sepals free, ± equally long, margins glabrous, 3-veined. Petals: margins with long appendages of a texture different than petal itself, 3–5-veined; lip: margins without auricles or lateral lobes, otherwise hirsute and conspicuously verrucose on both sides. Column: stigma not protruding at its base, foot distinct; anther: front margin projecting into a retuse beak, abaxially with rounded crest; pollinia 2 or 4, with inner more than 1/2 as long as outer, all usually without appendages.

Thirty-eight provisionally accepted species: Myanmar to W Pacific; one species in China.

2–4 appendages; appendages grayish black, densely finely papillate, linear-oblong, ca. 3.5 × 0.3 mm, base with a filiform stalk ca. 1.5 mm, apex obtuse; lip lanceolate, ca. 3.5 mm, fleshy, adaxial base grooved and densely papillate-hairy, apex acute. Column ca. 2 mm, ca. 1 mm in diam.; foot ca. 1 mm, with free part ca. 0.6 mm; stelidia very short, dentate; anther cap with 1 crestlike ridge on apical margin. Fl. Jul.

Tree trunks in evergreen broad-leaved forests; ca. 1700 m. S Yunnan [Laos, Malaysia, Myanmar, Thailand].


Diphyes sect. Corymbosae Blume, Bijdr. 315. 1825 [“Corymbosa”].

Rhizome creeping or straggling with roots sprouting mainly below pseudobulbs, or rhizome spreading to pendulous, with roots growing backward over or alongside rhizome until they reach substrate; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescences solitary, arising along length of rhizome or near pseudobulbs, with 3 to many flowers in a contracted to subumbellate raceme (an elongate raceme in Bulbophyllum reptans and B. polyrrhizum). Pedicel with base ± coinciding with attachment of subtending bract. Sepals free, margins glabrous, 1–3-veined; lateral sepals ca. as long as dorsal sepal or somewhat longer, not twisted inward near base (twisted inward in B. ledungense). Petals: margins glabrous, 1–3-veined; lip: margins without auricles or lateral lobes, otherwise ± glabrous, adaxially usually glabrous (with glandular hairs in B. odoratissimum). Column: stigma not protruding at its base, foot distinct; anther: front margin not projecting or projecting into a rounded beak, abaxially with or without a rounded crest; pollinia 4, inner more than 1/2 as long as outer, all without appendages.

Seventy-six provisionally accepted species: Himalayas to the Philippines and Sulawesi; 14 species (six endemic) in China.

Bulbophyllum reptans and B. polyrrhizum may not belong here. The first has spiral vessels in its flower parts similar to Continental African species such as B. pumilum (Swartz) Lindley.

1a. Raceme elongate, more than 2 cm.
2a. Leaves deciduous before anthesis ................................................................. 11. B. polyrrhizum
2b. Leaves not deciduous at anthesis ................................................................. 12. B. reptans

1b. Raceme umbellate or subumbellate, sometimes condensed-racemose.
3a. Pseudobulbs close, less than 1 cm apart from each other on rhizome.

4a. Rhizome patent to pendulous, with roots growing backward alongside it to base.

5a. Lateral sepals 2.3–7 mm; petal margins irregularly denticulate ........................................ 13. B. corallinum
5b. Lateral sepals 21–23 mm; petal margins entire ................................................. 14. B. dulongjiangense

4b. Rhizome creeping or straggling, with roots spreading.

6a. Lateral sepals obviously longer than dorsal sepal.

7a. Stelidia deltoid or broadly triangular ................................................................. 15. B. sutepense
7b. Stelidia narrowly triangular-subulate, slender ............................................... 16. B. rubrolabellum

6b. Sepals subequal in length.

8a. Floral bracts shorter than pedicel plus ovary; petals elliptic .................................. 16. B. rubrolabellum
8b. Floral bracts longer than petal plus ovary; petals ovate-lanceolate ....................... 17. B. tengchongense

3b. Pseudobulbs spaced more than 1 cm apart from each other on rhizome.

9a. Scape nearly as long as or slightly longer than pseudobulb.

10a. Rhizome stout, 3–4 mm in diam.; pseudobulbs 2–5 cm; dorsal sepal 7–10 mm .............. 18. B. cauliflorum
10b. Rhizome slender, 1–2 mm in diam.; pseudobulbs 0.8–1.5 cm; dorsal sepal 4–6 mm.

11a. Roots only from base of pseudobulbs; scape arising only from base of pseudobulb ........ 19. B. stenobulbon
11b. Roots from all nodes of rhizome and base of pseudobulb; scape arising from base of pseudobulb or nodes between 2 pseudobulbs ...................................................... 20. B. ledungense

9b. Scape more than 2 × as long as pseudobulb.

12a. Lip adaxially and along margin with glandular hairs .............................................. 21. B. odoratissimum
12b. Lip glabrous.

13a. Stelidia rounded; petals obtuse ................................................................. 22. B. wazhishanense
13b. Stelidia acute; petals acute to acuminate.

14a. Lateral sepals adnate to column foot for 1/5–2/5 of their width; petals narrowly lanceolate, 4–5 mm, apex long acuminate; column foot ca. 0.5 mm, with almost invisible free part ......................................................... 23. B. kwangtungense
14b. Lateral sepals adnate to column foot over almost all their length; petals ovate-lanceolate, 3–3.5 mm, apex acute; column foot ca. 2 mm, with its free part 0.8–1 mm ........................................ 24. B. shweliense

**Zhui jing shi dou lan**

Rhizome creeping, ca. 1.5 mm in diam., rooting from base of pseudobulbs. Pseudobulbs 5–10 mm apart on rhizome, ovoid, 7–10 mm, 5–7 mm in diam., apex narrowed and somewhat necklike, with a terminal leaf. Leaf blade narrowly oblong, shorter than scape. Flowers and leaves not appearing at same time. Scapes from base of leafless pseudobulbs, 8–12 cm, slender; raceme 3–6 cm, sparsely with many small flowers; peduncle ca. 1 mm in diam., with 2 or 3 bractlike sheaths; floral bracts ovate, small, ca. 1.5 mm, apex acute. Pedicel and ovary ca. 3 mm. Flowers yellowish green, widely opening. Dorsal sepal ovate-lanceolate, ca. 4.5 × 2 mm, apex acute. Petals ovate-triangular, 2.3–2.5 × 1.2–1.3 mm, apex acute; lip reflexed, sub-oblong, ca. 3 × 0.8 mm, adaxially densely minutely papillate, grooved at adaxial base, attached to end of column foot, immobile, apex obtuse-acute. Column ca. 1.2 mm; foot ca. 1 mm; stelidia obliquely triangular-subulate. Fl. Mar.–Sep.

Tree trunks in evergreen broad-leaved forests; 900–1400 m. S Yunnan [NE India, Myanmar, Nepal, N Thailand].


**Fu sheng shi dou lan**

*Tribrachia reptans* Lindley, Coll. Bot. ad t. 41. 1826; *Phyllokonis reptans* (Lindley) Kuntze.

Rhizome creeping, 2–3.5 mm in diam., branched, covered with tubular sheaths 7–10 mm. Pseudobulbs 5–9 cm apart on rhizome, ovoid or ovoid-conic, 1–2 cm, 5–10 mm in diam., with a terminal leaf. Petiole 1–2 cm; leaf blade narrowly oblong, 7–8(–15) × 0.7–1(–1.4) cm, leathery; base contracted into petiole, apex obtuse and slightly emarginate. Scape from base of pseudobulb, erect, 12–14 cm, slender; raceme 4–6 cm, usually 3–6-flowered; peduncle with 3 or 4 tubular sheaths; floral bracts ovate-lanceolate, 3–6 mm. Pedicel and ovary 3–5 mm. Flowers pale yellow with purplish red stripes. Sepals lanceolate, 7–10 × 2–2.2 mm, thickly textured, abaxially carinate, apex subacute; lateral sepals slightly longer than dorsal sepal, lower edges of basal half connate to each other, base adnate to column foot. Petals ovate-elliptic or obovate, 3–4 × 1.5–2 mm, thinly textured, entire, obtuse-rounded; lip recurved, slightly longer than petals, somewhat fleshy, entire, obtuse. Column ca. 0.8 mm; foot ca. 2 mm, with free part ca. 1 mm; stelidia filiform or subulate, ca. 0.8 mm. Fl. Jan.–Oct. 2n = 38 + 0–2B, 42.

Tree trunks or rocks in evergreen broad-leaved forests; 1000–2800 m. Guangxi, SW Guizhou, Hainan, S and SE Zizang, W to SE Yunnan [Bhutan, NE India, Myanmar, Nepal, Vietnam].


**Huan chun shi dou lan**

Rhizome creeping, with roots creeping along-side it toward base. Pseudobulbs close or ± spaced, ± curved, subcylindric or ovoid, ca. 1 cm, with a terminal leaf. Leaf sub-sessile; blade narrowly oblong or ligulate, 25–43 × 4–7 mm, apex acute. Scape from base of pseudobulb or node of rhizome, very short; peduncle less than 5 mm; raceme dense with several small flowers, and scalelike sheaths at base; floral bracts membranous, longer than pedicel and ovary, ca. 4 mm, apex acute. Flowers brownish red. Sepals free, thickly textured; dorsal sepal ovate-lanceolate, 2.2–6 × ca. 1 mm, apex acuminate; lateral sepals obliquely ovate-triangular or falcate-lanceolate, 2.3–7 × ca. 1 mm, base adnate to column foot forming a mentum, margins strongly incurved above middle, apex long acuminate. Petals oblong, 1.2–1.8 × 0.5–0.8 mm, membranous, margins irregularly denticulate, apex acute; lip hooked-recurved, ca. 1.3 × 0.3 mm, fleshy, base connected to end of column foot by a mobile joint, margins densely white villous, apex obtuse; disk with 2 keels. Column ca. 0.6 mm; foot ca. 1 mm, with free part ca. 0.3 mm; stelidia fusiform, ca. 0.8 mm; anther cap glabrous, centrally with 1 ridge. Fl. Mar.–Sep.

Tree trunks in open forests; 1100–1600 m. S and SE Yunnan [Myanmar, N Thailand].


**Du long jiang shi dou lan**

Rhizome patent to pendulous, with roots creeping along-side it toward base. Pseudobulbs close, cylindric, 1.5–2 × 0.5–0.8 cm, with a terminal leaf. Leaves sub-sessile; blade lanceolate, ca. 35 × 9–10 mm, apex acute. Scape from base of pseudobulb or node of rhizome, very short; peduncle ca. 5 mm; raceme dense with 10–15 small flowers, and 2 or 3 scalelike sheaths at base; floral bracts membranous, longer than pedicel and ovary, 7–8 mm, apex acute. Flowers pale yellow. Sepals free; dorsal sepal linear, 12–14 × ca. 1 mm, apex caudate; lateral sepals obliquely linear, 21–23 × ca. 2 mm, base adnate to column foot forming a mentum, apex caudate. Petals oblong, 1.9–2.1 × 1.3–1.5 mm, membranous, margins entire, apex acuminate; lip hooked-recurved, 2.2–2.2 × 0.9–1 mm, fleshy, base connected to end of column foot by a mobile joint, margins ciliate, apex obtuse; disk with 2 keels. Column ca. 2.5 mm; foot ca. 2 mm; stelidia narrowly triangular, ca. 2 mm. Fl. Oct.–Nov.

- Branches and tree trunks in forests. NW Yunnan (Dulong Jiang).


**Ju zhu shi dou lan**


Rhizome creeping, roots spreading. Pseudobulbs contiguous, pyriform or subglobose, 6–12 mm, 5–10 mm in diam., with a terminal leaf, wrinkled when dried. Leaf sub-sessile; blade oblong or oblong-ligulate, 1.5–4.5 × 0.6–0.9 cm, leathery, base cuneate, apical margins denticulate, apex acute or suborbuse. Scapes 1 or 2, from base of pseudobulb, slightly longer than pseudobulb, glabrous; raceme with shortened rachis, umbel-like, often 4- or 5-flow ered; peduncle less than 5 mm, enclosed in 3 or 4 membranous sheaths; floral bracts ovate-
lanceolate, ca. 4 mm, apex shortly acute. Flowers pale yellow, with free sepalas. Dorsal sepal ovate-lanceolate, concave, 2.2–3 × ca. 1.8 mm, entire, shortly acute, apical margins slightly incurved; lateral sepals obliquely lanceolate, 5.6–1.5–1.8 mm, entire, margins in apical half incurved and tubular, apex long acuminate. Petals narrowly oblanceol, ca. 1.5 × 0.7 mm, entire, acute; lip recurved, nearly ovate-triangular, very small, shorter than petals, 3-lobed; lateral lobes erect, deltoid; mid-lobe narrowly oblong, apex subacute; disk densely papillate adaxially. Column ca. 1.1 mm, stout; stelidia deltoid to broadly triangular, ca. 0.1 mm; foot upcurved, ca. 1.4 mm, with free part ca. 0.8 mm; anther cap subglobose, slightly mucronate. Fl. May.

Tree trunks in mixed forests; 1200–1600 m. S Yunnan [Lao, N Thailand].


红心石豆兰 hong xin shi dou lan

*Bulbophyllum fenghuangshanianum* S. S. Ying; *B. odoratissimum* (Smith) Lindley var. *rubrolabellum* (T. P. Lin) S. S. Ying.

Rhizome creeping, roots spreading. Pseudobulbs close, green, ovoid, 8–9 mm, 6–7 mm in diam., with a terminal leaf. Leaf sessile; blade oblong, 2.5–3.5 × 0.8–1 cm, leathery, apex acute. Scape from base of pseudobulb, 1–1.5 cm, with 2 or 3 sheaths; raceme shortened, umbel-like, densely 6–8–flowered; floral bracts ca. 2 mm, apex acute. Pedicel and ovary ca. 2.5 mm. Flowers not resupinate, whitish yellow. Sepals free, subequal, ovate, 3.5–4 × 1.6–2 mm, apex acuminate. Petals elliptic, ca. 1.5 × 0.6 mm, apex acute; lip recurved, red, ligulate, ca. 2.8 mm, hinged to end of column foot by a joint, adaxially minutely papillate. Column whitish yellow, short, ca. 1 mm; stelidia narrowly triangular-subulate, ca. 0.6 mm, slender; foot ca. 2 mm. Capsule ellipsoid, ca. 1 cm. Fl. Sep–Oct. 2n = 38*, 58*.

- Tree trunks in forests; 700–1500(–1800) m. Taiwan.


云北石豆兰 yun bei shi dou lan

Rhizome creeping, roots spreading. Pseudobulbs close, subovoid, 5–11 mm, 4–6 mm in diam., with a terminal leaf. Leaf sessile; blade oblong, 1.4–3 × 0.4–1.1 cm, subleathery, apical margins scabrous, apex acute. Scapes 2 or 3, from base of pseudobulb, ca. 1.3 cm, with 2 or 3 tubular sheaths 2–3 mm; raceme shortened, umbel-like, often 4–5-flowered; floral bracts ovate-lanceolate, 3–4 mm, apex acute. Pedicel and ovary 2.5–3 mm. Flowers not resupinate, yellowish, with red lip and apical part of sepalas. Sepals free, 3.3–4 × 1.6–2 mm, 3-veined, apex acuminate; dorsal sepal ovate; lateral sepals ovate-lanceolate, margins ± incurved. Petals ovate-lanceolate, 1.5–2 × ca. 0.7 mm, 1-veined, apex acute; lip attached to end of column foot, immobile, slightly recurved, ligulate, ca. 2.8 mm, fleshy, adaxially minutely papillate, grooved at base. Column ca. 1.3 mm, foot ca. 2 mm, with free part ca. 1 mm; stelidia conspicuous, subulate, ca. 0.8 mm; anther cap subglobose, apex mucronate. Capsule ovoid, ca. 6 mm, ca. 3 mm in diam. Fl. Jul.

- Tree trunks in forests; ca. 2000 m. SW Yunnan.


茎花石豆兰 jing hua shi dou lan

Rhizome creeping or straggling, stout, 3–4 mm in diam., branched, covered with scalelike sheaths, roots spreading. Pseudobulbs 4–12 cm apart from each other, cylindric or narrowly ovoid, 2–5 cm, 7–10 mm in diam., with a terminal leaf. Petiole 5–15 mm; leaf blade oblong, 5–10 × 1.4–2.7 cm, leathery, apex obtuse and slightly emarginate. Scape from node of rhizome or base of pseudobulb, erect, nearly as long as pseudobulb; raceme shortened, umbel-like, often 3–5–flowered; peduncle ca. 1 mm in diam., with several tubular sheaths; floral bracts ovate-lanceolate, ca. 4 mm, apex acute. Pedicel and ovary ca. 4 mm. Flowers small, yellowish green. Sepals free, subequal, narrowly lanceolate, 7–10 × ca. 1.5 mm, apex acuminate-caudate. Petals lanceolate, 5–7 × ca. 1.2 mm, entire, acuminate; lip attached to end of column foot by a mobile joint, lanceolate, 3–4 mm, grooved at adaxial base, apex acuminate. Column ca. 0.6 mm, foot ca. 2 mm, with free part ca. 0.5 mm; stelidia fusiform, ca. 1 mm; anther cap subglobose, apex mucronate. Capsule ovoid, ca. 1 cm, ca. 4 mm in diam. Fl. Jun–Jul, fr. Nov. 2n = 42.

Tree trunks or rocks in broad-leaved forests; 800–1800 m. SE Xizang [NE India].


短足石豆兰 duan zu shi dou lan

*Bulbophyllum clarkeanum* King & Pantling; *B. youngsayeanum* S. Y. Hu & Barretto; *Phyllorkis stenobulbon* (E. C. Parish & H. G. Reichenbach) Kuntze.

Rhizome creeping or straggling, 1–1.5 mm in diam., rooting from base of pseudobulbs, roots spreading. Pseudobulbs 1.5–3 cm apart from each other, ovoid-cylindric, usually 1–1.5 cm, 3–6 mm in diam., with a terminal leaf. Petiole 2–3 mm; leaf blade oblong, 1.5–3.3 × ca. 1 cm, leathery, apex obtuse-rounded and slightly emarginate. Scapes 1 or 2, from base of pseudobulb, filiform, 2–3.5 cm, slightly longer than pseudobulb; raceme shortened, umbel-like, often 2–4-flowered; peduncle with 3 or 4 tubular sheaths; floral bracts ovate-lanceolate, 2–3 mm, apex acute. Pedicel and ovary 2.5–3.5 mm. Flowers yellowish tinged with orange-yellow on lip and apical half of sepalas and petals. Sepals free, thickly textured; dorsal sepal narrowly lanceolate, 4.5–5 × 1.3–1.5 mm, apical margins ± incurved, apex long acuminate; lateral sepals similar to but slightly longer than dorsal sepal, base adnate to column foot forming a mentum. Petals ovate, 2.2–4 × 0.8–1 mm, thinly textured, entire, subobtuse; lip spreading horizontally, ligulate or ovate-lanceolate, ca. 2 × 0.5–0.7 mm, fleshy, grooved at base, abaxially densely finely papillate, adaxially often with 3 longitudinal ridges, lateral ridges often thickened and raised, apex rounded or subtruncate, slightly recurved. Column ca. 1.1 mm, stout; stelidia subulate, ca. 0.5 mm; foot slightly upcurved, 1–1.3 mm, with free part ca. 0.3 mm; anther cap subglobose, apex mucronate. Fl. May–Jun. 2n = 38.


密花石豆兰 mi hua shi dou lan

Stelis odoratissima Smith in Rees, Cycl. 34: Stelis no. 12. 1814; Bulbophyllum congestum Rolfe; B. hyacinthiodorum W. W. Smith; B. trichocephalum (Schlechter) Tang & F. T. Wang; B. trichocephalum var. wallongense Agrawala, Sabapathy & H. J. Chowdhery; Cirrhopetalum trichocephalum Schlechter.


密花石豆兰 mi hua shi dou lan


五指山石豆兰 wu zhi shan shi dou lan


广东石豆兰 guang dong shi dou lan


伞花石豆兰 san hua shi dou lan

*Bulbophyllum crahianum* Kerr.

Rhizome creeping or straggling, slender, ca. 1 mm in diam., branched, rooting from base of pseudobulbs, roots spreading. Pseudobulbs 2–5 cm apart from each other, subcylindric or narrowly ellipsoid-cylindric, 10–15 mm, 4–5 mm in diam., with a terminal petiole. Petiole 1–2 mm; leaf blade oblong, 2–3 × 0.5–1 cm, leathery, base contracted into petiole, apex obtuse-rounded and slightly emarginate. Scapes 1 or 2, from base of pseudobulb, erect, 3–4.5 cm, slender; raceme shortened, umbel-like, 4–10-flowered; peduncle ca. 0.5 mm in diam., with 3 or 4 narrowly tubular sheaths 4–6 mm; floral bracts lanceolate, 2–3 mm. Pedicel and ovary ca. 2 mm. Flowers slightly fragrant, orange. Sepals free, similar to each other, lanceolate, 7.5–8 × ca. 2 mm, apex long acuminate; dorsal sepal with slightly incurved apical margins; lateral sepals with distal margins incurved and tubular, base entirely adnate to column foot forming a subglobose mentum. Petals ovate-lanceolate, 3–3.5 × 1.4–2 mm, entire, shortly acute; lip recurved near apex, ovate-lanceolate in outline, ca. 2 mm, fleshy, glabrous, grooved at base, apex acute. Column ca. 1 mm; stelidia subulate, ca. 0.5 mm; foot upcurved, ca. 2 mm, with free part 0.8–1 mm; anther cap obtusely triangular. Fl. Jun.

Tree trunks in forests; 1300–2100 m. N Guangdong, S and W Yunnan [N Thailand, N Vietnam].


巨球组 ju qiu zu

*Diphyes* sect. *Macroaulia* Blume, Bijdr. 318. 1825 [“Macroaulia”].

Rhizome creeping; roots sprouting along rhizome, spreading; new shoots arising well above basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent or deciduous, thin to thick. Inflorescences arising near pseudobulb, solitary or a few in succession, 1-flowered. Pedicel with basal node distinctly more than 1 × diam. of pedicel above attachment of subtending lip glabrous adaxially, margins without auricles or lateral lobes, glabrous. Column: stigma not protruding at its base, foot distinct; diam., with a terminal leaf. Petiole 1–2 mm; leaf blade oblong, 2–3 × 0.5–1 cm, leathery, base contracted into petiole, apex obtuse-rounded and slightly emarginate. Scapes 1 or 2, from base of pseudobulb, erect, 3–4.5 cm, slender; raceme shortened, umbel-like, 4–10-flowered; peduncle ca. 0.5 mm in diam., with 3 or 4 narrowly tubular sheaths 4–6 mm; floral bracts lanceolate, 2–3 mm. Pedicel and ovary ca. 2 mm. Flowers slightly fragrant, orange. Sepals free, similar to each other, lanceolate, 7.5–8 × ca. 2 mm, apex long acuminate; dorsal sepal with slightly incurved apical margins; lateral sepals with distal margins incurved and tubular, base entirely adnate to column foot forming a subglobose mentum. Petals ovate-lanceolate, 3–3.5 × 1.4–2 mm, entire, shortly acute; lip recurved near apex, ovate-lanceolate in outline, ca. 2 mm, fleshy, glabrous, grooved at base, apex acute. Column ca. 1 mm; stelidia subulate, ca. 0.5 mm; foot upcurved, ca. 2 mm, with free part 0.8–1 mm; anther cap obtusely triangular. Fl. Jun.

Sixty-three provisionally accepted species: Nepal to the Philippines and Sulawesi; three species (one endemic) in China.

1a. Lip elliptic to ovate; lip margins rounded in proximal half .......................................................... 25. *B. ovalifolium*

1b. Lip with a triangular basal part and a distally swollen top part.

2a. Lip 1.5–2 mm, top part coarsely verrucose .............................................................................. 26. *B. catenarium*

2b. Lip ca. 4 mm, top part glabrous ................................................................................................. 27. *B. menghaiense*


卵叶石豆兰 luan ye shi dou lan

*Bulbophyllum ovalifolium* Blume, Bijdr. 318. 1825; *Bulbophyllum ovalilabellum* Seidenfaden.

Plants small. Rhizome creeping. Pseudobulbs contiguous, nearly flattened globose or ellipsoid, 4–10 × 5–8 mm, with a terminal leaf. Leaf subsessile or shortly petiolate; blade elliptic, 10–30 × 4.5–10 mm, leathery, base contracted, apex obtuse. Scapes from base of pseudobulb, erect, 32–60 mm, terminating in a solitary flower; peduncle filiform, 10–30 mm; floral bracts cupular, ca. 2 mm, apex acute. Pedicel and ovary 10–22 mm. Flowers bright yellow, with or without orange veins, or entirely orange; lip dark red to purple. Dorsal sepal elliptic, 3–6.4 × 2–2.5 mm, margins erose to ciliolate distally, apex acuminate; lateral sepals elliptic, 4–12 × 3–6 mm, margins entire to slightly erose, apical margin oblique, apex acuminate; petal ovate-lanceolate, 3–3.5 × 1.4–2 mm, entire, shortly acute; lip recurved near apex, ovate-lanceolate in outline, ca. 2 mm, fleshy, glabrous, grooved at base, apex acute. Column ca. 1 mm; stelidia subulate, ca. 0.5 mm; foot upcurved, ca. 2 mm, with free part 0.8–1 mm; anther cap obtusely triangular. Fl. Jun.

Tree trunks in forests; ca. 2400 m. Yunnan [Indonesia, Malaysia, Thailand].

This species was first recorded from China, without illustration, by X. H. Jin, H. Li, and D. Z. Li (Acta Phytotax. Sin. 45: 803–804. 2007), as *Bulbophyllum ovalilabellum*.


链状石豆兰 lian zhuang shi dou lan

Plants small. Rhizome creeping. Pseudobulbs contiguous, flattened globose to flattened cylindric, 1–7 × 1–3 mm, with a terminal leaf. Leaf subsessile; blade elliptic, 4–12 × 3–6 mm, leathery, base contracted, apex obtuse. Scapes from base of pseudobulb, erect, 25–55 mm, terminating in a solitary flower; peduncle filiform, 25–32 mm; floral bracts cupular, 1.5–2.2 mm, apex acute. Pedicel and ovary 10–22 mm. Flowers bright yellow, with or without orange veins, or entirely orange; lip dark red to purple. Dorsal sepal elliptic, 3–6.4 × 2–2.5 mm, margins erose to ciliolate distally, apex acuminate; lateral sepals elliptic, 5–9 × 3.5–5.5 mm, margins entire to slightly erose, apex acuminate. Petals ovate, 1–1.3 × 0.4–0.7 mm, obtuse, mar-
Rhizome creeping; roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thin to thick. Inflorescences solitary, or clustered on a lateral sympodium, arising near pseudobulbs, 1-flowered. Pedicel with basal node ± coinciding with attachment of subtending bract. Sepals free [lateral sepals often fused along lower margin in extralimital species], ± equally long, margins glabrous, 3-veined. Petals: margins ± glabrous, 1-veined; lip: margins without auricles or lateral lobes, margins glandular-papillose, adaxially glandular papillose. Column: stigma not protruding at its base, foot absent or nearly flattened globe, broader than long, 3–4 mm in diam., with a terminal leaf. Leaf subsessile; blade ovate-lanceolate or oblong-ligulate, 4–10 × 2–3 mm, leathery, base contracted, apex acute. Scapes 1 or 2, from base of pseudobulb, erect, 7–10 mm, terminating in a solitary flower; peduncle filiform, 5–7 mm; floral bracts cupular, ca. 1 mm, apex acute. Pedicel and ovary ca. 4 mm. Flowers yellowish with reddish brown veins; lip orange-red. Dorsal sepal ovate, 5.5–7 × ca. 1.8 mm, apex acute-acuminate; lateral sepals ovate-triangular, 6–7 × ca. 2 mm, apex acute. Petals obovate-oblong, ca. 2.2 × 1 mm, entire, obtuse; lip with a triangular basal part and a linear top part, ending in a somewhat swollen tip, ca. 4 × 1.3 mm, fleshy, proximally concave because of upturned margins, margins then folding downward and angular, adaxial surface glabrous. Column ca. 1 mm; stelidia narrowly fusiform, ca. 1.1 mm, lower margin rounded, without a tooth; foot ca. 1.5 mm, upcurved, with free part ca. 0.7 mm; anther cap subglobe, glabrous. Fl. Jul.–Aug.

● Tree trunks in forests; ca. 1500 m. S Yunnan.

● Tree trunks in dense forests or rocks along valleys; 400–600 m. SW Guangdong, Hainan, SE Yunnan [India, Thailand].

very short; anther: front margin projecting into a triangular beak, abaxially with a slight, rounded crest; pollinia 4, inner more than 1/2 as long as outer, all without appendages.

Twenty-nine provisionally accepted species: Indochina to W Pacific; one species (endemic) in China.


勐仑石豆兰 meng lun shi dou lan

Plants small. Rhizome creeping, slender, ca. 1 mm in diam., bearing roots from base of pseudobulbs. Pseudobulbs ca. 1 cm apart on rhizome, ovoid, 5–7 mm, 3–4 mm in diam., base ± prostrate on rhizome, with a terminal leaf. Petiole ca. 1 mm, ± twisted; leaf blade ovate, 8–13 × 5–6 mm, leathery, apex mucronate. Scape from base of pseudobulb or node of rhizome, erect, filiform, 5–7 mm, ca. 0.4 mm in diam., terminating in a solitary flower, with 1 sheath at base; floral bracts cupular, ca. 1 mm, membranous. Pedicel and ovary ca. 2 mm. Flowers very small, purplish red. Sepals free; dorsal sepal ovate, ca. 2.1 × 0.8 mm, apical margins slightly incurved, apex acumenate; lateral sepals obliquely ovate-lanceolate, ca. 2.2 × 1.1 mm, margins ± incurved above middle, apex acute. Petals elliptic, ca. 1 × 0.7 mm, apex acute; lip slightly recurved, subcultriform, 1.5 × 0.3 mm, fleshy, base connate to end of column foot, immobile, margins in basal half with glandular hairs. Column ca. 1 mm; foot ca. 0.8 mm, without distinct free part; stelidia inconspicuous; anther cap subglobose. Fl. Mar.

- Tree trunks in open forests in limestone areas; ca. 800 m. S Yunnan.

8. Bulbophyllum “Section 8”

穗花组 sui hua zu

Rhizome creeping; roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescence solitary, arising near pseudobulbs, an elongate to ± sub-umbellate raceme. Pedicel with basal node ± coinciding with attachment of subtending bract. Dorsal sepal with margin glabrous, papillose, erose, or ciliate; lateral sepals free, ca. as long or longer than dorsal sepal, with margins glabrous or slightly denticulate, 3–5-veined. Petals: margins in basal half with glandular hairs. Column ca. 1 mm; stigma protruding at its base or not, foot distinct; anther: front margin projecting into a triangular beak, abaxially with a slight, rounded crest; pollinia 4, inner more than 1/2 as long as outer, all without appendages.

Six provisionally accepted species: India to Indochina; three species (one endemic) in China.

1a. Inflorescence umbellate

b. Inflorescence racemose.

2a. Lip 3.5–4 mm

2b. Lip 2–2.8 mm


齿瓣石豆兰 chi ban shi dou lan

Bulbophyllum insulsum (Gagnepain) Seidenfaden; Cirrhopetalum insulsum Gagnepain.

Rhizome creeping, slender. Pseudobulbs close, subcylindric or bottle-shaped, 5–10 mm, 2–4 mm in diam., with a terminal leaf. Petiole 4–10 mm; leaf blade narrowly oblong or obovate-lanceolate, 3–4(-9) × 0.5–0.7(-1.4) cm, thinly leathery, base contracted into petiole, margin slightly undulate, apex subacute. Scape from base of pseudobulb, erect, to 55 cm; raceme shortened, umbel-like, often 2–6-flowered; peduncle ca. 0.5 mm in diam., sparsely with 2 or 3 tubular sheaths; floral bracts erect, narrowly lanceolate, 2–3.5 mm, apex acuminate. Pedicel and ovary longer than floral bracts. Flowers thinly textured, white tinged with purple. Dorsal sepal ovate-lanceolate, concave, 4.5 × 1.5–2 mm, abruptly contracted and thickened above middle, margin denticulate, apex acute; lateral sepals obliquely ovate-lanceolate, 5–5.5 × 1.5–2 mm, thickened above middle, base adnate to column foot forming a mentum, margins entire, apex ciliate. Petals connivent to sepals, ovate-lanceolate, ca. 3.5 × 1.5 mm, margins denticulate, apex long acuminate; lip recurved, lanceolate in outline, 2–2.5 mm, nearly fleshy, basal half grooved, base attached to end of column foot, immobile, margin entire, apex subacute. Column ca. 1.2 mm; stelidia filiform, ca. 0.5 mm; foot curved, ca. 1.5 mm, with free part ca. 0.5 mm, anther cap subglobose, apex narrowed and beaked, with a densely finely papillate ridge centrally. Fl. May–Aug.

Tree trunks in forests, rocks along valleys; ca. 800 m. Fujian, S Guangdong, Guangxi, SE Hunan, SW Jiangxi, W to SE Yunnan, Zhejiang [Vietnam].


黑脱石豆兰 mo tuo shi dou lan

Bulbophyllum yuanyangense Z. H. Tsi.

Pseudobulbs close, cylindric, 4–6.5 cm, 7–10 mm in diam., with a terminal leaf. Petiole 1–2 cm; leaf blade oblong, 13–21.5 × 3.5–4 cm, thickly leathery, base contracted into a petiole, apex acute. Scape from base of pseudobulb, erect, to 55 cm; raceme 9–10 cm, sparsely many flowered; peduncle 2–4 mm in diam., base with 2 or 3 tubular sheaths to 2.5 cm; floral bracts narrowly lanceolate, 5–8 mm, apex long acuminate. Pedicel and ovary 5–8 mm. Flowers green. Sepals free, ovate-lanceolate, ca. 15 × 6 mm, apex acuminate; dorsal sepal slightly shorter than
lateral sepals. Petals broadly elliptic, 3–4 × 2.5–3.5 mm, margins ciliate, apex obtuse; lip oblong-lanceolate, thickly fleshy, grooved at adaxial base, margin glandular-ciliate, apex obtuse and retuse. Column stout, base dilated, with wings enlarged at base; foot short; stelidia subulate. Fl. unknown. 2n = 38.

Tree trunks in forests; 2000–2100 m. SE Xizang, NW and SE Yunnan [Bhutan, NE India].


穗花卷瓣兰 sui hua juan ban lan


短序石豆兰 duan xu shi dou lan

Pseudobulbs ca. 2 cm apart from each other, subcylindric, 3–3.5 cm, 5–7 mm in diam., with a terminal leaf. Leaf subsesile; blade oblong, ca. 17 × 2.8 cm, apex acute. Scape from base of pseudobulb, arching, ca. 2 cm; raceme densely 6- or 7-flowered; peduncle with 3 scalelike sheaths ca. 6 mm; floral bracts lanceolate, ca. 6 mm, apex acuminate. Pedicel and ovary 4–5 mm. Flowers purplish red. Dorsal sepal ovate-elliptic, concave, ca. 5 × 3 mm, abaxially densely papillate, apex acute; lateral sepals ovate, nearly as large as dorsal sepal, abaxially densely papillate, their lower edges connate to each other, with free apex. Petals ovate, ca. 3 × 2 mm, margins irregularly denticulate, apex rounded; lip attached to end of column foot by a mobile joint, recurved, ligulate, ca. 3 mm, fleshy, glabrous, base with 1 central groove, with 2 cornute auricles on both basal sides, apex obtuse-rounded. Column ca. 2 mm; stelidia subulate, ca. 1.5 mm, foot with free part ca. 1.5 mm; anther cap tower-shaped, densely papillate. Fl. Jan.

● Tree trunks at forest margins along valleys; 1300–1400 m. S Yunnan.

34. Bulbophyllum rufinum H. G. Reichenbach, Xenia Orchid. 3: 44. 1881.

窄苞石豆兰 zhai bao shi dou lan

Rhizome stout, 5–6 mm in diam., with scalelike sheaths,
rooting from base of pseudobulbs. Pseudobulbs ca. 8 cm apart on rhizome, pale yellow when dried, ovoid-conic, 2.5–4 cm, 1.5–2 cm in diam., with a terminal leaf. Petiole ca. 1 cm; leaf blade oblong, 11–20.5 × ca. 3 cm, fleshy or thickly leathery, base contracted into petiole, apex obtuse and slightly emarginate. Scape from base of pseudobulb, slightly arching, ca. 10 cm, often slender; raceme ca. 8 cm, sparsely many flowered; peduncle with several sheaths at base; floral bracts narrowly oblong-lanceolate, 7–20 mm, apex obtuse. Flowers yellow, thinly textured. Dorsal sepal ovate-lanceolate, ca. 6 × 2 mm, apex acuminate; lateral sepals ovate-lanceolate, ca. 9 × 2.2 mm, their lower edges connate to each other, upper edges incurved, apex acute. Petals obliquely ovate-lanceolate, ca. 2 × 0.9 mm, apex caduclate; lip ligulate, ca. 3 × 1 mm, margins finely papillate, grooved at adaxial base, with 2 auricles on both basal sides, apex obtuse; auricles falcate, ca. 0.5 mm, apex acute. Column ca. 1.8 mm; stelidia subulate, ca. 1 mm; foot ca. 1.5 mm, with free part ca. 0.5 mm. Fl. Nov. 2n = 38.

Tree trunks in dense forests; 800–900 m. S Yunnan [Cambodia, Laos, Myanmar, Thailand, Vietnam].


团花石豆兰 tuan hua shi dou lan

Rhizome stout, 4–5 mm in diam., rooting from nodes of rhizome. Pseudobulbs 3–5 cm apart from each other, ovoid, ca. 2.5 cm, 1.3–2.3 cm in diam., 4-ribbed, with a terminal leaf. Petiole 1–1.5 cm; leaf blade oblong, 15–17.5 × 2–3.5 cm, slightly fleshy, base contracted into petiole, apex subobtuse. Scape from base of pseudobulb, suberect or arching; raceme 3–4 cm, densely many flowered; peduncle stout, with 3 or 4 large sheaths; floral bracts yellowish white, oblong, large, ca. 20 × 7–8 mm, papery, margins with purple spots. Pedicel and ovary yellowish white, ca. 3 mm; flowers enclosed in floral bracts, fleshy; sepals and petals yellowish white spotted with purple; lip yellowish with purple apex. Dorsal sepal oblong-concave, ca. 6.5 × 3.5 mm, entire, obtuse; lateral sepals obliquely ovate, ca. 8 × 4.5 mm, base adnate to column foot, their lower edges connate to each other, apex acute. Petals narrowly ovate, ca. 3 × 1.8 mm, entire, acute; lip ligulate, ca. 3.5 × 1.1 mm, narrowed toward obtuse apex, adaxial base grooved, with 2 auricles on both basal sides, both surfaces densely papillate. Column ca. 3 mm; foot ca. 2 mm; stelidia deltoid, ca. 1 mm; anther cap yellow, apex beaked. Fl. Jul. Fl. Apr. 2n = 38.

Tree trunks in evergreen broad-leaved forests; 1700 m. S Yunnan [N Thailand].


短耳石豆兰 duan er shi dou lan

Rhizome stout, 3–4 mm in diam., rooting from base of pseudobulbs. Pseudobulbs 2–30 cm apart from each other, ovoid or conic, 3–4 cm, 1.5–2.5 cm in diam., usually 4- or 5-veined, with a terminal leaf. Petiole 1–2 cm; leaf blade oblong, 12–17 × 2–3.5 cm, fleshy or thickly leathery, apex obtuse and slightly emarginate. Scape from base of pseudobulb, arching, 4–17 cm; raceme 2–7 cm, densely many flowered; peduncle stout, base with 3 or 4 sheaths; floral bracts pale brown, ovate-lanceolate, 5–7 mm, apex acute. Pedicel and ovary 4–5 mm. Flowers yellowish brown. Dorsal sepal oblong, concave, ca. 6 × 3 mm, apex obtuse-rounded; lateral sepals ovate-lanceolate, much longer than dorsal sepal, base ca. 3.5 mm wide, their lower edges connate and upper edges incurved near apex to form an ovoid sac, apex acute. Petals obliquely triangular, 2.5–3 × ca. 2 mm, decurrent to column foot, margins often irregularly denticulate, apex shortly caduclate; lip ligulate, longer than petals, fleshy, margin finely papillate, grooved at adaxial base, with 2 auricles on both basal sides; auricles subsquare, ca. 1 mm, apex truncate and slightly retuse. Column ca. 2 mm; stelidia deltoid, ca. 1 mm, apex acute; foot ca. 2 mm, with free part ca. 1 mm; anther cap glabrous. Fl. Jun–Sep. 2n = 38.

Tree trunks in evergreen broad-leaved forests; 1100–1200 m. S Yunnan [Bhutan, NE India, Malaysia (Penang), Myanmar, Thailand].


麦穗石豆兰 mai sui shi dou lan

Rhizome stout, 4–5 mm in diam., rooting from base of pseudobulbs. Pseudobulbs 4–6 cm apart on rhizome, ovoid, usually 2–3 cm, base ca. 1.5 cm in diam., with a terminal leaf. Petiole 0.5–1 cm; leaf blade oblong, 8–30 × 1.5–3.4 cm, leathery or fleshy, base contracted into petiole, apex slightly retuse. Scape from base of pseudobulb, arching, 5–13 cm; raceme 3–6 cm, densely many flowered; peduncle with 4 or 5 large sheaths ca. 2 cm; floral bracts ovate-lanceolate, 5–6 mm, apex acute. Pedicel and ovary ca. 5 mm. Flowers yellowish green, with brown venation on sepals and petals and black spots on lip. Dorsal sepal ovate, ca. 6 × 3 mm, entire, acute; lateral sepals obliquely ovate-lanceolate, ca. 7.5 × 4.2 mm, abaxially slightly papillate, base adnate to column foot, their lower edges connate forming an ovoid sac, apex acute. Petals slightly obliquely triangular, ca. 2.5 × 1.8 mm, slightly decurrent to column foot, apex cuspitate; lip ca. 6 mm, fleshy, centrally grooved in basal half, apex obtuse, recurved, margin papillate, with 2 auricles on both basal sides; auricles falcate, ca. 1.3 × 0.4 mm, apex apiculate and irregularly toothed. Column yellow, subcylindric, ca. 2 mm; foot ca. 3 mm, with free part ca. 1.5 mm; stelidia subulate, ca. 1 mm; anther cap glabrous. Fl. Jun–Sep. 2n = 38.

Tree trunks in evergreen broad-leaved forests; 1000–2000 m. S and SW Yunnan [Thailand, Vietnam].
ciliate, adaxially glabrous to hirsute, 3-veined. Petals: margins ciliate, 1-veined; lip: margins with a retrorse auricle immediately next to ligament, without lateral lobes, margins ciliate, adaxially glabrous, finely papillose, verrucose, finely pubescent or velutinous. Column: stigma protruding at its base or not, foot distinct; anther: front margin not projecting, abaxially with a rounded crest; pollinia 4, inner 1/2 as long as outer or longer, all without appendages.

Forty accepted species: India to the Philippines and Sulawesi; four species in China.


The New Guinean Bulbophyllum phreatiopse J. J. Vermeulen is better excluded.

1a. Sepals adaxially glabrous ................................................................. 38. B. secundum
1b. Sepals adaxially partly or entirely pubescent or pilose.

2a. Lip distally pouch-shaped, deeply concave adaxially ........................................ 39. B. scaphiforme
2b. Lip distally convex, flat, or only slightly concave.

3a. Lip 2.8–4.2 × 1–1.6 mm, abaxially convex toward tip ........................................ 40. B. nigripetalum
3b. Lip 5–7 × 2–3.3 mm, abaxially ± flat to slightly concave toward tip ................. 41. B. nigrescens


少花石豆兰 shao hua shi dou lan

Bulbophyllum subparviflorum Z. H. Ts & S. C. Chen; Phyllokris secunda (J. D. Hooker) O. Kuntze.

Rhizome 0.8–2 mm in diam., sections between pseudobulbs 0.5–1.8 cm. Pseudobulbs close, depressed conic to lenticular, 0.4–1 × 0.6–1.5 cm. Petiole 0.7–1.5 cm; leaf blade elliptic, 3.2–10 × 0.4–1 cm, obtuse to acute. Inflorescence an elongate, rather lax raceme, erect to spreading, 28–54 cm, 23–33-flowered; peduncle 14–25 cm; rachis not thickened, 14–22 cm, glabrous; floral bracts triangular, 3–4 × 2 cm, acute. Flowers spreading to reflexed, second, not fully opening, many simultaneously, blackish purple, yellowish toward base, or yellowish with blackish purple veins, margins, and scattered spots, lip blackish purple with green or yellowish ridges adaxially. Pedicel and ovary 5.5–9 mm. Dorsal sepal porrect to recurved, ovate, 4.5–7.5 × 2–4.2 mm, rather thin, abaxially glabrous, adaxially pubescent, base rather broadly attached, margin ciliate, apex acute; lateral sepals recurved, elliptic to ovate, 6–8 × 2.5–4.2 mm, acute to acuminate, otherwise as dorsal sepal. Petals ± porrect, spatulate, 2–2.5 × 0.8–1.5 mm, surface pubescent distally, base broadly attached; rather thick with a thick top, margins ciliate distally, apex acute to acuminate; lip recurved in proximal half, pouch-shaped distally, obovate in outline, 4.8–5.5 × 1.8–3.2 mm, rather thin; abaxially with a wide, rounded ridge near base, surface otherwise convex, pubescent, or only so in front of basal ridge and toward margins; adaxially somewhat concave and with a median slit reaching up to ca. 1/3 of lip near base, with 2 distinct, obdurate ridges diverging proximally, running ± parallel over ca. 3/4 of lip, and ending in some irregularly shaped cali, surface with irregular, radiating furrows distally but otherwise glabrous, margins ciliate, apex rounded. Column 1–1.6 mm; stelidia triangular, 0.4–0.7 mm, acute. Fl. Mar–May, Jul.

Epiphytic; 1100–1400 m. Yunnan [Thailand, Vietnam].


黑瓣石豆兰 hei ban shi dou lan

Rhizome: sections between pseudobulbs 1.5–2.5 cm. Pseudobulbs close, ovoid or broadly conic, 1.5–2.5 × 1–3 cm. Petiole 1–1.5 cm; leaf blade ± elliptic, 7–9.2 × ca. 1.8 cm, ?subacute. Inflorescence an elongate, rather lax raceme, erect to spreading, 15–49 cm, 13–32-flowered; peduncle 8–25 cm; bracts ca. 5, longest 4–9 cm; rachis not thickened, 5.5–25 cm, glabrous; floral bracts triangular, 1.8–4.5 × 1–2 mm, acuminate. Flowers spreading to reflexed, second, not fully opening, many simultaneously, cream-colored or yellow,
near base often with blackish purple veins, sometimes blackish purple distally, or blackish purple all over, lip blackish purple, often yellowish at base. Pedicel and ovary 3.8–6.5 mm. Dorsal sepal porrect to recurved, ovate to triangular, 3.1–6 × 1.3–2.2 mm, rather thin, abaxially glabrous, adaxially pubescent, base rather narrowly attached, margin ciliate, apex obtuse to acute; lateral sepals recurved, 3–6 × 2.2–3 mm, otherwise as dorsal sepal. Petals ± porrect, elliptic to obovate or spatulate, 1.6–2.2 × 0.5–1 mm, rather thin with a thick tip, surface pubescent distally, base broadly attached, margins ciliate distally, apex obtuse to acuminate; lip recurved in proximal half, obovate to elliptic, 2.8–4.2 × 1–1.6 mm, thick and fleshy; abaxially with a wide, rounded ridge near base, surface elsewhere convex, partly or entirely velutinous; adaxially somewhat concave near base, with 3 ridges: 2 distinct, obtuse ridges diverging proximally, continuing over 1/3–3/4 of lip, and a thin, low, sometimes inconspicuous median ridge continuing over ca. 1/2 of lip, surface glabrous, finely velutinous toward margins, margins ciliate, apex rounded to obtuse. Column 1–1.3 mm; stelidia triangular, 0.3–0.6 mm, acute. Fl. Mar–May.

Epiphytic or lithophytic in forests; 1000–1300 m. Yunnan [Thailand].


狭瓣石豆兰 gou geng shi dou lan

Bulbophyllum anguste-ellipticum Seidenfaden.

Rhizome 2–3.5 mm in diam., sections between pseudobulbs 0.6–2.5 cm. Pseudobulbs close, ovoid or broadly conic, 0.8–1.7 × 1–2 cm. Petiole 0.8–2 cm; leaf blade elliptic to ovate, 4.2–10 × 0.7–1.1 cm, acuminate. Flowers spreading to reflexed, secund, not fully opening, many simultaneously, yellowish, stained with blackish purple and with blackish purple veins, sometimes entirely blackish purple adaxially and pale reddish brown abaxially, petals and lip almost entirely blackish purple, petals proximally sometimes yellow with a blackish purple vein. Pedicel and ovary 5–11 mm. Dorsal sepal porrect to recurved, ovate to triangular, 5.5–9.5 × 1.8–3.2 mm, rather thin, adaxially pubescent, abaxially glabrous, base rather narrowly attached, margins ciliate, apex obtuse to acute; lateral sepals recurved, 6.5–10.5 × 2.7–4.2 mm, otherwise as dorsal sepal. Petals ± porrect, elliptic to obovate or spatulate, 1.5–2.5 × 0.8–1.5 mm, rather thin with a thick top, surface pubescent distally, base broadly attached, margins ciliate distally, apex obtuse to acuminate; lip recurved in proximal half, obovate to elliptic, 5–7 × 2–3.3 mm, rather thin; abaxially with a wide, rounded ridge near base, surface elsewhere concave to flat, glabrous or partly pubescent; adaxially somewhat concave near base and with a median slit or furrow reaching up to 1/3–2/3 of lip, with 2 distinct, obtuse ridges diverging proximally, continuing over 1/3–3/4 of lip, and often ending in a patch of irregularly shaped verrucae, surface glabrous, margin ciliate, apex rounded to obtuse. Column 1.4–1.8 mm; stelidia triangular, 0.5–0.8 mm, acute. Fl. Jan–May, Jul.

Epiphytic or lithophytic in deciduous or evergreen forests; 700–1800 m. S Yunnan [Thailand, Vietnam].

Chinese records of Bulbophyllum nigrescens could be based on misidentified plants.


狭瓣组 xia ban zu

Rhizome creeping; roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescence solitary, arising near pseudobulbs, an elongate raceme. Pedicel with basal node well above attachment of subtending bract. Sepals free, margins glabrous, adaxially glabrous, 3-veined. Petals: margins erose, 1-veined; lip: margins without auricles or lateral lobes, margins glabrous, adaxially pubescent. Column: stigma not fully opening, many simultaneously, yellowish, stained with blackish purple and with blackish purple veins, sometimes entirely blackish purple adaxially and pale reddish brown abaxially, petals and lip almost entirely blackish purple, petals proximally sometimes yellow with a blackish purple vein. Pedicel and ovary 5–11 mm. Dorsal sepal porrect to recurved, ovate to triangular, 5.5–9.5 × 1.8–3.2 mm, rather thin, adaxially pubescent, abaxially glabrous, base rather narrowly attached, margins ciliate, apex obtuse to acute; lateral sepals recurved, 6.5–10.5 × 2.7–4.2 mm, otherwise as dorsal sepal. Petals ± porrect, elliptic to obovate or spatulate, 1.5–2.5 × 0.8–1.5 mm, rather thin with a thick top, surface pubescent distally, base broadly attached, margins ciliate distally, apex obtuse to acuminate; lip recurved in proximal half, obovate to elliptic, 5–7 × 2–3.3 mm, rather thin; abaxially with a wide, rounded ridge near base, surface elsewhere concave to flat, glabrous or partly pubescent; adaxially somewhat concave near base and with a median slit or furrow reaching up to 1/3–2/3 of lip, with 2 distinct, obtuse ridges diverging proximally, continuing over 1/3–3/4 of lip, and often ending in a patch of irregularly shaped verrucae, surface glabrous, margin ciliate, apex rounded to obtuse. Column 1.4–1.8 mm; stelidia triangular, 0.5–0.8 mm, acute. Fl. Jan–May, Jul.

Epiphytic or lithophytic in deciduous or evergreen forests; 700–1800 m. S Yunnan [Thailand, Vietnam].

Chinese records of Bulbophyllum nigrescens could be based on misidentified plants.

Ten accepted species: Himalayas to the Philippines, Sulawesi, and New Guinea; one species in China.


狭瓣石豆兰 xian ban shi dou lan

Drymoda gymnopus (J. D. Hooker) Garay, Hamer & Siegerist; Phyllorkis gymnopus (J. D. Hooker) O. Kuntze.

Rhizome 2.5–4.5 mm in diam., sections between pseudobulbs 3–22 cm; bracts densely spotted with purplish brown when young, soon withering, including veins. Pseudobulbs distant, ovoid, 1.2–4 × 0.8–1.5 cm. Petiole 1–3.5 cm; leaf blade elliptic, 4.8–17 × 1–3.2 cm, obtuse. Inflorescence a lax raceme, erect to spreading, 7–23 cm, 7–28-flowered; peduncle 1.8–7 cm; bracts 4–6, longest 5–17 mm; rachis 5–17 cm; floral bracts ovate to triangular, 1.8–3.5 × 1–1.8 mm, acute. Flowers resupinate; white, pale greenish white, or yellowish, lip yellow or orange, column white to orange. Pedicel and ovary 8–10 mm. Dorsal sepal ovate to triangular, 4.5–7 × 1.4–2.2 mm, thin, surface glabrous or slightly papillose toward tip abaxially, base narrowly attached, margins entire, apex emarginate, rounded to obtuse; lateral sepals falcate, 5–8 × 1.4–2.5 mm, obtuse, otherwise as dorsal sepal. Petals recurved, falcate, linear with a wide base, 3.5–5 × 0.4–0.7 mm, thin, base broadly attached, margins erose toward tip, apex obtuse to acuminate; lip recurved slightly below middle, ligulate, 2.4–0.8–1.3 mm, thick, surface glabrous, abaxially with a distinct, deeply emarginate ridge up to ca. 1/3 of length of lip, adaxially concave near base, often with

1. Dorsal sepal slightly shorter than lateral sepals ............................................................. 43. B. violaceolabellum
1b. Dorsal sepal 1.5–6 × shorter than lateral sepals.
2a. Lateral sepals 2.5–6 cm.
3a. Leaf 2.5–6 × 1–1.5 cm; flowers white ................................................................. 44. B. caudatum
3b. Leaf 8–25 × 2.2–6 cm; flowers purple, deep yellow, or yellowish white striped with reddish brown or tinged with purplish red.
4a. Stelidia distally widened, tip obtuse, erose or bidenticate.
5a. Petals truncate to emarginate and mucronate; lateral sepals ca. 60 mm ....................... 45. B. delitescens
5b. Petals rounded and mucronate; lateral sepals 25–37 mm ........................................ 46. B. macraei
4b. Stelidia distally tapering, acute.
6a. Median sepal shortly mucronate; petals truncate and mucronate, 5–7-veined ............ 47. B. funingense
6b. Median sepal caudate with a thread ca. 3 mm; petals tapering, caudate, 3-veined ........ 48. B. tiangui
2b. Lateral sepals less than 2.5 cm.
7a. Scape nearly as long as or sometimes slightly longer than pseudobulb.
8a. Rhizomes suberect or ascending; lateral sepals forming a conic tube .......................... 49. B. unciniferum
8b. Rhizomes creeping; lateral sepals forming a slipper-shaped synsepal ........................ 50. B. spathulatum
7b. Scape 3–7 × as long as pseudobulb.
9a. Lip densely hirsute on margin and abaxial surface ............................................. 62. B. gongshanense (B. “Section 13”)
9b. Lip margin and abaxial surface glabrous.
10a. Lip narrowed, drawn-out and somewhat thinly cylindric in apical half.
11a. Lip hooked-revolute at apex; anther cap entire apically ................................. 51. B. japonicum
11b. Lip not hooked-revolute at apex; anther cap with comlike teeth apically ............ 52. B. fordii
10b. Lip not thinly cylindric in apical half.
12a. Lateral sepals free.
13a. Petals acute ........................................................................................................ 53. B. elatum
13b. Petals rounded to obtuse.
14a. Column without wings along lower margins ............................................. 54. B. rolfei
14b. Column with deltoid to triangular, rounded to acute wings along lower margins, near base.
15a. Column with acute wings along lower margins ........................................ 55. B. guttulatum
15b. Column with rounded wings along lower margins ...................................... 56. B. umbellatum
12b. Lateral sepals adhering or connate along their upper and/or lower edges.
16a. Pseudobulbs globose; leaves elliptic-oblong, ca. 1 cm ............................... 57. B. sphaericum
16b. Pseudobulbs ovoid-conic to narrowly ovoid; leaves oblong or ovate-lanceolate, 1.6–8 cm.
17a. Lateral sepals papillose abaxially.
18a. Lateral sepals ca. 7 mm; scape ca. 2 cm .................................................. 58. B. bomiense
18b. Lateral sepals 14–27 mm; scape 3–7 cm .................................................... 59. B. farreri
17b. Lateral sepals glabrous.
19a. Lateral sepals 11–21 mm; flowers yellow, ± with purple-red veins or becoming reddish .............................................. 60. B. retusiusculum

Bulbophyllum sect. Umbellata Bentham & J. D. Hooker, Gen. Pl. 3: 503. 1883 ['“Umbellatae”'].

Bulbophyllum violaceolabellum (Lindley) King & Pantling.


尾萼卷瓣兰  
Bulbophyllum caudatum

45. Bulbophyllum delitescens Hance, J. Bot. 14: 44. 1876.

直唇卷瓣兰  
Bulbophyllum delitescens


乌来卷瓣兰  
Bulbophyllum macraei


富宁卷瓣兰  
Bulbophyllum funingense

19b. Lateral sepals 5–10 mm; flowers deep or dark red, usually ± with deep-colored spots or veins. ........................................ 61. B. tigridendu

*Rocks along valleys; ca. 1000 m. SE Yunnan [N Vietnam].


Rocks in forests; 900–1000 m. NW Guangxi (Leye).


*Rocks in forests; 1100–1500 m. S Yunnan [N Thailand].


*Rocks in broad-leaved forests; 800–900 m. S Yunnan [India (Sikkim), Laos, Myanmar, Thailand, Vietnam].
Buitenzorg, sér. 2, 8: 24. 1912.

Column ca. 1.5 mm; foot ca. 1 mm, with free part ca. 0.5 mm; thinly cylindric in distal half, apex dilated and hooked-recurved. Lip recurved, ligulate, ca. 2 mm, fleshy, narrowed and edges connivent to each other, apex acuminate. Petals subpatulate, ca. 2 × 1.5 mm, entire, obтuse-rounded; lip recurved, ligulate, ca. 2 mm, fleshy, narrowed and thinly cylindric in distal half, apex dilated and hooked-revolute. Column ca. 1.5 mm; foot ca. 1 mm, with free part ca. 0.5 mm; stelidia subulate, ca. 0.7 mm; anther cap subgloboso. Fl. Jun. 2n = 40.

Tree trunks in broad-leaved forests, humid rocks along valleys; 600–1500 m. N Fujian, Guangdong, and NE Guangxi, SW Hunan, Taiwan [Japan].


狭唇卷瓣兰 xia chun juan ban lan


Rhizome stout. Pseudobulbs 2–9 cm apart from each other, narrowly ovoid, 2–3.5 cm, with a terminal leaf. Petiole ca. 2 cm; leaf blade narrowly oblong, ca. 8 × 3 cm, leathery, base contracted into petiole, apex obtuse and slightly emarginate. Scape from base of pseudobulb, erect, 5–10 cm; umbel many flowered; peduncle ca. 1.2 mm in diam., sparsely with 3 tubular sheaths; floral bracts lanceolate, 3–5 mm, apex acute. Petal and ovary 4–7 mm. Flowers pale yellow, tinged with purple. Dorsal sepal ovate-oblong, cymbiform, ca. 7 × 4 mm, apex obtuse; lateral sepals narrowly oblong, ca. 1 cm, base adnate to column foot, twisted near base, with their upper edges connate in apical half. Petals narrowly oblong, ca. 3.5 × 1.5 mm, entire, acute; lip slightly recurved, narrowly lanceolate-cylindric, ca. 4 mm, fleshy, grooved at adaxial base, margin decurved, entire, apex subacute. Column ca. 2 mm, with suborbicular, enlarged wings at middle; foot ca. 3.5 mm, with free part upcurved; stelidia subulate, ca. 1 mm; anther cap with comlike teeth at apex. Fl. Aug.


Rhizome stout. Pseudobulbs 2–9 cm apart from each other, narrowly ovoid, 2–3.5 cm, with a terminal leaf. Petiole ca. 2 cm; leaf blade narrowly oblong, ca. 8 × 3 cm, leathery, base contracted into petiole, apex obtuse and slightly emarginate. Scape from base of pseudobulb, erect, 5–10 cm; umbel many flowered; peduncle ca. 1.2 mm in diam., sparsely with 3 tubular sheaths; floral bracts lanceolate, 3–5 mm, apex acute. Petal and ovary 4–7 mm. Flowers pale yellow, tinged with purple. Dorsal sepal ovate-oblong, cymbiform, ca. 7 × 4 mm, apex obtuse; lateral sepals narrowly oblong, ca. 1 cm, base adnate to column foot, twisted near base, with their upper edges connate in apical half. Petals narrowly oblong, ca. 3.5 × 1.5 mm, entire, acute; lip slightly recurved, narrowly lanceolate-cylindric, ca. 4 mm, fleshy, grooved at adaxial base, margin decurved, entire, apex subacute. Column ca. 2 mm, with suborbicular, enlarged wings at middle; foot ca. 3.5 mm, with free part upcurved; stelidia subulate, ca. 1 mm; anther cap with comlike teeth at apex. Fl. Aug.

- N Guangdong, SW Yunnan.


高茎卷瓣兰 gao jing juan ban lan

*Cirrhopedatum elatum* J. D. Hooker, Fl. Brit. India 5: 775. 1890.

Pseudobulbs contiguous, cylindric, ca. 4 cm, ca. 6 mm in diam., with a terminal leaf. Petiole ca. 2 cm; leaf blade oblong, ca. 16 × 2.2 cm, leathery, apex obtuse and slightly emarginate. Scape from base of pseudobulb, erect, 15–18 cm; umbel many flowered; peduncle ca. 2 mm in diam., with 3 or 4 sheaths; floral bracts lanceolate, shorter than pedicel and ovary. Flowers dark yellow. Dorsal sepal ovate, ca. 13 × 7 mm, apex acute; lateral sepals narrowly lanceolate, ca. 3 × as long as dorsal sepal, abaxially finely papillate, base twisted, their upper edges connate to each other, apex acuminate. Petals obliquely ovate-triangular, ca. 4 mm, entire, acute; lip recurved, ovate-lanceolate, fleshy, grooved at base, apex acute. Column stout, with deltoid, rounded wings along lower margins; foot with free part ca. 5 mm; stelidia slender, slightly hooked. Fl. unknown.

Tree trunks in evergreen broad-leaved forests, rocks along valleys; 2200–2500 m. S Xizang, NW Yunnan [Bhutan, India, Nepal, Vietnam].


若氏卷瓣兰 ruo shi juan ban lan

*Phyllokris rolfei* Kuntze, Revis. Gen. Pl. 2: 676. 1891, based on *Cirrhopedatum rolfei* Lindley (1830); *Bulbophyllum rolfei* (King & Pantling) Seidenfaden; *B. parvulum* (J. D. Hooker) J. J. Smith (1912), not Lindley (1830); *C. dyerianum* King & Pantling.

Rhizome creeping, 0.8–1 mm in diam. Pseudobulbs 0.1–2.4 cm apart from each other, ovoid, 0.7–1.5 cm, 3–9 mm in diam., ribbed, with a terminal leaf. Petiole 1–2 cm; leaf blade elliptic-oblong, 2–3.5 × 0.8–1.2 cm, leathery, base contracted into petiole 3–5 mm, apex (sub-)acute. Scape from base of pseudobulb, erect, 4.5–5.5 cm, slender; umbel 2–4 flowered; peduncle ca. 1 mm in diam., with a few tubular sheaths; floral bracts narrowly lanceolate, 6–8 mm, apex acuminate. Pedicel and ovary 4–7 mm. Flowers yellow to red-purple, spotted deep purple; lip deep red-purple. Dorsal sepal elliptic-ovate, concave, 5–6 × 1.5–2 mm, apex acute; lateral sepals free, obliquely ovate-triangular, 10–16 × 2–3 mm, ± narrowly rounded and somewhat twisted near base so that upper edges face one another, apex acute. Petals elliptic-ovate, ca. 4 × 1.2 mm, obtuse, margin entire; lip recurved, ovate in outline, 3–4 × 0.5–0.8 mm, adaxially finely papillose toward top, base dilated and attached to end of column foot, apex rounded. Column 1–1.5 mm, without wings along lower margins; foot ca. 2.5 mm, with free part ca. 2 mm, upcurved; stelidia filiform, ca. 1 mm; anther cap subgloboso. Fl. Aug.

2400–2500 m. W Yunnan (Fugong) [Bhutan, India, Nepal].

This species was first recorded from China by X. H. Jin, H. Li, and D. Z. Li (Acta Phytotax. Sin. 45: 803. 2007), whose description deviates from *Bulbophyllum rolfei* in having lateral sepals fused along the upper margins and petals erose. Their record could refer to a different species.


钻齿卷瓣兰 zuan chi juan ban lan


Rhizome creeping, ca. 3 mm in diam. Pseudobulbs ca. 1 cm apart from each other, ovoid-conic or narrowly ovoid, 2–2.5 cm, 7–10 mm in diam., ribbed, with a terminal leaf. Petiole 1–2 cm; leaf blade elliptic-oblong, 7–14 × ca. 3 cm, leathery, base contracted into petiole, apex obtuse-rounded. Scape from base of pseudobulb, erect, 10–15 cm, slender; umbel often 2- or 3-flowered; peduncle ca. 1 mm in diam., sparsely with 2 or 3 tubular sheaths; floral bracts ovate-lanceolate, ca. 5 mm, apex acuminate. Pedicel and ovary ca. 2.5 mm. Flowers yellow,
Bulbophyllum sphaericum


球茎卷瓣兰 qiú jìng juàn bān lán

Rhizome creeping, ca. 1.5 mm in diam., branched, rooting from base of pseudobulbs. Pseudobulbs ca. 1 cm apart from each other, globose, 7–8 mm in diam., with 1 leaf at apex. Leaf sessile; blade abaxially purplish red, adaxially pale green, elliptic-oblong, ca. 10 × 6–8 mm, thickly leathery, margin slightly recurved, apex retuse. Scapes from base of pseudobulbs, erect, much longer than leaf; umbel 4- or 5-flowered; floral bracts lanceolate, 3.8–5 × 1.6–3 mm, base twisted, their upper and lower edges connate to each other, apex recurved, ligulate, ca. 3 mm, fleshy, base grooved, attached to end of column foot by a mobile joint. Column ca. 2 mm; stelidia subglobose, 0.5 mm; foot upcurved, with free part ca. 1 mm. Fl. Sep–Dec.

- Tree trunks in evergreen broad-leaved forests, Sichuan, SW Yunnan.

58. Bulbophyllum bomiense


麻栗坡卷瓣兰 mǎ lí pō juàn bān lán

Rhizome creeping, ca. 1 mm in diam., sheathing when young. Pseudobulbs 1–2 cm apart from each other, ovoid-conic, 7–10 cm, ca. 5 mm in diam., with a terminal leaf. Leaf subsessile; blade oblong, 1.7–3.5 × 0.5–0.7 cm, leathery, margin slightly undulate, apex obtuse and slightly emarginate. Scapes from base of pseudobulb, erect, ca. 2 cm, slender; umbel 2–4-flowered; peduncle with 3 tubular sheaths ca. 7 mm; floral bracts ovate-lanceolate, ca. 3 mm. Pedicel and ovary ca. 4 mm. Flowers deep red or purplish, spotted with deep purple on petals, thickly textured. Dorsal sepal oblong, concave, ca. 7 × 2.5 mm, distal margins densely finely papillate, abaxially sparsely papillate; lateral sepals nearly falcate-lanceolate, ca. 7 mm, abaxially densely papillate especially in apical half, base adnate to column foot, apical margins incurved, twisted near base, their upper and lower edges connate to each other, apex obtuse. Petals subelliptic, ca. 4 × 2.5 mm, margins densely finely papillate, apex rounded; lip slightly recurved, subligulate, ca. 3 mm, fleshy, base grooved, attached to end of column foot by a mobile joint, laterally with 2 longitudinal lamellae close to both margins. Column ca. 1.2 mm, winged; foot ca. 1.5 mm, with free part ca. 0.8 mm; stelidia sharply dentate, 0.5 mm; another cap densely finely papillate, apex with 1 small globose projection. Fl. Jul.

- Rocks in evergreen broad-leaved forests; 2000–2100 m. SE Xizang, NW Yunnan.

59. Bulbophyllum farreri


麻栗坡卷瓣兰 mǎ lí pō juàn bān lán


Rhizome creeping, rooting below pseudobulbs. Pseudobulbs clustered, ovoid-globose, 9–12 mm, 6–8 mm in diam., with 1 leaf at apex. Leaf subsessile; blade 20–70 × 6–22 mm, thickly leathery, apex obtuse and emarginate. Scapes at base of pseudobulbs, spreading, ca. as long as leaves; umbel 5–9-flowered; floral bracts lanceolate, 5–6 mm. Pedicel and ovary 5.5–6.5 mm. Dorsal sepal and petals yellowish with 3 dark purple veins, lateral sepals yellowish with purplish spots and veins. Dorsal sepal ovate, 3.8–5 × 1.6–3 mm, margin entire, apex obtuse; veins, lateral sepals yellowish with purplish spots and veins. Dorsal sepal ovate, 3.8–5 × 1.6–3 mm, margin entire, apex obtuse; petals oblong, 1.7–3.5 × 0.5–0.7 cm, leathery, margin slightly undulate, apex obtuse and slightly emarginate. Base twisted, their upper and lower edges connate to each other, margins incurved, apex cuspidate. Petals elliptic, ca. 3 × 2 mm, entire, obtuse-rounded; lip recurved, lanceolate, ca. 3.5 mm, fleshy, base grooved, attached to end of column foot by a mobile joint. Column ca. 2 mm; stelidia subglobose, 0.5 mm; foot upcurved, with free part ca. 1 mm. Fl. Sep–Dec.

- Tree trunks in evergreen broad-leaved forests, Sichuan, SW Yunnan.

Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescences arising near pseudobulbs, solitary, 1- or ± subumbellate raceme. Pedicel with basal node ± coinciding with attachment of subtending bract. Sepals 3–7-veined; dorsal sepal with margins glabrous to erose or denticulate (with glandular appendages in

B. bicolor

that of

P. retusiusculum


The type of Bulbophyllum malipoense is smaller in all parts than that of B. farreri, but otherwise the two are not different.


Bulbophyllum flavisepalum Hayata; B. oreogenes (W. W. Smith) Seidenfaden; B. retusiusculum var. oreogenes (W. W. Smith) Z. H. Ts.; Cirrhopetalum flavisepalum (Hayata) Hayata; C. oreogenes W. W. Smith; C. retusiusculum (H. G. Reichenbach) Hemsley; Phyllorkis retusiuscula (H. G. Reichenbach) Kuntze.

Rhizome creeping, ca. 2 mm in diam., rooting from base of pseudobulbs. Pseudobulbs often 1–3 cm apart from each other, rarely close, ovoid-conic or narrowly ovoid, 5–25 mm, 4–13 mm in diam., with a terminal leaf. Petiole short; leaf blade oblong or ovate-lanceolate, 1.6–8 × 0.4–1.8 cm, leathery, base contracted into petiole, apex obtuse and slightly emarginate. Scape from base of pseudobulb, suberect, to 14 cm, slender; umbel many flowered; floral bracts small, 3–5 mm. Pedicel and ovary 3–7 mm, slender. Flowers yellow with reddish veins or becoming reddish. Dorsal sepal oblong-ovate or suboblong, 3–3.5 × 1.5–2 mm, abaxially sometimes sparsely papillate in basal half, margins entire or scabrid, apex truncate and emarginate; lateral sepals narrowly lanceolate or linear, 11–21 × 1.5–3 mm, abaxially sometimes sparsely papillate, twisted near base, their upper and lower edges connate to each other forming an ellipsoid or horn-shaped synsepal. Petals nearly oblong or ovate, 2.5–3 × 1.8 mm, base ca. 2/5 width adnate to column foot, margins entire or scabrid, apex obtuse-rounded; lip recurved, ligulate, ca. 3 mm, fleshy, base grooved, attached to end of column foot by a mobile joint, apex obtuse. Column 1.5–2 mm, with wings slightly dilated at base; foot ca. 2.5 mm, with free part ca. 1 mm, upcurved; stelidia subtriangular, ca. 0.8 mm; anther cap slightly finely papillate. Fl. Sep.–Dec. 2n = 38.

Tree trunks or rocks in forests; 500–2800 m. S Gansu, Guizhou, Hainan, Hubei, Hunan, Sichuan, Taiwan, S and SE Xizang, W to SE Yunnan [Bhutan, NE India, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam].


Bulbophyllum retusiusculum H. G. Reichenbach var. tigridum (Hance) Z. H. Ts.; Cirrhopetalum tigridum (Hance) Rolfe.

Rhizome stout. Pseudobulbs 1–3 cm apart from each other, ovoid, usually 10–20 mm, 6–7 mm in diam., with a terminal leaf. Leaf shortly petiolate; blade oblong, varying in size, usually 22–25 × 4.5 mm, leathery. Scape base of pseudobulb, erect, filiform, 10–14 cm, much longer than leaf; umbel 5–8-flowered; floral bracts small, 3–5 mm. Pedicel and ovary 3–7 mm, slender. Flowers small, dark red with purple-red veins. Dorsal sepal ovate, 3.3–5 × 1.5–2 mm, apex obtuse; lateral sepals lanceolate or linear, 5–7 × ca. 2 mm, abaxially glabrous, their upper and lower edges connate to each other forming a horn-shaped tube; lip recurved, ligulate, fleshy, attached to end of column foot by a mobile joint. Column 1–1.5 mm; foot ca. 2 mm, with free part ca. 0.8 mm. Fl. Sep.

S Guangdong.

13. Bulbophyllum “Section 13”

中華組 zhong hua zu

Rhizome creeping or straggling; roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescences arising near pseudobulbs, solitary, 1-flowered or a ± subumbellate raceme. Pedicel with basal node ± coinciding with attachment of subtending bract. Sepals 3–7-veined; dorsal sepal with margins glabrous to erose or denticulate (with glandular appendages in Bulbophyllum chondriophorum, ciliolate in

B. bicolor

, lateral sepals twisted inward near base, with upper margins approaching or meeting and connate, with margins glabrous. Petals: margins glabrous, erose to denticulate (with glanular appendages in B. chondriophorum), 1–3-veined; lip: margins without auricles or lateral lobes, margins otherwise ± glabrous (ciliolate in B. gongshanense), adaxially ± glabrous (hirsute in B. gongshanense). Column: stigma not protruding at its base, foot distinct; anther: front margin projecting or not, abaxially with or without a low, rounded crest; pollinia 4, inner ca. 1/2 as long as outer or longer, all without appendages.

Twenty-six provisionally accepted species: India to IndoChina, Java to the Philippines; ten species (five endemic) in China.

1a. Lip densely hirsute on margin and abaxial surface ................................................................. 62. B. gongshanense

1b. Lip glabrous.

2a. Either dorsal sepal or petals entire.

3a. Margin of dorsal sepal red ciliate; petals entire along margin, 5-veined ................................. 63. B. bicolor

3b. Margin of dorsal sepal glabrous; petals erose to denticulate along margin, 3-veined.

4a. Front margin of anther cap ciliate; lateral sepals free ....................................................... 64. B. omerandrum

4b. Front margin of anther cap entire to denticulate; lateral sepals fused along upper margin.
5a. Pseudobulbs distant, 1–10 cm apart; petiole 2–7 cm .......................................................... 65. B. forrestii
5b. Pseudobulbs contiguous, less than 1 cm apart from each other; petiole less than 1.3 cm ............... 66. B. taeniophyllum

2b. Both dorsal sepal and petals toothed, ciliate, fimbriate, or with glandular, wartlike appendages on margins.

6a. Margins of dorsal sepal and petals with glandular-papillate or clavate-glandular, wartlike appendages .......................................................... 67. B. chondriophorum

6b. Margins of dorsal sepal and petals erose to denticulate.

7a. Scape nearly as long as pseudobulb ................................................................................. 68. B. emarginatum

7b. Scape much longer than pseudobulb.

8a. Petals 5-veined, 7–8 mm ................................................................................................ 69. B. chinense

8b. Petals 3-veined, ca. 3 mm.

9a. Lateral sepals connate along upper and lower margins ................................................................ 70. B. helenae

9b. Lateral sepals connate along upper margins only .................................................................. 71. B. andersonii


Golden Lungflower Gongshan

Cirrhopetalum gongshanense (Z. H. Tsi) Garay, Hamer & Siegerist.

Rhizome creeping, ca. 2 mm in diam. Pseudobulbs 5–10 mm apart on rhizome, narrowly ovoid or bottle-shaped, 6–17 mm, ca. 5 mm in diam., with a terminal leaf. Leaf subsessile; blade oblong, 3.7–4.7 × 0.9–1.1 cm, leathery, apex obtuse.


二色卷瓣兰 er se juan ban lan

Cirrhopetalum bicolor (Lindley) Rolfe; Phyllorkis bicolor (Lindley) Kuntze.

Rhizome stout, 3–4 mm in diam. Pseudobulbs 3–4 cm apart from each other, ovoid, 1.5–2 cm, 8–13 mm in diam., with a terminal leaf. Petiole ca. 1.5 cm; leaf blade oblong, 10.4–14 × 1.8–2.3 cm, leathery, base contracted into petiole, apex obtuse and retuse. Scape from base of pseudobulb, ca. 5 cm; umbel 1–3-flowered; peduncle with 1 or 2 sheaths; floral bracts lanceolate, ca. 6 mm. Pedicel and ovary ca. 1.5 cm. Sepals and petals yellow, with purple spots at adaxial base and purplish red at apex; lip olive-green or turning to tangerine. Dorsal sepal oblong, ca. 15 × 10 mm, margin red ciliate, apex acuminate; lateral sepals obliquely ovate-lanceolate, ca. 20 × 7.5 mm, twisted near base, with their lower edges connate at basal part to each other, apex obtuse.

64. Bulbophyllum omerandrum Hayata, Icon. Pl. Formosan. 4: 50. 1914.

毛药卷瓣兰 mao yao juan ban lan

Cirrhopetalum omerandrum (Hayata) Hayata.

Rhizome creeping, ca. 2 mm in diam., rooting from base of pseudobulbs. Pseudobulbs 1.5–4 cm apart on rhizome, ovoid-globose, 1–2 cm, 5–8 mm in diam., 8–13 mm in diam., with a terminal leaf. Leaf subsessile; blade oblong, 1.5–8.5 × 0.8–1.4 cm, thickly leathery, base cuneate, apex obtuse and retuse. Scape from base of pseudobulb, erect, usually 5–6 cm; umbel or condensed raceme 1–3-flowered; peduncle slender, ca. 1 mm in diam., sparsely with 2 or 3 tubular sheaths; floral bracts ovate, cymbiform, 7–8 mm. Pedicel and ovary 1.5–2 cm. Flowers yellow. Dorsal sepal ovate, 10–14 × 7–8 mm, apex obtuse and slightly hairy; lateral sepals usually free, lanceolate, 20–33 × 4–5 mm, base adnate to column foot, margin entire, twisted near base and divergent, apex obtuse. Petals ovate-triangular, 5–7 × 4–5 mm, apical margins fimbriate-ciliate, apex purplish brown, obtuse and apiculate; lip recurved, ligulate, ca. 7 mm, fleshy, base attached to end of column foot by a mobile joint, apex obtuse, ± ciliate, sparsely finely papillate on both apical sides. Column ca. 4 mm, with crescent-shaped wings at middle; foot curved, ca. 5 mm, with free part ca. 2 mm; stelidia deltoid, ca. 1 mm; anther cap shortly fimbriate margined. Fl. Mar–Apr.


尖角卷瓣兰 jian jiao juan ban lan

Rhizome creeping, ca. 4 mm in diam. Pseudobulbs 1–2 cm apart on rhizome, ovoid, 2–3 cm, 1–2 cm in diam., with a terminal leaf. Petiole 2–3 cm; leaf blade oblong, 15–25 × 1.3–2.8 cm, thickly leathery, base contracted into petiole, apex obtuse and slightly emarginate. Scape from base of pseudobulb, yellowish green, densely spotted with purple, erect, to 15 cm, slender; raceme shortened, umbel-like, 10-flowered; peduncle sparsely with 3 or 4 membranous sheaths; floral bracts narrowly lanceolate, ca. 1 cm. Pedicel and ovary yellow, 1–1.8 cm. Flowers yellow, with purplish red spots on lip. Dorsal sepal ovate, concave, 7–10 × ca. 4 mm, apex obtuse; lateral sepals ovate-lanceolate, 1.5–2.5 cm, outer surface minutely papillate, base adnate to column foot and twisted above it, their upper and lower edges connate to each other forming a lanceolate tube, apex acuminate. Petals narrowly ovate-triangular, 2–3 × 1.5–2 mm, margins irregularly denticulate, apex acute; lip recurved, lanceolate, ca. 5 mm, strongly narrowed above middle, margin decurved and ± minutely papillate, apex obtuse. Column short; column foot curved, with free part ca. 2 mm; stelidia shortly subulate, ca. 0.5 mm; anther cap with irregularly incised margin. Fl. May–Jun.

Tree trunks in forests; 1800–2000 m. S and W Yunnan [Myanmar, Thailand].


带叶卷瓣兰 dai ye juan ban lan


Rhizome stout. Pseudobulbs contiguous, subcylindric, 3.5–3.8 cm, 7–9 mm in diam., with a terminal leaf. Leaf subacute; blade narrowly oblong, 16.5–19 × 1.5–2 cm, leathery, apex obtuse. Scape from base of pseudobulb, erect, cylindrical, 13–14 cm; umbel several flowered; peduncle ca. 1.5 mm in diam., with 2 or 3 tubular sheaths ca. 5 mm; floral bracts ovate-lanceolate, ca. 4 mm, shorter than pedicel and ovary; ovary ± covered with papillate hairs. Flowers whitish to greenish, densely with small purple spots, sometimes with yellowish brown lip. Dorsal sepal ovate, concave, ca. 7.5 × 5 mm, margin ± dentate toward apex, apex acute; lateral sepals narrowly lanceolate, ca. 20 × 4 mm, base adnate to column foot and twisted (180°), with their upper edges connate and lower edges incurved, apex acuminate. Petals narrowly ovate, ca. 4.2 × 2.2 mm, margins toothed, apex subacute; lip recurved, lanceolate, ca. 5 × 1 mm, fleshy, adaxially with 2 keels and a channel between them, base adnate to end of column foot, immobile, apex subacute. Column ca. 1.5 mm, with triangular, enlarged wings at middle; foot ca. 2 mm, with free part ca. 1 mm; stelidia shortly subulate; anther cap glabrous, apex slightly 3-lobed. Fl. Jun.

Tree trunks in dense forests; ca. 800 m. S Yunnan [Indonesia, Laos, Malaysia, Myanmar, Thailand, Vietnam].


城口卷瓣兰 cheng kou juan ban lan


Rhizome creeping, ca. 1.2 mm in diam., covered with membranous cupular sheaths, rooting from base of pseudobulbs. Pseudobulbs ca. 1 cm apart from each other, ovoid, 6–8 mm, ca. 4 mm in diam., with a terminal leaf. Leaf subsessile; blade oblong or obovate-oblong, 1.5–3.5 × 0.5–0.8 cm, leathery, apex obtuse and retuse. Scape from base of pseudobulb, erect, 2–3 cm; raceme shortened, umbel-like, often 2–4-flowered; peduncle ca. 0.8 mm in diam., with 2 spathe-like sheaths ca. 2.5 mm; floral bracts lanceolate, ca. 3 mm, apex acute. Pedicel and ovary 5–7 mm. Flowers yellow. Dorsal sepal ovate-oblong, concave, 4–5.5 × 2–3 mm, margins except base with densely glandular-papillate appendages, apex subobtuse; lateral sepals obliquely ovate, 7–25 × 2–2.2 mm, base adnate to column foot, their lower edges connate, apex acute. Petals ovate-oblong, 3–4 × 1.2–2 mm, margins densely with glandular-papillate appendages, apex obtuse; lip recurved, ligulate, ca. 2.5 mm, fleshy, grooved at base, basal margins decurved, apex obtuse. Column 1.5–1.8 mm; foot 2–3 mm, with free part ca. 1 mm; stelidia deltoid, 0.3–0.8 mm, apex acute and narrowly dentate; anther cap rounded at apex. Fl. Jun.

● Tree trunks in open forests; 700–1200 m. Chongqing, N Fujian, S Shaanxi, NE Sichuan, Zhejiang.


匍茎卷瓣兰 pu jing juan ban lan


Rhizome creeping, ca. 3 mm in diam., rigid, branched, with internodes 2–5 cm, rooting mainly from base of pseudobulbs. Pseudobulbs 9–18 cm apart from each other, narrowly ovoid or subcylindric, 2–4 cm, 5–10 mm in diam., narrowed toward apex, with a terminal leaf. Petiole ca. 5 mm; leaf blade oblong or ligulate, 4–10 × 1.5–3.5 cm, thickly leathery, apex obtuse and retuse. Scape from base of pseudobulbs, 2–4 cm; raceme shortened, umbel-like, 2–4-flowered; floral bracts lanceolate, ca. 8 mm, apex acute. Pedicel and ovary ca. 1.5 mm. Flowers purplish red. Dorsal sepal ovate-oblong, ca. 10 × 8 mm, apex truncate and emarginate, ciliate; lateral sepals falcate-lanceolate, 2–4.2 cm, abaxially papillate, base adnate to column foot, twisted near base, their upper and lower edges connate to each other forming a conic-cylindric synsepal, apex ciliate. Petals suborbicular, ca. 9 × 9 mm, ciliate; lip ovate, ca. 8 × 4 mm, base attached to end of column foot by a mobile joint, with 2 lamellae extending from base to near apex, apex obtuse-rounded. Column ca. 3 mm; foot ca. 5 mm, with free part ca. 2 mm; stelidia ca. 0.2 mm; anther cap irregularly denticulate margin, centrally carnate-ridged. Fl. Oct.

Tree trunks in forests; 800–2200 m. SE Xizang, SE to NW Yunnan [Bhutan, NE India, Myanmar, Nepal, Vietnam].


中华卷瓣兰 zhong hua juan ban lan
Cirrhopetalum chinense Lindley, Edwards’s Bot. Reg. 28(Misc.): 37. 1842; Phyllorkis chinensis (Lindley) Kuntze.

Pseudobulbs spaced, oblong-ovoid, 1.5–2 cm, 1–1.2 cm in diam., with a solitary leaf at apex. Leaf subsessile; blade lanceolate, 6.5–8.5 × 1.6–1.8 cm. Scape ca. 12 cm; peduncle with 2 sheaths; umbel 9–10-flowered; floral bracts lanceolate, ca. 5 mm. Pedicel and ovary 1.5–2 cm. Dorsal sepal and petals purplish; lateral sepals yellowish green. Dorsal sepal oblong, 10–15 × 5–8 mm, margin denticulate, apex aristate; lateral sepals ovate-lanceolate, 24–32 × 6–7 mm, twisted near base, with their lower edges shortly connate at base. Petals suboblong, 7–8 × 1.6–1.8 cm, margin denticulate, apex aristate; lateral sepals lanceolate, ca. 6 mm, apex acuminate. Column ca. 2 mm, stout, with slightly elongated wings; foot ca. 3 mm, with free part ca. 2 mm; stelidia ca. 0.5 mm; anther cap ± finely papillate. Fl. Aug.

Tree trunks in forests; 600–2300 m. S and SW Yunnan [Bhutan, NE India, Myanmar, Nepal].


Rhizome creeping or straggling; roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescence solitary, arising near pseudobulbs, 1-flowered or a ± subumbellate raceme. Pedicel with basal node ± coinciding with attachment of subtending bract. Sepals 3–5-veined; dorsal sepal with margins ciliate, fimbriate, or with paleaceous appendages (with a single apical thread in Bulbophyllum amplifolium); lateral sepals twisted inward near base, with upper margins approaching or meeting and connate, margins glabrous to ciliolate. Petals: margins fimbriate or with paleaceous appendages, 1–3-veined; lip: margins with or without auricles above base, margins usually ± glabrous, adaxially ± glabrous. Column: stigma not protruding at its base, foot distinct; anther: front margin projecting or not, abaxially with or without a low, rounded crest; pollinia 4, inner ca. 1/2 as long as outer or longer, all without appendages.

Fifty-seven provisionally accepted species: India to W Pacific, also Africa and Madagascar; 17 species (ten endemic) in China.

1a. Dorsal sepal entire, with a terminal thread only.

This species is known only from the type at K.


Cirrhopetalum chinense Lindley, Edwards’s Bot. Reg. 28(Misc.): 37. 1842; Phyllorkis chinensis (Lindley) Kuntze.

Pseudobulbs spaced, oblong-ovoid, 1.5–2 cm, 1–1.2 cm in diam., with a solitary leaf at apex. Leaf subsessile; blade lanceolate, 6.5–8.5 × 1.6–1.8 cm. Scape ca. 12 cm; peduncle with 2 sheaths; umbel 9–10-flowered; floral bracts lanceolate, ca. 5 mm. Pedicel and ovary 1.5–2 cm. Dorsal sepal and petals purplish; lateral sepals yellowish green. Dorsal sepal oblong, 10–15 × 5–8 mm, margin denticulate, apex aristate; lateral sepals ovate-lanceolate, 24–32 × 6–7 mm, twisted near base, with their lower edges shortly connate at base. Petals suboblong, 7–8 × 1.6–1.8 cm, margin denticulate, apex aristate; lateral sepals lanceolate, ca. 6 mm, apex acuminate. Column ca. 2 mm, stout, with slightly elongated wings; foot ca. 3 mm, with free part ca. 2 mm; stelidia ca. 0.5 mm; anther cap ± finely papillate. Fl. Aug.

Tree trunks in forests; 600–2300 m. S and SW Yunnan [Bhutan, NE India, Myanmar, Nepal].


This species is known only from the type at K.


角蕨卷瓣兰 jiao e juan ban lan


Cirrhopetalum chinense Lindley, Edwards’s Bot. Reg. 28(Misc.): 37. 1842; Phyllorkis chinensis (Lindley) Kuntze.

Pseudobulbs spaced, oblong-ovoid, 1.5–2 cm, 1–1.2 cm in diam., with a solitary leaf at apex. Leaf subsessile; blade lanceolate, 6.5–8.5 × 1.6–1.8 cm. Scape ca. 12 cm; peduncle with 2 sheaths; umbel 9–10-flowered; floral bracts lanceolate, ca. 5 mm. Pedicel and ovary 1.5–2 cm. Dorsal sepal and petals purplish; lateral sepals yellowish green. Dorsal sepal oblong, 10–15 × 5–8 mm, margin denticulate, apex aristate; lateral sepals ovate-lanceolate, 24–32 × 6–7 mm, twisted near base, with their lower edges shortly connate at base. Petals suboblong, 7–8 × 1.6–1.8 cm, margin denticulate, apex aristate; lateral sepals lanceolate, ca. 6 mm, apex acuminate. Pedicel and ovary ca. 11 mm. Flowers yellowish green with red spots. Dorsal sepal ovate, concave, ca. 6 × 3.2 mm, margin irregularly toothed or slightly erose, apex obtuse; lateral sepals lanceolate, ca. 32 × 3 mm, 5-veined, base finely papillate abaxially, twisted near base, their upper and lower edges connate to each other forming a horn-shaped synsepal. Petals ovate-triangular, ca. 3 × 1 mm, base ca. 1/3 width adnate to column foot, margins fimbriate, apex aristate; lip subovate-lanceolate, ca. 3 × 0.7 mm, fleshy, grooved at base, apex acuminate. Column ca. 2 mm, stout, with slightly elongated wings; foot ca. 3 mm, with free part ca. 2 mm; stelidia ca. 0.5 mm; anther cap ± finely papillate. Fl. Aug.

Tree trunks in forests; 600–2300 m. S and SW Yunnan [Bhutan, NE India, Myanmar, Nepal].


单叶卷瓣兰组 dan ye juan ban lan zu


Rhizome creeping or straggling; roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 1 leaf. Leaves persistent, thick. Inflorescence solitary, arising near pseudobulbs, 1-flowered or a ± subumbellate raceme. Pedicel with basal node ± coinciding with attachment of subtending bract. Sepals 3–5-veined; dorsal sepal with margins ciliate, fimbriate, or with paleaceous appendages (with a single apical thread in Bulbophyllum amplifolium); lateral sepals twisted inward near base, with upper margins approaching or meeting and connate, margins glabrous to ciliolate. Petals: margins fimbriate or with paleaceous appendages, 1–3-veined; lip: margins with or without auricles above base, margins usually ± glabrous, adaxially ± glabrous. Column: stigma not protruding at its base, foot distinct; anther: front margin projecting or not, abaxially with or without a low, rounded crest; pollinia 4, inner ca. 1/2 as long as outer or longer, all without appendages.

Fifty-seven provisionally accepted species: India to W Pacific, also Africa and Madagascar; 17 species (ten endemic) in China.

1a. Dorsal sepal entire, with a terminal thread only.
<table>
<thead>
<tr>
<th>1b. Dorsal sepal ciliate to fimbriate, or with other appendages along margins.</th>
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<tbody>
<tr>
<td>2b. Lip without auricles; stelidia strongly curved downward, hook-shaped and fusiform .......... 73. B. rothschildianum</td>
</tr>
</tbody>
</table>

| 3a. Lateral sepals 15–19 cm .......................................................... 74. B. rothschildianum |
| 3b. Lateral sepals less than 6 cm. |

| 4a. Scape ca. as long as pseudobulb. |
| 5a. Lateral sepals 5–7 mm, ca. 2 × as long as dorsal sepal or shorter ............................................ 75. B. brevipedunculatum |
| 5b. Lateral sepals ca. 10 mm, ca. 2.5 × as long as dorsal sepal or longer ........................................ 76. B. henanense |

| 4b. Scape much longer than pseudobulb. |
| 6a. Lateral sepals 0.7–1.4 cm. |
| 7a. Adaxial surface of lip glabrous; lateral sepals 0.7–1.1 cm .................................................. 77. B. albociliatum |
| 7b. Adaxial surface of lip partly papillose; lateral sepals 1.2–1.4 cm ........................................ 78. B. kuanwuense |

| 6b. Lateral sepals 1.5–3.5 cm or longer. |
| 8a. Lateral sepals long caudate at apex ................................................................................ 79. B. pecten-veneris |
| 8b. Lateral sepals obtuse to acute at apex. |

| 9a. Stelidia of column narrowly lanceolate, ca. 5 mm ................................................. 80. B. longibrachiatum |
| 9b. Stelidia of column tooblike, filiform, or subulate, less than 1.5 mm. |

| 10a. Lateral sepals free, with or without upper and lower margin inrolled; or lateral sepals partly connate and with upper and lower margin inrolled. |
| 11a. Lateral sepals without inrolled margins, free .......................................................... 81. B. taiwanense |
| 11b. Lateral sepals with inrolled margins, free or partly connate. |

| 12a. Lateral sepals ca. 3.4 cm; lip with 2 keels adaxially ........................................ 82. B. setaceum |
| 12b. Lateral sepals 1.2–1.5 cm; lip without keels adaxially ........................ 83. B. melanoglottis |

| 10b. Lateral sepals connate along upper margin, without inrolled margins (lateral sepals may be folded over midvein). |
| 13a. Floral bracts 7–8 mm; column ca. 6 mm .............................................................. 84. B. pingtungense |
| 13b. Floral bracts 3–5 mm; column 1–3 mm. |

| 14a. Lip with 2 longitudinal grooves and between them a keel adaxially ............. 85. B. tseanum |
| 14b. Lip without grooves and keel as above. |

| 15a. Stelidia suborbicular ................................................................. 86. B. lepidum |
| 15b. Stelidia subulate. |

| 16a. Dorsal sepal acuminate ...................................................................... 87. B. hirundinis |
| 16b. Dorsal sepal rounded to obtuse ..................................................... 88. B. fimbriferianthium |


**彩色卷瓣兰** cai se juan ban lan


Rhizome creeping, 6–10 mm in diam., densely covered with membranous sheaths. Pseudobulbs 2–6 cm apart from each other, ovoid-cylindric, 3–9 cm, 1.5–3 cm in diam., with a terminal leaf. Petiole 4–5 cm; leaf blade elliptic or elliptic-oblong, 15–25 × 3–6 cm, leathery, base subrounded, apex obtuse. Scapes 1 or 2, from base of pseudobulbs, erect, 15–18 cm; umbel 5–13-flowered; peduncle with 3–5 tubular sheaths; floral bracts lanceolate or oblong-lanceolate, 7–8 mm. Pedicel and ovary 1.6–1.8 cm. Flowers large, yellowish, median sepal and petals spotted with purple distally, lateral sepals finely spotted with purple proximally; lip yellowish spotted with purple. Dorsal sepal elliptic, concave, 6–6.5 × 5.5–6 mm, apex rounded to emarginate, with a (clavate-tipped) thread 5–7 mm; lateral sepals ovate-triangular, 23–35 × 5–6 mm, base adnate to column foot and twisted above it, their upper edges connate to each other except in basal part. Petals elliptic to ovate, ca. 4 × 2.5 mm, tip caudate with a thread 1–1.5 mm, margins finely erose to deeply lacerate distally; lip recurved, with rounded, patent auricles well above base, ovate-oblong, 3.5–5 × 1.5–3 mm, fleshy, adaxially with 2 rounded ridges, base hardly concave, apex obtuse. Column ca. 3 mm; foot ca. 3 mm, with free part ca. 1.5 mm; stelidia porrect or slightly curved downward, triangular, acute, with a small tooth along upper margin, ca. 1.5 mm; anther cap toothed at apex. Fl. Mar.

Tree trunks in limestone forests; ca. 1100 m. SW Yunnan (Menglian) [India, Myanmar, Thailand, Vietnam].

This species was first recorded from China by X. H. Jin and S. C. Chen (Acta Bot. Yunnan. 29: 169. 2007).


**大叶卷瓣兰** da ye juan ban lan


Rhizome creeping, 6–10 mm in diam., densely covered with membranous sheaths. Pseudobulbs ca. 10 cm apart from each other, ovoid-cylindric, 5–8 cm, ca. 1.5 cm in diam., with a terminal leaf. Petiole 4–7 cm; leaf blade elliptic or elliptic-oblong, (8–)10–21 × ca. 8.5 cm, leathery, base subrounded, apex obtuse. Scapes 1 or 2, from base of pseudobulbs, erect, 15–30 cm; umbel 4–8-flowered; peduncle 3–4 mm in diam., sparsely with 3–5 tubular sheaths; floral bracts lanceolate or...
oblong-lanceolate, 8–13 mm. Pedicel and ovary 1.5–2 cm. Flowers large, yellowish brownish. Dorsal sepal suborbicular, concave, ca. 1 × 1 cm, densely finely papillate, apical margins slightly denticulate, apex with a clavate-tipped awn ca. 8 mm; lateral sepals lanceolate, 4.5–5.5 cm, base adnate to column foot and twisted above it, their upper and lower edges connate to each other except apices. Petals ovate-triangular, ca. 4 × 3 mm, margins comblike, apex with a long clavate-tipped awn; lip recurved, without auricles, ovate-oblong, ca. 6 mm, fleshy, base subcordate, apex obtuse. Column ca. 3 mm; foot ca. 4 mm, with free part ca. 3 mm; stelidia strongly curved downward, hook-shaped and fusiform, ca. 5 mm; anther cap toothed at apex. Fl. Oct–Nov.

Rocks at broad-leaved forest margins; 1700–2000 m. S Guizhou, SE Xizang, W Yunnan [Butan, NE India, Myanmar].


美花卷瓣兰 mei hua juan ban lan


Rhizome stout, 5–7 mm in diam., densely with short tubular sheaths. Pseudobulbs well spaced, ovoid, ca. 3 cm in diam., with 1 leaf at apex. Petiole ca. 1 cm; leaf blade subelliptic, usually 9–10 × 2–2.5 cm, thickly leathery, apex obtuse and retuse. Scrape from base of pseudobulb, erect, 20–24 cm, stout; umbel 4–6-flowered; peduncle ca. 4 mm in diam., sparsely with 3 tubular sheaths, ca. 1 cm; floral bracts lanceolate, ca. 1 cm, apex acuminate. Pedicel and ovary ca. 2 cm. Flowers large, purplish red. Dorsal sepal ovate, cymbiform, ca. 15 × 7 mm, abaxially sparsely papillate, margins fimbriate, apex caudate; fringes narrowly oblong, to 7 mm, easily falling away; lateral sepals lanceolate, 15–19 cm, abaxially densely papillate below middle, twisted near base, their upper edges connate forming a synsepal ca. 2 cm wide, apex long caudate. Petals ovate-triangular, ca. 10 × 4 mm, abruptly contracted above middle and caudate, margins fimbriate; lip ligulate-elliptic, ca. 1 cm, fleshy, ± conuplicate in basal half; foot ca. 2 mm; stelidia suboblong, ca. 6 mm, with free part ca. 3 mm; stelidia suboblong, ca. 2 mm. Fl. unknown.

Tree trunks in dense forests; 1500–1600 m. S Yunnan [NE India].


河南卷瓣兰 he nan juan ban lan

Rhizome creeping, slender. Pseudobulbs 4–10 mm apart on rhizome, ovoid, ca. 5 mm, 2–4 mm in diam., ribbed, with a terminal leaf. Leaf shortly petiolate; blade ovate-oblong, 8–12 × 5–8 mm, leathery, apex obtuse or retuse. Scrape from base of pseudobulb, ascending, ca. 4 mm; umbel 2-flowered. Flowers small, with yellow sepals and purplish red lip. Dorsal sepal ovate, concave, ca. 3.5 × 2.5 mm, abaxial base and margin villose, apex obtuse; lateral sepals narrowly oblong, ca. 10 × 1.5 mm, base adnate to column foot, twisted near base, their lower edges connate except apices, apex obtuse. Petals obovate-oblong, ca. 2 × 1 mm, margins long ciliate, apex obtuse; lip triangular-lanceolate, ca. 3.5 × 1.5 mm, fleshy, ± conuplicate toward base, base attached to end of column foot, immobile, apex acuminate. Column ca. 1.2 mm, stout, with triangular, enlarged wings at middle; foot ca. 2 mm; stelidia narrow; anther cap nearly subspherical. Fl. May–Jun.

● Tree trunks in forests; 800–1100 m. Henan.


白毛卷瓣兰 bai mao juan ban lan

Cirrhopetalum albociliatum T. S. Liu & H. J. Su, Quart. J. Taiwan Mus. 24: 173. 1971; Bulbophyllum albociliatum var. weinimiianum T. P. Lin & Kuo Huang; B. taichungianum S. S. Ying.

Rhizome creeping, slender, ca. 1 mm in diam. Pseudobulbs ca. 2 cm apart on rhizome, ± ascending, narrowly ovoid, 1–1.3 cm, 5–7 mm in diam., with a terminal leaf. Leaf sessile; blade oblancoate or obovate, 2.5–4 × 0.8–1 cm, apex obtuse or sometimes retuse. Scrape from base of pseudobulb, 5–6 cm; umbel 5- or 6-flowered; peduncle slender, with 2 scalelike sheaths; floral bracts narrowly triangular, ca. 3 mm. Pedicel and ovary ca. 5 mm. Flowers reddening, with reddish yellow lateral sepals. Dorsal sepal concave, elliptic, ca. 3 × 2 mm, base subtruncate, margin long white ciliate, apex rounded; lateral sepals lanceolate, 7–11 × ca. 2 mm, twisted near base, with their upper edges ± connate, apex acute. Petals elliptic, ca. 2 × 1.2 mm, base truncate, margins long white ciliate, apex rounded; lip recurved, hornlike, 1.5–2 mm. Column yellow, suberete, ca. 1.5 mm, with a distinct foot, conspicuously winged; stelidia slender; anther cap subglobose. Fl. Apr–May.
Rhizome long creeping, ca. 2 mm in diam. Pseudobulbs 1–2 cm apart on rhizome, globose to ovoid, 0.7–1 cm, 6–9 mm in diam., with a terminal leaf. Leaf ± sessile; blade elliptic to obvate, 1.8–4 × 1–1.5 cm, apex rounded to slightly retuse. Scape from base of pseudobulb, erect, 2–3 cm; umbel 3–7-flowered; peduncle stout, with 2 scalelike sheaths. Pedicel and ovary 4–5 mm. Flowers with dorsal sepal reddish orange, tinged white near base and with red-brown veins, lateral sepals reddish to orange, petals reddish, lip orange. Dorsal sepal concave, ovate, 6–7 × 3–3.5 mm, margins white ciliolate, apex acute; lateral sepals linear-oblong, 12–14 × 2–3 mm, slightly twisted near base, with their upper and lower edges often loosely adhering, margins ciliolate, apex obtuse. Petals ovate, ca. 3.5 × 1.5–2 mm, margins long white ciliate, apex acute; lip recurved, ovate-triangular, 2–2.5 mm, adaxially deeply grooved and papillose near apex and base. Column subterete, with a distinct foot, conspicuously winged; stelidia slender; anther cap subglobose. Fl. Apr.}

Rhizome stout, ca. 6 mm in diam., often branched, rooting from base of pseudobulbs. Pseudobulbs well spaced, erect, narrowly ovoid, 4–4.3 cm, ca. 1 cm in diam., with a terminal leaf. Petiole 2–3 cm; leaf blade elliptic, large, 12.5–15 × 3.5–5 cm, thickly leathery, base contracted into petiole, apex obtuse. Scape from base of pseudobulb, erect, 15–28 cm; umbel 3–4-flowered; peduncle 2–3.5 mm in diam., sparsely with 3 or 4 sheaths ca. 1 cm; floral bracts lanceolate, ca. 9 mm, apex acuminate. Pedicel and ovary ca. 2 cm. Flowers pale green, tinged with purple. Dorsal sepal ovate, concave, ca. 15 × 9 mm, margin fimbriate in apical half, apex acuminate; lateral sepals narrowly lanceolate, ca. 35 × 6 mm, twisted near base, their upper and lower edges connate to each other forming a tube, with their apices separate, apex acuminate. Petals falcate-lanceolate, ca. 10 × 4 mm, margins densely fimbriate, apex with a long awn ca. 0.8 mm; lip strongly reflexed, lanceolate, ca. 1 cm, base ± conduplicate, base attached to end of column foot by a mobile joint, slightly ciliate, apex acute. Column ca. 5 mm, with triangular, enlarged wings above; foot ca. 10 mm, with free part upcurved, ca. 5 mm; stelidia laterally spreading, narrowly lanceolate, ca. 5 mm, base slightly twisted; anther cap conblottle on apical margin. Fl. Nov.

Rhizome creeping, 1–2 mm in diam., rooting from base of pseudobulbs. Pseudobulbs 5–10 mm apart on rhizome, ovoid, 5–12 mm, 5–10 mm in diam., with a terminal leaf. Leaf subsessile; blade elliptic, oblanceolate, or ovate, 1–6 × 0.7–1.8 cm, thickly leathery, apex obtuse or sometimes retuse. Scape from base of pseudobulb, erect, ca. 10 cm; umbel 3–9-flowered; peduncle slender, sparsely with 2 or 3 tubular sheaths; floral bracts lanceolate, small, 3–4 mm. Pedicel and ovary 7–10 mm, slender. Flowers yellowish green or yellow slightly tinged with brown. Dorsal sepal ovate, concave, ca. 5 × 2.5 mm, margin fimbriate-ciliate, apex long ciliate; lateral sepals narrowly lanceolate, 35–50 × ca. 2.5 mm, twisted near base, their upper and lower edges connate to each other forming a long-cuspidate tube, with their apices separate, apex long cuspitate. Petals obliquely ovate, 2.5–3 × ca. 1.5 mm, base ca. 2/5 width adnate to column foot, margins fimbriate-ciliate especially in apical half, apex acute; lip recurved, ligulate, ca. 2.5 mm, fleshy, nearly glabrous, subacute. Column ca. 2 mm; stelidia subulate, ca. 1 mm; foot upcurved, ca. 1.5 mm, with free part ca. 0.5 mm; anther cap papillate margined. Fl. Apr–Sept.

Tree trunks or rocks in forests; below 1600 m. S Anhui, N Fujian, Guangxi, Hainan, Hong Kong, W Hubei, C and S Taiwan [Laos, Vietnam].

鹤冠卷瓣兰 guan guan juan ban lan

*Bulbophyllum citisepalum* T. C. Hsu & S. W. Chung; *B. taiungianum* Ying.

Rhizome short. Pseudobulbs close or ca. 1 cm apart from each other, ovoid to narrowly cylindric. 1–1.3 cm, 5–10 mm in diam., with a terminal leaf. Leaf blade elliptic to oblong-elliptic, 3–6 × 1.2–2 cm, thickly leathery, apex obtuse and retuse. Scrape green, erect, 14–16 cm; umbel 12–16-flowered; floral bracts ovate-lanceolate, ca. 5 mm. Pedicel and ovary ca. 11 mm. Flowers yellow, tinged with brown, with tangerine lip. Dorsal sepal ovate, concave, ca. 5.5 × 3 mm, brown veined, white ciliate, apex shortly cuspidate; lateral sepals lanceolate or linear, ovate, concave, ca. 5.5 × 3 mm, brown veined, white hairy on both basal sides. Column ca. 1.5 mm; stelidia broadly subulate; anther cap lacerate margin entire, apex acute. Petals ovate-elliptic, 3–3.5 × 1.5–2 cm, with many purplish red spots; stelidia subulate, ca. 1 mm; anther cap yellow, finely papillate. Fl. Mar–May.


紫纹卷瓣兰 zi wen juan ban lan

*Bulbophyllum linchianum* S. S. Ying; *B. melanoglossum var. rubropunctatum* (S. S. Ying) S. S. Ying; *B. rubropunctatum* S. S. Ying; *Cirrhopetalum melanoglossum* (Hayata) Hayata; *C. striatum* T. S. Liu & H. J. Su.

Rhizome creeping, 1–2 mm in diam. Pseudobulbs 1–6 cm apart on rhizome, ovoid, usually 1–1.5 cm, 5–7 mm in diam., with a terminal leaf. Leaf subsessile; blade obovate-lanceolate or oblong, 4–8 × 0.8–1.5 cm, leathery, apex obtuse and retuse or apiculate. Scrape from base of pseudobulb, yellowish green, with purplish red spots, 7–12 cm; umbel several to 10-flowered; peduncle slender, ca. 0.6 mm in diam., sparsely with 2 or 3 sheaths; floral bracts narrowly lanceolate, ca. 3 mm. Pedicel and ovary 6–12 mm. Sepals and petals pale yellow, usually densely with purplish red stripes or spots; lip reddish adaxially, yellow abaxially. Dorsal sepal ovate, 4.5–5 × 2.5–3 cm, 3-veined, margin fimbriate-ciliate, apex acute; lateral sepals narrowly lanceolate, 12–20 × ca. 3 mm, 5-veined, twisted near base, their upper and lower edges ± connate forming a somewhat tubular synsepall, base broad and adnate to column foot, margin entire, apex acute. Petals ovate-elliptic, 3–3.5 × 1.5–1.8 mm, apex acute and with a black blotch, ciliate; lip recurved, ligulate, ca. 2.5 mm, fleshy, base attached to end of column foot, immobile. Column suberect, yellow, ca. 1.5 mm; foot ca. 1.5 mm, with many purplish red spots; stelidia subulate, ca. 1 mm; anther cap yellow, finely papillate. Fl. Mar–May.

84. *Bulbophyllum pingtungense* S. S. Ying & C. Chen, Coloured Ill. Fl. Taiwan I: 499. 1985 [*"pingtungensis"*].

屏东卷瓣兰 ping dong juan ban lan

Rhizome 2–3 mm in diam. Pseudobulbs 5–10 cm apart on rhizome, ovoid or narrowly ovoid, 1–4 cm, 0.8–2 cm in diam., 3–5 ribbed, with a terminal leaf. Leaf subsessile; blade elliptic to narrowly oblong, 3–15 × 1–2.5 cm, leathery, base contracted, apex obtuse and retuse. Scape erect, 5–15 cm, stout; umbels 2–4-flowered; peduncle with 2 sheaths; floral bracts lanceolate, 7–8 mm, apex acute. Flowers erect, orange-yellow to pale red, marked with red or deep purplish red stripes and spots. Dorsal sepal ovate, concave, 1.5–2.4 × 1.1–1.5 cm, adaxially hairy, ciliate, apex cuspidate; lateral sepals obliquely lanceolate, 2.5–4 × 0.7–1 cm, base adnate to column foot, apex acute. Petals narrowly triangular, 1–1.2 cm, base broad and adnate to column foot, ciliate, apex acute; lip recurved, ligulate, ca. 1 cm, fleshy, hairy on both basal sides. Column ca. 0.6 cm, with triangular, enlarged wings at base; foot ca. 1.2 cm; stelidia conspicuous. Fl. Jan–Apr.

● Tree trunks in broad-leaved forests; 100–400 m. S Taiwan.

Chinese records of *Bulbophyllum wightii* H. G. Reichenbach (e.g., in FRPS 19: 240. 1999) are referable to *B. pingtungense*.


香港卷瓣兰 xiang gang juan ban lan


Rhizome creeping, ca. 3 mm in diam., with straw-yellow sheaths. Pseudobulbs ovoid, 1–1.5 cm, 6–8 mm in diam., with a terminal leaf. Petiole 3–7 mm; leaf blade oblong, 4–7 × 1.7–2.5 cm, thickly leathery, apex rounded and retuse. Scape from base of pseudobulb, 8–12 cm; umbel 4- or 5-flowered; peduncle pale purplish red, slender, ca. 1 mm in diam., with 2 sheaths; floral bracts subulate, ca. 3 mm, apex acuminate or apiculate. Pedicel and ovary ca. 4 mm, deep red. Flowers yellow, with dark red margins on dorsal sepal and petals, densely spotted with dark purple-red on lateral sepals and tinged with orange on lip. Dorsal sepal subovate, concave, ca. 5 × 4 mm, margins with dark red fimbriate cilia, apex long caudate; lateral sepals obliquely lanceolate, twisted near base, their upper edges connate to each other forming an elliptic synsepall 1.8–2 × 0.7–0.8 cm. Petals obliquely ovate, ca. 4 × 2.5 mm, margins fimbriate-ciliate, apex long caudate; lip recurved, ligulate, fleshy, base attached to end of column foot by a mobile joint, adaxially with 2 grooves and 1 longitudinal keel between them. Column ca. 3 mm, with triangular, enlarged wings at base; foot distinct; stelidia very short; anther cap glabrous. Fl. Apr. 2n = 38*.

● Rocks. Hong Kong.


南方卷瓣兰 nan fang juan ban lan

*Ephippium lepidum* Blume, Bijdr. 310. 1825; *Bulbophyllum obtusiangulum* Z. H. Tsi.
Bulbophyllum hirundinis


This species mainly differs from *Bulbophyllum hirudinis* in having a rounded to obtuse dorsal sepal.


1b. Raceme with a small basal bract ca. 8 mm, or with several small bracts lower down on peduncle.

1a. Raceme with a large spathelike basal bract ca. 25 mm ....................................................................................... 89.

2b. Petals truncate to rounded; raceme globose to ovoid ................................................................................... 91.

2a. Petals acute; raceme cylindric-ellipsoid ............................................................................................................ 90.

**Phyllorkis** da bao shi dou lan

*Rhizome creeping, stout, 5–6 mm in diam. Pseudobulbs spaced, 5–7 mm apart from each other, very small, 3–5 mm, 3–4 mm in diam., rigid, with a terminal leaf. Petiole 4–7 cm; leaf blade erect, elliptic-oblong or obovate-lanceolate, 15–25 × 2–4 cm, fleshy or leathery, apex obtuse and apiculate. Scape from base of pseudobulb, erect, 15–25 cm; raceme pendulous, to 6.5 cm, densely many flowered, with an involucre at base; involucre spathelike, large, ca. 25 × 7 mm; peduncle with 2 or 3 tubular sheaths 2–2.5 cm; floral bracts ovate, small, ca. 4 mm. Pedicel and ovary ca. 3 mm. Flowers pale purple, thickly textured, not widely opening. Dorsal sepal ovate-triangular, ca. 5 × 2.2 mm, abaxially ± scaly, apex acute; lateral sepals obliquely ovate, ca. 5 × 3 mm, abaxially ± scaly, their lower edges connate to each other except apices, apex obtuse. Petals oblong-lanceolate, 2–4.4 × ca. 1.5 mm, thinly textured, entire, acute or obtuse; lip recurved, ligulate, ca. 3.5 × 2 mm, fleshy, grooved at base, adaxially with 3 keels, densely papillate, apex obtuse. Column ca. 0.6 mm, stout; foot very short, without conspicuous free part; stelidia narrowly fusiform, ca. 1 mm; anther cap truncate and slightly apiculate at apex. Fl. Nov. 2n = 38, 40, 42.

Tree trunks or rocks in forests; 1400–2400 m. W to SE Yunnan [Bhutan, NE India, Nepal].


卷苞石豆兰 juan bao shi dou lan

*Bulbophyllum cylindraceum* Lindley var. *khasyanum* (Griffith) J. D. Hooker.

*Rhizome creeping, stout, 4–5 mm in diam. Pseudobulbs 4–6 mm apart from each other, ovoid-subglobose, very small, 3–5 mm, 3–4 mm in diam., with a terminal leaf. Petiole 3–4 cm; leaf blade elliptic-oblong or suboblong, 12–20 × 3–4 cm, apex obtuse. Scape from base of pseudobulb, 15–25 cm; raceme nodding, 5.5–6 cm, densely many flowered, with several involucres at base; involucres scale-shaped, ca. 8 × 2 mm, apex aristate; floral bracts lanceolate, ca. 7 mm, much longer than pedicel and ovary, apex curled-aristate. Flowers dark purple, lip even darker. Dorsal sepal ovate, ca. 5 × 2 mm; lateral sepals obliquely ovate, ca. 5 × 3 mm, abaxially slightly scaly, their lower edges connate to each other. Petals lanceolate, ca. 4 × 1.5 mm, apex long acuminate; lip ligulate, fleshy, grooved at base, adaxially with 3 keels and densely papillate. Column short, with a short but distinct foot. Fl. Nov.

About 2000 m. C Yunnan [Bhutan, NE India, Malaysia, Thailand, Vietnam].


球花石豆兰 qiu hua shi dou lan

*Bulbophyllum poilanei* Gagnepain.

Pseudobulbs close, subovoid, very small, ca. 5 mm, ca. 7 mm in diam., with a terminal leaf. Leaf blade obovate-lanceolate, 11–12 × 0.7–1.7 cm, nearly fleshy, narrowed toward base, with a few tubular sheaths, apex obtuse. Scape from base of pseudobulb, short; raceme shortened, globose, 4–5 mm, densely many flowered; floral bracts ovate-triangular, very small, ca. 1 mm, apex acute. Pedicel and ovary ca. 2 mm. Flowers purple. Dorsal sepal ovate, ca. 3.5 × 2 mm, 3-veined, entire, obtuse; lateral sepals subequal in size to dorsal sepal, obliquely ovate, 3-veined, their lower edges connate to each other, apex obtuse. Petals truncate to rounded, ca. 2.2 × 1.2 mm, 1-veined, margins glabrous to erose, apex obtuse; lip reflexed, ligulate, fleshy, with a basal groove, adaxially ± papillate, base attached to end of column foot by a mobile joint, apex obtuse. Column stout; stelidia subfusiform; anther cap ± mucronate at apex. Fl. Mar.

Tree trunks in dense forests; 500–600 m. Hainan [India, Vietnam].

*Bulbophyllum cylindricoides* W. H. Chen & Y. M. Shui “(Seed Pl. Karst Region China 1: 217. 2006) belongs here but was not validly published because no Latin description or diagnosis was provided and no type was indicated (Vienna Code, Art. 36.1 and 37.1).”


少花微球组 shao hua wei qiu zu

*Diphyes* sect. *Stachysanthes* Blume, Bijdr. 312. 1825.

Rhizome creeping or straggling; roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs inconspicuous compared to size of plant, apex with 1 leaf. Leaves persistent, thick. Inflorescence solitary, mostly arising near pseudobulbs, 1-flowered, or an elongate or contracted 2- or 3-flowered raceme. Pedicel with basal node ± coinciding with attachment of subtending bract. Sepals free, ± equally long, margins glabrous, 3-veined. Petals: margins glabrous, to erose or denticulate, 1-veined; lip: margins without auricles or lateral lobes, margins ± glabrous to papillate, adaxially glabrous. Column: stigma protruding at its base or not, foot very distinct to short; anther: front margin projecting or not, abaxially with or without a low, rounded crest; pollinia 2 or 4, inner ca. 1/2 as long as outer or smaller, all usually without appendages.

Seventy-two provisionally accepted species: India to W Pacific; five species (three endemic) in China.

1a. Inflorescence with 5 or more flowers .............................................................................................................................. 92. **B. apodum**

1b. Inflorescence with 1–3 flowers.

2a. Rhizome very short, nearly invisible; leaves 3–5, in clusters ............................................................................................. 93. **B. pauciflorum**

2b. Rhizome elongate; leaf solitary, well spaced.

3a. Lip adaxially with 2 calli ...................................................................................................................................................... 94. **B. hainanense**
3b. Lip adaxially without calli
   4a. Sepals 6–16 mm ................................................................. 95. *B. drymoglossum*
   4b. Sepals 2.5–4 mm ........................................................... 96. *B. tokioi*


柄叶石豆兰  bing ye shi dou lan

*Bulbophyllum ebolbum* King & Pantling; *B. spatheceum* Rolfe.

Rhizome creeping, 4–5 mm in diam., rooting at nodes of rhizome. Pseudobulb minute. Leaves arising from nodes of rhizome, 2–11 cm apart from each other. Petiole 4–8 cm; leaf blade oblong, 8–24 × 3–3.2 cm, fleshy, apex obtuse and retuse. Scape arising from base of pseudobulb, ascending, to 22 cm, with 2 or 3 sheaths at base; raceme 8–10 cm, densely with many small flowers; floral bracts narrowly lanceolate, ca. 3.5 mm. Pedicel and ovary 2.5–4 mm. Flowers pale yellow, thickly textured. Dorsal sepal oblong, 4.5–5 × 1.7–2 mm, 3-veined, entire, acute to acuminate; lateral sepals falcate-lanceolate, 5.2–6 × 2–2.6 mm, 3-veined, apex acute to acuminate. Petals ellipitic, 2.5–3.3 × 1–1.1 mm, 1-veined, entire, obtuse; lip recurved, lanceolate, 3.3–4 × ca. 2 mm, 3-veined, slightly conduplicate toward base, apex obtuse. Column 1–1.5 mm; foot ca. 2 mm, slightly curved, adaxial base with a callus; stelidia erect, subtriangular, very short; anther cap finely papillate. Fl. Aug–Sep. 2n = 38.

Tree trunks in broad-leaved forests; ca. 1000 m. SE Yunnan [India, Indonesia, Laos, Malaysia, Myanmar, ?New Guinea, Philippines, Thailand, Vietnam; ?Pacific islands].


白花石豆兰  bai hua shi dou lan

*Bulbophyllum riyanum* Fukuyama.

Rhizome very short, nearly invisible, covered with several membranous scalelike sheaths; roots fascicular, slender. Pseudobulb absent. Leaves often 3–5 in clusters, nearly secund on rhizome, subsessile; blade elliptic or oblong, 20–35 × 5–8 mm, apex obtuse and retuse. Scapes several, erect, 15–25 mm, slender; raceme often 2-flowered; peduncle slender, base with 2 minute sheaths; floral bracts ovate-lanceolate, 2–3 mm. Pedicel and ovary ca. 5 mm. Flowers erect, pale yellow or whitish, with yellow lip, not fully opening. Dorsal sepal oblong, concave, 4–5.5 × 1.5–2 mm, 3-veined, apex acute; lateral sepals obliquely triangular, 5–6 × ca. 3 mm, base adnate to column foot forming a short mentum, apex acute. Petals oblong-spatulate, very small, 2–3 × 0.6–0.7 mm, 1-veined, entire, obtuse; lip erect, slightly reflexed, narrowly elliptic, ca. 2.5 mm, thinly textured, both surfaces glabrous, 3-veined, base attached to end of column foot, margin entire, apex acute. Column very short, with a foot ca. 2.6 mm; stelidia triangular-acute. Capsule fusiform, ca. 1.1 cm, ca. 3.5 mm in diam. Fl. May–Oct.

● Tree trunks in dense forests; 300–1400 m. E Hainan, E and N Taiwan.


海南石豆兰  hai nan shi dou lan

Rhizome slender, ca. 0.8 mm in diam., rigid, bearing 1 leaf and 2 or 3 slender roots at nodes. Pseudobulb absent. Leaves 1–1.5 cm apart from each other, subsessile; blade elliptic, 8–15 × 6–8 mm, fleshy, apex obtuse. Scapes several, usually arising from leaf-bearing nodes, erect, 2–3.5 cm, slender; umbel 2-flowered; peduncle ca. 0.4 mm in diam., with 3 or 4 tubular sheaths ca. 2.5 mm; floral bracts ovate-lanceolate, ca. 1.5 mm, apex acute. Pedicel and ovary ca. 3 mm. Flowers slightly nodding, pure yellow, thickly textured. Sepals free; dorsal sepal ovate-lanceolate, 5–7 × ca. 2.5 mm, apex acute; lateral sepals obliquely ovate-triangular, 4.5–6.5 × ca. 3.2 mm, base adnate to column foot, apex acute. Petals oblong, ca. 3 × 1.2 mm, entire, obtuse; lip broadly ovate in outline, ca. 3.2 mm, base attached to end of column foot by a mobile joint, apex obtuse; disk with a pair of calli adaxially. Column ca. 2 mm; foot upcurved, ca. 2.5 mm, with free part ca. 1 mm; anther cap glabrous. Fl. Nov.

● Tree trunks in mixed forests; ca. 500 m. E Hainan.


圆叶石豆兰  yuan ye shi dou lan

*Bulbophyllum aureolabellum* T. P. Lin; *B. gracillimum* Hayata (1912), not Rolfe (1907); *B. somae* Hayata.

Rhizome creeping, 0.5–1 mm in diam., noded, with internodes 1–2 cm, each node bearing 1 leaf and 1–3 roots. Pseudobulb absent. Leaf subsessile; blade subelliptic or orbicular, 5–30 × 5–10 mm, fleshy-thickened, apex obtuse. Scape arising from base of petiole, erect, 7–40 mm; peduncle slender, ca. 0.3 mm in diam., with 2 or 3 sheaths, terminating in a solitary flower; floral bracts ovate, 1.3–3 mm, membranous, apex acute. Pedicel and ovary 2–5 mm. Flowers pale yellow, with purplish brown stripes on sepals and petals and usually heavily tinged with purplish brown on lip. Sepals free, similar, ovate-lanceolate, 6–16 × 2–4 mm, apex acuminate; lateral sepals slightly larger. Petals oblong, subelliptic, or linear, 1.5–4 × 1–2 mm, entire, obtuse; lip recurved, ovate-elliptic, 1.5–5 × 0.3–3 mm, 3-veined, base attached to end of column foot by an immobile joint, basal margins ± undulate, apex obtuse. Column 1–2 mm, stout; foot purplish brown, 1.3–4 mm, with free part 0.8–1.8 mm; stelidia deltoid, inconspicuous; anther cap glabrous. Fl. May. 2n = 40.

Tree trunks in forests; 300–2400 m. N Guangdong, E Guangxi, Taiwan, SE and SW Yunnan [Japan, Korea].


小叶石豆兰  xiao ye shi dou lan

*Bulbophyllum tokioi* f. alboviride Fukuyama.

Rhizome creeping, ca. 0.5 mm in diam., with tubular sheaths. Pseudobulb absent. Leaves small, well spaced, sessile; leaf blade elliptic or orbicular-elliptic, 5–6 × 3–4.5 mm, fleshy, with a few very small membranous sheaths at base, apex

rounded and mucronate. Scapes 1 or 2, axillary, erect, ca. 10 mm; raceme 2-flowered; peduncle slender; floral bracts elliptic, shorter than pedicel and ovary. Pedicel and ovary ca. 1 mm. Flowers yellowish white, tinged with purple on lip. Sepals membranous, glabrous, 3-veined; dorsal sepal oblong, 2.5 × 1 mm, apex obtuse; lateral sepals obliquely ovate-triangular, 2.6–4 × 1.5–2 mm, apex acute. Petals oblong, 1.3–2.4 × 0.6–1 mm, 1-veined, entire, acute; lip ovate-triangular, 1.5–2.4 × ca. 1 mm, 3-veined, base attached to end of column foot by an immobile joint, margin entire, apex obtuse-rounded. Column 0.7–1 mm, base with a foot 1–2 mm; stelidia deltoid, very small. Fl. Apr.

- Tree trunks in dense forests; 600–800 m. C and N Taiwan.


Tripudianthes (Seidenfaden) Szlachetko & Kras.

Rhizome creeping, roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 2 leaves. Leaves deciduous, thin. Inflorescences solitary, mostly arising near pseudobulbs, an elongate raceme shorter than pedicel and ovary. Pedicel and ovary ca. 1 mm. Flowers yellowish white, tinged with purple on lip. Sepals shorter than pedicel and ovary. Pedicel and ovary ca. 1 mm. Flowers thinly textured, white, with purplish red lip. Dorsal sepal narrowly ovate-triangular, ca. 8 × 2 mm, adaxially sparsely with short hairs, margins entire, apex long acuminate; lateral sepals lanceolate, ca. 3 mm, apex acuminate. Petidcel and ovary ca. 2 mm. Peduncle stout, 5–6 cm, usually with more than 10 secund flowers; floral bracts lanceolate, sunken, with dense papillate hairs, base attached to column foot, twisted near base, with their lower edges connate to each other, apex acute and ± curved. Petals obliquely ovate-triangular, 3 × 1.5 mm, margins irregularly fimbriate-ciliate, base attached to column foot by a mobile joint, apex obtuse. Column white, ca. 1.5 mm, base with a distinct foot; stelidia narrowly cylindrical, ca. 1.5 mm; anther cap purple, subglobose, finely papillose. Fl. Nov.–Dec. 2n = 38.


双叶石豆兰组 shuang ye shi dou lan zu

Rhizome creeping, roots sprouting mainly below pseudobulbs, spreading; new shoots arising from basal node of pseudobulb. Pseudobulbs distinct, apex with 2 leaves. Leaves deciduous, thin. Inflorescence solitary, mostly arising near pseudobulbs, an elongate raceme shorter than pedicel and ovary. Pedicel and ovary ca. 1 mm. Flowers yellowish white, tinged with purple on lip. Sepals shorter than pedicel and ovary. Pedicel and ovary ca. 1 mm. Flowers thinly textured, white, with purplish red lip. Dorsal sepal narrowly ovate-triangular, ca. 8 × 2 mm, 3-veined; lateral sepals fused along their lower margins, 2–5 × as long as dorsal sepal, margins glabrous, 3–7-veined. Petals: margins fimbriate, 1-veined; lip: margins without auricles or distinct lateral lobes, margins glabrous to papilllose or ciliate, adaxially partly papillose and hirsute. Column: stigma protruding at its base or not, foot short; anther: front margin projecting or not, abaxially with or without a low, rounded crest; pollinia 4, inner less than 1/2 as long as outer or longer, all without appendages.

Eleven provisionally accepted species: India to Indochina, Thailand, Java; two species in China.

1a. Margins of dorsal sepal irregularly fimbriate .......................................................................................................................... 97. B. wallichii
1b. Margins of dorsal sepal glabrous ................................................................................................................................................. 98. B. khaoyaiense
or somewhat contracted several- to many-flowered raceme. Pedicel with basal node ± coinciding with attachment of subtending bract. Sepals: margins glabrous to ciliate, surface glabrous to hirsute, 3-veined; lateral sepals free (fused along their lower margins in *Bulbophyllum cariniflorum* and *B. triste*), ca. as long as dorsal sepal or slightly longer. Petals: margins glabrous, 1-veined; lip: margins without auricles or distinct lateral lobes, margins glabrous to papillosum, adaxially glabrous to papillosum. Column: stigma protruding at its base or not, foot short; anther: front margin projecting or not, abaxially with or without a low, rounded crest; pollinia 2 or 4, with inner ca. 1/2 as long as outer or shorter, all without appendages.

Nineteen provisionally accepted species: India to Indochina, Thailand, Sumatra; five species in China.

1a. Flowers and leaves appearing at same time.
   2a. Lateral sepals distinctly keeled; leaves 12–15 × 2.7–4 cm, apex acute; scape shorter than leaves .......... 99. *B. cariniflorum*
   2b. Lateral sepals not keeled; leaves 3–7 × 1–2.1 cm, apex rounded and emarginate; scape much longer than leaves .......................................................... 100. *B. shanicum*

1b. Flowers and leaves not appearing at same time.
   3a. Lateral sepals connate along lower margins; pseudobulbs subglobose, broader than long .................................. 101. *B. triste*
   3b. Lateral sepals free; pseudobulbs ovoid or ovoid-conic, longer than broad.
      4a. Sepals abaxially hirsute; rachis pubescent ............................................................................................ 102. *B. hirtum*
      4b. Sepals abaxially glabrous; rachis glabrous ...................................................................................... 103. *B. suavissimum*


尖叶石豆兰  jian ye shi dou lan

*Bulbophyllum densiflorum* Rolfe.

Rhizome stout, ca. 3 mm in diam., rooting from base of pseudobulbs. Pseudobulbs close, ovoid, 1–1.5 in diam., with 2 leaves at apex. Leaves deciduous at anthesis; petiole 5–10 mm; leaf blade oblong, 12–15 × 2.7–4 cm, leathery, base contracted into petiole, apex acute. Scape from base of pseudobulb, ca. 8 cm; panicle nodding, 2–3 cm, densely many flowered; peduncle ca. 1.2 mm in diam., with 3 or 4 sheaths; floral bracts narrowly lanceolate, 3–4 mm, apex acuminate. Pedicel and ovary 2–3 mm. Flowers yellow, not widely opening, thickly textured. Sepals similar, ovate-oblong, ca. 6 × 3 mm, apex obtuse; dorsal sepal concave; lateral sepals with lower edges connate to each other, base ca. 1/2 width adnate to column foot, apex hooded. Petals lanceolate, ca. 3.5 × 1.5 mm, entire, acute; lip recurved, ± conduplicate, ligulate, ca. 3 × 1.3 mm, fleshy, entire, obtuse. Column ca. 2 mm; foot ca. 2 mm, with free part ca. 1 mm; stelidia deltoid, ca. 1 mm; anther cap finely papillate margined. Fl. Jul. 2n = 38.

Rocks in mixed forests; 2100–2200 m. S Xizang [Bhutan, NE India, Nepal, Thailand].


二叶石豆兰  er ye shi dou lan

Rhizome creeping, ca. 3 mm in diam., densely with tubular sheaths, rooting from base of pseudobulbs. Pseudobulbs 1–2 cm apart from each other, ovoid, 7–14 mm in diam., with 2 leaves at apex. Leaves deciduous at anthesis, subsessile; leaf blade obovate-lanceolate, 3–7 × 1–2.1 cm, leathery, apex rounded and emarginate. Scape from base of leafless pseudobulb, erect, 11–17 cm; raceme 6–10 cm, densely with many second flowers, peduncle ca. 1.5 mm in diam., glabrous, with 5 tubular sheaths; floral bracts lanceolate, small, ca. 3 mm, apex acuminate. Pedicel and ovary 4–5 mm. Flowers pale yellow. Sepals free, ovate-lanceolate, 3-veined, apex obtuse; dorsal sepal ca. 4.5 × 1.6 mm; lateral sepals ca. 5.5 × 3 mm, base ca. 1/2 width adnate to column foot. Petals ovate-lanceolate, ca. 4 × 1.3 mm, entire, acute or mucronate; lip reflexed, ± conduplicate, ca. 3 mm, fleshy, adaxially with 1 longitudinal keel, apex obtuse, ciliate. Column ca. 1.8 mm; foot ca. 1.5 mm, with free part ca. 0.3 mm; stelidia deltoid, ca. 0.8 mm; anther cap densely finely papillate, centrally with 1 globose projection. Fl. Oct.

Rocks in forests; 1800–1900 m. SW Yunnan [Myanmar].


球茎石豆兰  qiu jing shi dou lan

*Phyllorkis tristis* (H. G. Reichenbach) Kuntze.

Rhizome stout, 2–3 mm in diam. Pseudobulbs ca. 5 mm apart on rhizome, subglobose, broader than long, 13–20 mm in diam., apex with 2 leaves. Leaf deciduous at anthesis, subsessile; blade pale green, ± lanceolate, ca. 10 × 2 cm, apex acute. Scape arising from base of leafless pseudobulb, 2–4 cm; raceme sometimes nodding, 1–1.5 cm, densely many flowered; peduncle ca. 1 mm in diam., with or without 3 sheaths 5–6 mm; floral bracts 2–3 mm, apex acute. Pedicel and ovary ca. 2 mm. Flowers pale purplish red, marked with purple spots. Dorsal sepal ovate, concave, ca. 4 × 2.2 mm, glabrous, entire, acute; lateral sepals adnate to column foot, ovate, ca. 5 × 2.2 mm, glabrous, their lower edges connate to each other, entire, acute. Petals triangular, ca. 2.2 × 1.2 mm, base ca. 1/2 width adnate to column foot, margin entire, apex acute; lip ligulate, ca. 3.2 mm, ± fleshy, base grooved, attached to end of column foot by an immobile joint, margin decurved. Column ca. 2 mm; foot ca. 1.5 mm, with free part ca. 1 mm; stelidia narrowly lanceolate, ca. 0.6 mm; anther cap slightly and minutely papillate. Fl. Jan–Feb. 2n = 38.

Tree trunks in forests; 800–1800 m. S Yunnan [India, Myanmar, Nepal, Thailand].


落叶石豆兰  luo ye shi dou lan

*Stelis hirta* Smith in Rees, Cyc. 34: Stelis no. 11. 1816; *Phylankis hirta* (Smith) Kuntze; *Trichobracte hirta* (Smith) Lindley.
Rhizome creeping and rooting, 3–4 mm in diam. Pseudobulbs 5–10 mm apart from each other, ovoid-conic, 1.5–3 cm, ca. 1 cm in diam., with 2 leaves at apex. Leaves deciduous at anthesis; petiole ca. 5 mm; blade elliptic or oblong, ca. 12 × 2.5–3 cm, leathery, apex obtuse. scape arising from base of leafless pseudobulb, to 15 cm; raceme pendulous, ca. 5 cm, with pubescent rachis, densely with many small flowers; peduncle ca. 3 mm in diam., with 2 or 3 tubular sheaths; floral bracts ovate, ca. 0.7 mm, apex acute, ciliate. Pedicel and ovary pubescent, ca. 1 mm. Flowers greenish white. Sepals free; dorsal sepal lanceolate, ca. 4.5 × 2 mm, abaxially densely pubescent, apex acute and slightly curved; lateral sepals slightly larger than dorsal sepal, obliquely ovate-lanceolate, abaxially densely pubescent, base adnate to column foot, apex acute. Petals oblanceolate, ca. 2 × 1.5 mm, membranous, margins fimbriate-ciliate; lip recurved, ± conduplicate, narrowly oblong, fleshy, ciliate, base attached to end of column foot by an immobile joint, apex retuse. Column ca. 1.5 mm; stelidia subulate, nearly as high as anther, ca. 0.5 mm; foot ca. 2.7 mm, with free part ca. 0.7 mm; anther cap papillate. Fl. Jul.

Tree trunks in evergreen broad-leaved forests; ca. 1800 m. S Yunnan [NE India, Myanmar, Nepal, Thailand, Vietnam].


直葶石豆兰 zhi ting shi dou lan

Rhizome creeping, ca. 1.5 mm in diam. Pseudobulbs ca. 1 cm apart on rhizome, ovoid, ca. 8 mm, ca. 5 mm in diam., with 2 leaves at apex. Leaves deciduous at anthesis, not seen. Scape from base of leafless pseudobulb, erect, ca. 8 cm; peduncle slender, with 2 or 3 sheaths ca. 4 mm; raceme sparsely with several secund flowers; rachis glabrous; floral bracts ovate, 1.5–2 mm, apex acute. Pedicel and ovary ca. 4 mm. Flowers thinly textured, pale yellow. Dorsal sepal ovate, ca. 4 × 2.2 mm, entire, acute; lateral sepals ovate-lanceolate, ca. 6 × 2 mm, base adnate to column foot, margin entire, apex acute. Petals ovate-lanceolate, ca. 2.8 × 1.2 mm, base ca. 1/2 width adnate to column foot, apical margin ± denticulate, apex obtuse; lip recurved, narrowly oblong, ca. 3.5 × 0.7 mm, fleshy, centrally channeled at base, adaxially densely finely papillate, apex obtuse. Column ca. 1.5 mm; foot ca. 1.5 mm, with free part ca. 0.5 mm; stelidia dentate, apex subulate; anther cap subglobose, finely papillate. Fl. Mar.

Tree trunks in evergreen broad-leaved forests; ca. 900 m. S Yunnan [Myanmar, N Thailand].