

176. PHALAEENOPSIS Blume, Bijdr. 294. 1825.

蝴蝶兰属 hu die lan shu

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

Kingidium P. F. Hunt; *Kingiella* Rolfe; *Polychilos* Breda.

Herbs, terrestrial, lithophytic, and epiphytic, monopodial. Stems short, leafy, concealed by overlapping persistent leaf sheaths, rooting at base. Leaves persistent or sometimes deciduous, alternate, distichous, oblong to broadly elliptic, sometimes marbled or suffused with purple or silver, succulent. Inflorescences erect to laxly pendulous, axillary pedunculate racemes or panicles; peduncle terete; rachis terete or bilaterally compressed, rarely swollen relative to peduncle; floral bracts persistent, inconspicuous, succulent or papery. Flowers often fragrant, few to many, resupinate, produced simultaneously or in succession over time, often long-lasting, inconspicuous to showy, plain or variously spotted, marbled, or barred, membranous to thickly fleshy. Pedicel and ovary terete, slender, shallowly 6-sulcate. Sepals and petals free, spreading, subsimilar to dimorphic, lateral sepals usually oblique and larger than dorsal sepal. Lip 3-lobed, clawed, continuous with foot, sometimes saccate or subsaccate; lateral lobes erect and subparallel, often callose; mid-lobe oblong-elliptic to obtusulate, rarely transverse, apex sometimes with a pair of tendril-like appendages (cirri), sometimes pubescent to villous, callus uni-, bi-, or triseriate, longitudinal, rarely transverse; column stout, often subtended by a pair of fleshy kneelike protrusions, without wings, with a foot, usually dilated lateral to stigma. Pollinia 2 or 4, on a common spatulate stipe and viscidium. Capsule pedicellate.

Between 40 and 45 species: from India to S China, Thailand, Indochina, Malaysia, and Indonesia to the Philippines and New Guinea, the majority in Indonesia and the Philippines; 12 species (four endemic) in China.

The genus *Phalaenopsis* has been monographed by Christenson (*Phalaenopsis* Monogr. 2001).

Phalaenopsis decumbens (Griffith) Holttum (Bull. Gard. Singapore 11: 286. 1947; *Aerides decumbens* Griffith, Not. Pl. Asiat. 3: 365. 1851), described from Myanmar, has been noted from Hainan (Press et al., Annot. Checkl. Fl. Pl. Nepal, 223. 2000). However, the present authors found no relevant specimens and therefore could not substantiate the occurrence of this species in China.

- 1a. Roots strongly flattened; leaves deciduous; inflorescences few flowered; floral bracts small, scarious; lateral lobes of lip with flaplike flanges; callus biseriate; pollinia 4, on a spatulate stipe (*P.* subg. *Aphyllae* (H. R. Sweet) Christenson).
- 2a. Spur prominent, a continuation of angle formed by junction of lip mid-lobe and lateral lobes.
 - 3a. Dorsal sepal 8–9 mm; flowers pink; column stout, broadly dilated at stigma; lip mid-lobe flat 1. *P. taenialis*
 - 3b. Dorsal sepal 12–15 mm; flowers green or green suffused with bronze; column cylindric, not dilated at stigma; lip mid-lobe convex 2. *P. braceana*
- 2b. Spur not prominent, apparently absent or forming a small nipple-shaped structure beneath posterior callus.
 - 4a. Lip mid-lobe obcordate with a central apical fleshy knob 3. *P. wilsonii*
 - 4b. Lip mid-lobe not obcordate, without a terminal notch.
 - 5a. Flowers deep green; lip mid-lobe oblanceolate, without any conspicuous constriction 4. *P. stobartiana*
 - 5b. Flowers rose-pink; lip mid-lobe with a conspicuous constriction.
 - 6a. Lip mid-lobe flared below apex producing a 3-lobulate mid-lobe; flowers pink 5. *P. hainanensis*
 - 6b. Lip mid-lobe widest below apex, apical margin reflexed along midvein, forming a subtubular apex that may appear emarginate in natural position; flowers pink or pale green ... 6. *P. honghenensis*
- 1b. Not with above combination of characters.
 - 7a. Leaves deciduous or evergreen; pollinia 4; lip mid-lobe mobile; lip lateral lobes erect, subparallel, diverging in middle to form a U-shaped compound structure; column with prominent swellings at base (*P.* subg. *Parishianae* (H. R. Sweet) Christenson).
 - 8a. Lip mid-lobe white and orange or orange-yellow, broadly triangular, 4–5 mm, 3-lobulate; basal callus deeply forked, with a crested crescent-shaped appendage in middle, each arm of callus dividing into 2 filiform-linear antennae to 3 mm 7. *P. malipoensis*
 - 8b. Lip mid-lobe white with 2 broad longitudinal chestnut-brown stripes, reniform or subtriangular, 9–11 mm, rounded-obtuse; basal callus of 4 filiform appendages superposed over a semicircular, ± reniform callus with minutely irregularly subdenticulate margins 8. *P. lobbii*
 - 7b. Not with above combination of characters.
 - 9a. Lip mid-lobe anchor-shaped; lateral lobes of lip producing a raised tooth along leading edge; flowers produced simultaneously; petals conspicuously narrower than sepals; callus triseriate; sepals and petals pale yellow with dark brown spots and bars; lip slightly saccate at base created by folding (*P.* subg. *Polychilos* (Breda) Christenson) 9. *P. mannii*
 - 9b. Lip mid-lobe not as above; lateral lobes of lip smooth, lacking a toothlike ridge; callus solitary; flowers essentially unmarked, white or pink (*P.* subg. *Phalaenopsis*).

- 10a. Petals much broader than sepals; flowers white, callus variably marked with yellow and red; mid-lobe of lip subrhombic, with 2 long apical tails (cirri); callus solitary, erect, upper edge terminating in 2 pairs of subparallel teeth 10. *P. aphrodite*
- 10b. Petals and sepals subsimilar; other characters not as above combination.
 - 11a. Lateral lobes of lip with toothlike flaps, obliquely elliptic-obovate, spreading; callus uniseriate, longitudinal, bifid; flowers produced sequentially over long periods 11. *P. deliciosa*
 - 11b. Lateral lobes of lip without toothlike flaps, oblong-oblancoate, erect-incurved; callus uniseriate, peltate, quadrangular, apex truncate; flowers all opening simultaneously 12. *P. equestris*

1. Phalaenopsis taenialis (Lindley) Christenson & Pradhan, Indian Orchid J. 1: 154. 1985.

小尖囊蝴蝶兰 xiao jian nang hu die lan

Aerides taenialis Lindley, Gen. Sp. Orchid. Pl. 239. 1833 [“*taeniale*”]; *Biermannia taenialis* (Lindley) Tang & F. T. Wang; *Doritis taenialis* (Lindley) J. D. Hooker; *Kingidium taeniale* (Lindley) P. F. Hunt; *Kingiella taenialis* (Lindley) Rolfe; *Polychilos taenialis* (Lindley) Shim.

Roots flattened, long, ± verrucose. Stems inconspicuous. Leaves basal, few, often deciduous at anthesis or during dry season, usually only 1 leaf persistent; leaf blade suboblong, 1–3.5 × 4–13 mm. Inflorescence borne from base of stem, 6.5–19 cm, unbranched, 1- or 2-flowered; rachis 5–10 mm; floral bracts ovate-triangular, ca. 3 mm, acute. Flowers opening widely, sepals and petals pale pink, lip and anther cap rose-purple; pedicel and ovary ca. 1.5 cm. Dorsal sepal oblong, 8–9 × ca. 4 mm, obtuse; lateral sepals subelliptic, ca. 9.5 × 4.5 mm, base adnate to column foot, apex obtuse. Petals obovate-spatulate, ca. 9 × 4 mm, rounded; lip 3-lobed; lateral lobes erect, subfusiform, ca. 5 × 1.5 mm, adaxially with a slightly thickened longitudinal ridge close to proximal margin, apex subtruncate; mid-lobe flat, spatulate, ca. 7 × 3 mm, base with a broad furcate-lobed appendage, apex rounded; spur ca. 3 mm; callus biseriate, posterior callus fleshy, bidentate, on back wall of spur, anterior callus ligulate, deeply bifid, attached to front wall at base of mid-lobe. Column ca. 5 mm, stout, broadly dilated at stigma, foot ca. 3 mm; anther cap subglobose, apex slightly mucronulate. Fl. Jun. *2n* = 36, 38, 40, 57.

Epiphytic on tree trunks in forests; 1100–2200 m. S Xizang, NW to SE Yunnan [Bhutan, NE India, Myanmar, Nepal, Thailand].

2. Phalaenopsis braceana (J. D. Hooker) Christenson, Selbyana 9: 169. 1986.

尖囊蝴蝶兰 jian nang hu die lan

Doritis braceana J. D. Hooker, Fl. Brit. India 6: 196. 1890; *Biermannia navicularis* (Z. H. Tsi ex Hashimoto) Tang & F. T. Wang ex O. Gruss & Roellke; *Kingidium braceanum* (J. D. Hooker) Seidenfaden; *K. naviculare* Z. H. Tsi ex Hashimoto.

Roots flattened, long, densely verrucose. Stems inconspicuous. Leaves 1 or 2, deciduous, rarely present, oblong-elliptic, to 2.4 × 0.8 cm, subacute. Inflorescences 1–3, from base of stem, pendulous or arching, 12–26 cm, unbranched, laxly many flowered; rachis dark green, 6–13 cm; floral bracts lanceolate, 3–5 mm, acuminate. Flowers opening widely, variable in color, sepals and petals yellow, green, or greenish bronze variously suffused pink, lip dark rose; pedicel and ovary yellowish green,

1.5–2.5 cm. Sepals obovate-oblong, 10–15 × 5–6 mm, obtuse; lateral sepals base ca. 1/2 width adnate to column foot. Petals subspatulate, 10–13 × 3–4.5 mm, base clawed, apex rounded; lip 3-lobed; lateral lobes erect, suboblong, ca. 6 × 3 mm, adaxially with a high lamella close to proximal margin, apex rounded; mid-lobe erect, elliptic, convex, 7–8 × 3–4 mm, slightly beaked, margin recurved, base with a flattened, furcate appendage; spur narrowly conic, ca. 3 mm; callus biseriate, basal callus fleshy, bifid with tips recurved and hornlike, on back wall of spur, apical callus slender, bifid, on front wall of spur becoming free at base of mid-lobe. Column cylindrical, ca. 5 mm, foot ca. 2 mm; anther cap white, subglobose; stipe spatulate, ca. 3.5 mm; viscidium elliptic. Fl. May.

On tree trunks in open forests; 1100–2000 m. S and SW Yunnan [Bhutan, N Vietnam].

3. Phalaenopsis wilsonii Rolfe, Bull. Misc. Inform. Kew 1909: 65. 1909.

华西蝴蝶兰 hua xi hu die lan

Doritis wilsonii (Rolfe) T. Yukawa & K. Kita; *Kingidium wilsonii* (Rolfe) O. Gruss & Roellke; *Phalaenopsis minor* F. Y. Liu; *Polychilos wilsonii* (Rolfe) Shim.

Roots well developed, ± greenish, elongate, slightly flattened, densely verrucose. Stems ca. 1 cm, usually 4- or 5-leaved, leafless or with 1 or 2 small leaves at anthesis. Leaves often deciduous in dry season, sometimes purplish reddish abaxially when young, oblong or subelliptic, 6.5–8 × 2.6–3 cm. Inflorescences often 1 or 2, suberect or arching, 4–8.5 cm, unbranched, laxly 10–15-flowered; floral bracts ovate-triangular, 4–5 mm, membranous. Flowers opening simultaneously, opening widely; sepals and petals pastel pink grading to medium rose at base, lip dark rose-purple, column white; pedicel and ovary 3–3.8 cm. Sepals oblong-elliptic, 15–20 × 6–7 mm, obtuse. Petals spatulate or elliptic-obovate, 14–15 × 6–10 mm, rounded; lip base with a claw 2–3 mm, lip 3-lobed; lateral lobes erect, ca. 6 mm, adaxially with an incised-tipped keel; mid-lobe broadly obovate, 8–13 × 6–9 mm, fleshy, notched at apex, convex, with a raised elliptic pad below apex, with a raised median keel at base; callus biseriate, subsimilar and subequal, sulcate, bilobed. Column ca. 6 mm, foot ca. 3 mm. Capsule cylindrical, to 7 cm × ca. 6 mm. Fl. Apr–Jul, fr. Aug–Sep.

Epiphytic on tree trunks or lithophytic on damp rocks in forests or along valleys; 800–2200 m. W Guangxi, SW Guizhou, SW Sichuan, SE Xizang, NW to SE Yunnan [N Vietnam].

4. Phalaenopsis stobartiana H. G. Reichenbach, Gard. Chron., n.s., 8: 392. 1877.

滇西蝴蝶兰 dian xi hu die lan

Doritis stobartiana (H. G. Reichenbach) T. Yukawa & K. Kita; *Kingidium stobartianum* (H. G. Reichenbach) Seidenfaden; *Phalaenopsis wightii* H. G. Reichenbach var. *stobartiana* (H. G. Reichenbach) Burbidge; *Polychilos stobartianus* (H. G. Reichenbach) Shim.

Stems very short, usually 3- or 4-leaved. Leaves often deciduous during dry season, but present at anthesis, ovate-lanceolate, oblong, or elliptic, 7–11 × 3–3.4 cm. Inflorescences 1 or 2, often ascending, 7–37 cm, unbranched, laxly 2–4-flowered; floral bracts ovate-triangular, 4–5 mm. Flowers opening widely, sepals and petals apple-green to dark olive-green, lip and column brilliant rose; pedicel and ovary 4–4.3 cm. Dorsal sepal oblong-elliptic, ca. 14 × 6 mm, base slightly contracted, apex obtuse; lateral sepals slightly oblique, ovate-elliptic, ca. 14 × 7 mm, subacute. Petals elliptic-obovate, ca. 14 × 6 mm, obtuse; lip base with a claw ca. 1 mm, lip 3-lobed; lateral lobes ca. 7 × 3.5 mm, narrow; mid-lobe obovate-elliptic, ca. 8 × 5 mm, narrowed toward base, apex mucronate, base with a deeply bilobed-tipped appendage, with a central longitudinal keel thickened toward base; callus concave adaxially and distinctly convex abaxially on disk. Column ca. 7 mm, base dilated, foot ca. 2 mm. Fl. May–Jun.

- Epiphytic on tree trunks in forests; 1300–1400 m. W Yunnan.

5. *Phalaenopsis hainanensis* Tang & F. T. Wang, Acta Phytotax. Sin. 12: 47. 1974.

海南蝴蝶兰 hai nan hu die lan

Doritis hainanensis (Tang & F. T. Wang) T. Yukawa & K. Kita; *Phalaenopsis chuxiongensis* F. Y. Liu.

Stems 1–1.5 cm, enclosed in leaf sheaths, 3- or 4-leaved. Leaves often deciduous at anthesis, or sometimes leaving a small leaf, obliquely oblong, ca. 4 × 1 cm, retuse. Inflorescences usually 1 or 2, ascending, to 55 cm, sometimes branched, laxly 8–10-flowered; rachis 27–30 cm; floral bracts ovate, 3–4 mm. Flowers opening widely, pale pink, lip darker rose-pink; pedicel and ovary slender, 2–2.5 cm. Dorsal sepal oblong, ca. 13 × 3 mm, obtuse; lateral sepals obliquely elliptic, ca. 13 × 5.5 mm, acute. Petals spatulate, ca. 12 × 5–6 mm, base contracted into a short claw, apex obtuse; lip base with a claw ca. 1 mm, lip 3-lobed; lateral lobes erect, falcate-oblong, ca. 5 × 2.5 mm, obliquely truncate, adaxially with incised-tipped keels from middle to apex; mid-lobe obovate, ca. 7 × 5 mm, dorsally keeled, 3-lobulate, obtuse-rounded, with a pair of small subapical reflexed flaps; callus biseriolate, base of lip with a low bifid callus, base of mid-lobe with a larger, suberect pair of teeth. Column ca. 7 mm, foot short. Fl. Jul.

- Lithophytic on rocks in forests. C and S Hainan, Yunnan.

6. *Phalaenopsis honghenensis* F. Y. Liu, Acta Bot. Yunnan. 13: 373. 1991.

红河蝴蝶兰 hong he hu die lan

Doritis honghenensis (F. Y. Liu) T. Yukawa & K. Kita.

Roots minutely warty. Stems to 1 cm, 1- or 2-leaved. Leaves obliquely elliptic, 5–7 × 1.5–2.5 cm, acute at apex, sheathing bases persistent, spotted purple-red. Inflorescences

racemose, to 7.7 cm, 3–6-flowered; floral bracts ovate, to 6 mm. Flowers to 2.9 cm in diam., sepals and petals ranging from rose-pink to pale green, lip purple; pedicel and ovary 1.6–2.2 cm. Dorsal sepal oblong-elliptic, ca. 1.3 × 0.6 cm, obtuse; lateral sepals obliquely elliptic-ovate, ca. 1.3 × 0.6 cm, obtuse. Petals spatulate, ca. 1.1 × 0.6 cm, obtuse; lip minutely spurred, 3-lobed; lateral lobes oblong, ca. 7 × 2 mm, obliquely truncate; mid-lobe oblong, ca. 8 × 2 mm, tapered at both ends, apex obtuse; spur nipplelike, to 1.5 mm; callus biseriolate: posterior callus fleshy, bifid, terminating at base of mid-lobe; anterior callus platelike, bifid, extending beyond base of mid-lobe. Column to 9 mm, stout, conspicuously dilated to either side of stigma.

- About 2000 m. Yunnan.

One of us (Chen) would prefer to treat this taxon as a synonym of *Phalaenopsis braceana*.

7. *Phalaenopsis malipoensis* Z. J. Liu & S. C. Chen, Acta Bot. Yunnan. 27: 37. 2005.

麻栗坡蝴蝶兰 ma li po hu die lan

Roots flattened, to 50 cm. Stems short, enclosed in leaf sheaths. Leaves 3–5, subbasal, deciduous, or 1 or 2 persistent in winter, oblong to elliptic, 4.5–7 × 3–3.6 cm, base broadly cuneate-rounded, apex obliquely obtuse to acute. Inflorescences 3 or 4, arising from base of stem, racemose, 8–15 cm, laxly 3- or 4-flowered; peduncle green, with 2–4 membranous sheaths; rachis straight; floral bracts yellow-green, triangular-lanceolate, 2–4 mm, acuminate. Flowers 1.2–1.6 cm in diam., sepals and petals white, sometimes tinged yellowish, lip white and orange or orange-yellow, tinged brownish on disk and central part of mid-lobe, column white with 1 or 2 crescent-shaped or semiorbicular brown markings at base in front; pedicel and ovary white tinged pale green, 1–1.3 cm. Dorsal sepal oblong-elliptic, 7–9 × 3–4 mm, obtuse; lateral sepals obliquely ovate-elliptic, 6–7 mm, 4–5 mm wide at base, base adnate to column foot, sometimes dorsally carinate. Petals spatulate or narrowly obovate, 6–8 × 2–3 mm, rounded; lip 3-lobed; lateral lobes erect, subparallel, diverging in middle to form a U-shaped compound structure, sublanceolate, 2–3 mm, with 2 orange and brownish tinged calli on disk in between; mid-lobe mobile, broadly triangular, 4–5 × 6–7 mm, 3-lobulate; basal callus deeply forked, with a crested crescent-shaped appendage transversely lying near middle, each arm of callus dividing into 2 filiform-linear antennae to 3 mm. Column 4–5 mm, foot 1–2 mm. Fl. Apr–May.

- Epiphytic on trees in sparse forests and on forest margins; 600–1300 m. S Yunnan (Lincang, Malipo).

8. *Phalaenopsis lobbii* (H. G. Reichenbach) H. R. Sweet, Gen. Phalaenopsis, 53. 1980.

罗氏蝴蝶兰 luo shi hu die lan

Phalaenopsis parishii H. G. Reichenbach var. *lobbii* H. G. Reichenbach, Refug. Bot. (Saunders) 2: ad t. 85. 1869; *Doritis lobbii* (H. G. Reichenbach) T. Yukawa & K. Kita; *Polychilos lobbii* (H. G. Reichenbach) Shim.

Roots copious, flattened. Stems clustered, abbreviated, branching basally. Leaves 2–4, subbasal, broadly elliptic, 5–8 ×

3.5–4 cm, obliquely bilobed. Inflorescences erect racemes, 5–10 cm, 2–4-flowered; floral bracts minute, elliptic, obtuse. Flowers white, swollen base of column with a few irregularly distributed brown spots, with a regular pair of darker brown spots below apices of swellings, leading edges of lateral lobes of lip brown spotted, mid-lobe white with 2 broad, longitudinal chestnut-brown stripes; pedicel and ovary to 1.5 cm. Dorsal sepal oblong-elliptic, concave, to 10 × 5 mm, obtuse; lateral sepals somewhat reflexed, obliquely ovate to suborbicular, to 8 × 7 mm, obtuse-rounded, adnate to column foot. Petals obovate-subspatulate, to 8 × 4 mm, obtuse-rounded; lip 3-lobed; lateral lobes erect, falcate, parallel to middle and then diverging and forming a U-shaped structure, to 3 × 1 mm, acute; mid-lobe reniform, to 6 × 10 mm, concave with lateral margins shallowly incurved, rounded-obtuse; basal callus of 4 filiform appendages superposed over a semicircular, ± reniform callus with minutely irregularly subdenticulate margins. Column to 5 mm, somewhat arcuate. Fl. Mar–May.

Epiphytic on tree trunks in open forests; below 600 m. SE Yunnan (Malipo) [Bhutan, India, Myanmar, Vietnam].

A recent record of *Phalaenopsis lobbii* from Lincang, Yunnan (Q. Liu et al., Acta Phytotax. Sin. 45: 855–856. 2007), refers in fact to *P. malipoensis*.

9. Phalaenopsis mannii H. G. Reichenbach, Gard. Chron. 1871: 902. 1871.

版纳蝴蝶兰 ban na hu die lan

Polychilos mannii (H. G. Reichenbach) Shim.

Stems stout, 1.5–7 cm, rooting from nodes, 4- or 5-leaved. Leaves oblong-oblancoate, 20–23 × 5–6 cm, base cuneate, apex acute. Inflorescences 1 or 2, ascending or pendulous, 5.5–30 cm, unbranched or sometimes branched, sparsely few to many flowered; floral bracts lanceolate, 6–10 mm. Flowers opening widely, long-lasting, thickly textured, waxy, glossy, sepals and petals yellow with dark brown spots and bars, lip mid-lobe white, column yellow; pedicel and ovary 2–3 cm. Dorsal sepal obovate-lanceolate, 15–18 × 5–7 mm, acute; lateral sepals obliquely ovate-elliptic, 15–18 × 7–9 mm, acute. Petals suboblong, 13–15 × 4–5 mm, acute; lip ca. 1 cm, base with a claw ca. 1 mm, 3-lobed; lateral lobes erect, appressed, oblong-subquadrate, ca. 4 × 2 mm, obliquely truncate; mid-lobe transverse, anchor-shaped, margin fimbriate-erose, apex a swollen knob with sparse trichomes; callus triseriate: posterior callus a small glandular patch, middle callus a bifid plate with long filiform divisions, anterior callus an erect, bilaterally compressed tooth. Column ca. 8 mm, with prominent basal knees, foot ca. 4 mm. Fl. Mar–Apr. $2n = 38$.

Epiphytic on tree trunks in broad-leaved evergreen forests; 900–1400 m. S Yunnan [Bhutan, NE India, Myanmar, Nepal, Vietnam].

10. Phalaenopsis aphrodite H. G. Reichenbach, Hamburger Garten-Blumenzeitung 18: 35. 1862.

蝴蝶兰 hu die lan

Stems very short, stout. Leaves 3 or 4, green, often suffused red abaxially, elliptic, oblong, or falcate-oblong, 8–22 × 3–7 cm, base cuneate or sometimes oblique, apex acute or

obtuse. Inflorescence to 50 cm, unbranched or sometimes branched, many flowered; rachis purplish green, ± flexuous; floral bracts ovate-triangular, 3–5 mm. Flowers mainly white, 5–6 cm in diam., lateral lobes of lip with red spots or lines, callus yellow, spotted green; pedicel and ovary green, slender, 2.5–4.5 cm. Dorsal sepal ovate-elliptic or subelliptic, 2.5–4 × 1.5–2.5 cm, base slightly contracted, apex obtuse; lateral sepals obliquely ovate, 2.5–3.5 × 1.4–2.2 cm, acute. Petals rhombic-obovate, 2.7–3.4 × 2.4–3.8 cm, base narrowed into a short claw, apex rounded; lip 3-lobed, base with a linear claw 7–9 mm; lateral lobes erect, falcate-obovate, ca. 2 cm, base contracted, apex rounded or acute; mid-lobe subrhombic, 2.8–3.5 × 1.4–1.7 cm, base cuneate, with 2 slender apical tails (cirri) 8–18 mm; disk with a forked callus between lateral lobes. Column ca. 1 cm, stout, foot broad; stipe ca. 4.5 mm. Fl. Apr–Jun. $2n = 38$.

Epiphytic on tree trunks in lowland forests or thickets. S Taiwan [Philippines].

- 1a. Leaves usually suffused red abaxially; inflorescences racemose or few-branched panicles; flowers large 10a. subsp. *aphrodite*
- 1b. Leaves apple-green, without red suffusion abaxially; inflorescences much-branched panicles; flowers somewhat smaller 10b. subsp. *formosana*

10a. Phalaenopsis aphrodite subsp. *aphrodite*

蝴蝶兰(原亚种) hu die lan (yuan ya zhong)

Phalaenopsis amabilis Blume var. *aphrodite* (H. G. Reichenbach) Ames.

Leaves usually suffused red abaxially. Inflorescences racemose or few-branched panicles. Flowers large.

Epiphytic on tree trunks in lowland forests or thickets. S Taiwan [Philippines].

10b. Phalaenopsis aphrodite subsp. *formosana* Christenson, Phalaenopsis Monogr. 197. 2001.

台湾蝴蝶兰 tai wan hu die lan

Leaves apple-green, without any red pigmentation. Inflorescences paniculate, much-branched, producing side branches even from most basal nodes. Flowers somewhat smaller than subsp. *aphrodite*.

• S Taiwan (?extinct) and outlying islands (Babuyan, Huoshao Dao, Lan Yu).

11. Phalaenopsis deliciosa H. G. Reichenbach, Bonplandia 2: 93. 1854.

大尖囊蝴蝶兰 da jian nang hu die lan

Aerides latifolia Thwaites; *Doritis deliciosa* (H. G. Reichenbach) T. Yukawa & K. Kita; *D. latifolia* (Thwaites) Bentham & J. D. Hooker; *D. wightii* (H. G. Reichenbach) Bentham & J. D. Hooker; *Kingidium deliciosum* (H. G. Reichenbach) Sweet; *K. wightii* (H. G. Reichenbach) O. Gruss & Roellke; *Phalaenopsis wightii* H. G. Reichenbach.

Stems 1–1.5 cm. Leaves 3 or 4, persistent at anthesis; leaf blade obovate-lanceolate or elliptic, 8–14.5 × 3–5.5 cm, papery, margin undulate, apex acute and slightly curved. Inflorescence often pendulous, 10–15 cm, upper part sometimes branched, densely several flowered; rachis dark green, 1.5–2.5 cm; floral bracts ovate-triangular, ca. 1 mm, acute. Flowers produced continuously and sequentially over long periods, whitish with pale purple stripes or markings; pedicel and ovary yellowish green, 0.4–0.5 cm. Dorsal sepal subelliptic, 6–7 × 3–3.5 mm, obtuse; lateral sepals obliquely ovate, 5.5–6 × 3.5–4 mm, base adnate to column foot, apex obtuse. Petals subobovate, 5–5.5 × 2.7–3 mm, obtuse; lip not clawed at base, 3-lobed; lateral lobes erect, obliquely elliptic-obovate, ca. 4 × 2.5 mm, rounded, with tooth-like flaps, base decurrent and forming a broadly conic spur with base of mid-lobe, adaxially with a high lamella; mid-lobe spreading horizontally, obovate-cuneate, ca. 6 × 5 mm, apex deeply emarginate, with a thickened central longitudinal ridge, base with a flattened appendage; appendage Y-shaped, apex deeply furcate-bilobed. Column ca. 3 mm, foot ca. 2 mm; anther cap nearly subglobose, apex subtruncate and emarginate; stipe spatulate, ca. 2 mm; viscidium subelliptic. Fl. Jul. $2n = 38$.

Epiphytic on tree trunks in forests, lithophytic on rocks along valleys; 300–1600 m. S and W Hainan, S and SE Yunnan [Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Vietnam].

Phalaenopsis deliciosa subsp. *hookeriana* (O. Gruss & Roellke) Christenson (Phalaenopsis Monogr. 223. 2001; *Kingidium hookerianum* O. Gruss & Roellke, Die Orchidee 46(1): 23. 1995) has somewhat larger, fuller, yellow flowers and appears to represent a well-defined subspecies, although the exact range is unknown (NE India, Myanmar, and probably China). The name *Doritis wightii*, based on a white-flowered plant from S India, has been consistently misapplied to these plants when exported.

12. *Phalaenopsis equestris* (Schauer) H. G. Reichenbach, *Linnaea* 22: 864. 1849.

小兰屿蝴蝶兰 xiao lan yu hu die lan

Stauroglottis equestris Schauer, Nov. Actorum Acad. Caes. Leop.-Carol. Nat. Cur. 19(Suppl. 1): 432. 1843; *Phalaenopsis riteiwanensis* Masamune.

Stems very short, 3- or 4-leaved. Leaves linear-ligulate or narrowly oblong, 10–24 × 3–5 cm, base cuneate, apex obtuse or unequally bilobed. Inflorescence to 30 cm, unbranched or sometimes branched, laxly many flowered; rachis dark purple, flexuous; floral bracts 2–4 mm. Flowers ca. 2 cm in diam., variable in color, typically sepals and petals white or pale pink with a central pink suffusion, lip rose or red, callus white or yellow, sometimes spotted rose or red, column rose, anther cap white; pedicel and ovary slender, 2–2.5 cm. Dorsal sepal oblong, 11–14 × 5–7 mm, acute; lateral sepals falcate-ovate, 10–14 × 6–7 mm. Petals oblong-obovate or rhombic, 10–12 × 4–7 mm, base

contracted and adnate to column foot, apex acute; lip base with a claw ca. 1.5 mm, lip 3-lobed; lateral lobes erect-incurved, oblong-obovate, 5–6.5 × 2–3 mm, rounded; mid-lobe spreading horizontally, ovate-elliptic, 9–11 × 7–8 mm, acute; callus solitary, peltate, quadrangular with a truncate apex. Column 6–9 mm, slender, foot ca. 3 mm; stipe ca. 3 mm; viscidium ovate-lanceolate, ca. 1 mm. Fl. Apr–May. $2n = 38$.

S Taiwan [Philippines].

