

73. **BLETILLA** H. G. Reichenbach, Fl. Serres Jard. Eur. 8: 246. 1853, nom. cons.

白及属 bai ji shu

Chen Xinqi (陈心启 Chen Sing-chi); Stephan W. Gale, Phillip J. Cribb

Jimensia Rafinesque.

Herbs, terrestrial. Rhizome tuberous, irregularly shaped, with many long, fibrous roots. Stem erect, enclosed by tubular sheaths, leafy. Leaves 2–6, erect or suberect, plicate, narrowly oblong-lanceolate to linear-lanceolate. Inflorescence erect, terminal, racemose, few flowered, glabrous; peduncle terete, usually with 1 or more short sterile bracts; rachis short, somewhat flexuous, simple or occasionally branched; floral bracts lanceolate, caducous. Flowers resupinate, showy, white, pink, purple, or yellow; pedicel and ovary cylindrical, slender. Sepals and petals similar, free, spreading; lip 3-lobed above middle, porrect, not spurred; lateral lobes erect and embracing column; disk with 3 or 5 lamellate ridges. Column arcuate, slender, winged, lacking a column foot; anther subterminal, incumbent, 2-locular; pollinia 8, in 2 groups of 4, oblong and laterally compressed, equal in size or one group slightly smaller, granular-farinaceous, with inconspicuous caudicles and viscidia; stigma suborbicular to transversely elliptic, lying directly below rostellum; rostellum truncate, projecting forward over stigma. Capsule erect, oblong-fusiform.

About six species: from N Myanmar and Indochina through China to Japan; four species in China.

- 1a. Lip obscurely 3-lobed near apex to almost entire; disk with 3 longitudinal fimbriate lamellae 1. *B. sinensis*
- 1b. Lip conspicuously 3-lobed above middle; disk with 5 longitudinal undulate lamellae.
 - 2a. Sepals and petals pale yellowish green, rarely whitish; lateral lobes of lip with obtuse apices 4. *B. ochracea*
 - 2b. Sepals and petals pale purple, purplish red, or pink, rarely whitish; lateral lobes of lip with acute or subacute apices.
 - 3a. Lip with 5 longitudinal lamellae undulate throughout their length 2. *B. formosana*
 - 3b. Lip with 5 longitudinal lamellae only undulate on mid-lobe 3. *B. striata*

1. *Bletilla sinensis* (Rolfe) Schlechter, Repert. Spec. Nov. Regni Veg. 10: 256. 1911.

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Arethusa sinensis Rolfe, J. Linn. Soc., Bot. 36: 46. 1903; *Bletilla chinensis* Schlechter; *Jimensia sinensis* (Rolfe) Garay & R. E. Schultes.

Plants 15–20 cm tall. Rhizome subglobose, 1–1.5 cm in diam. Stem short, to ca. 3 cm, stout, enclosed by leaf bases and tubular sheaths, 2- or 3-leaved. Leaves basal, elliptic-lanceolate, 5–12 × 0.8–3 cm, base contracted into amplexicaul sheath, apex acute or acuminate. Peduncle 7–15 cm, slender, with 1 short sheathing bract; rachis flexuous, 1–2 cm, simple, 1–3-flowered; floral bracts often deciduous at anthesis, oblong-lanceolate, 5–8 mm, usually much shorter than ovary, apex acute. Flowers suberect or nodding, pale purple; pedicel and ovary twisted, 7–9 mm. Sepals white, tinged with purple, linear-lanceolate, 11–13 × ca. 3 mm, apex subacute. Petals white, tinged with purple, lanceolate, 11–13 × 3–3.5 mm, apex acute; lip white, with small purplish spots and purple apex, narrowly rhombic-obovate, obscurely 3-lobed near apex to almost entire, concave, 11–13 × 5–6 mm, apical margin irregularly fimbriate-serrulate; disk with 3 longitudinal fimbriate lamellae. Column cylindrical, 8–9 mm, slender, dilated toward apex; rostellum large. Fl. May–Jun.

Forests. S Yunnan [Myanmar, Thailand].

2. *Bletilla formosana* (Hayata) Schlechter, Repert. Spec. Nov. Regni Veg. 10: 256. 1911.

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Bletia formosana Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 323. 1911; *B. kotoensis* Hayata; *B. morrisonicola* Ha-

yata; *Bletilla formosana* f. *kotoensis* (Hayata) T. P. Lin; *B. formosana* f. *rubrolabella* S. S. Ying; *B. kotoensis* (Hayata) Schlechter; *B. morrisonicola* (Hayata) Schlechter; *B. striata* (Thunberg) H. G. Reichenbach var. *kotoensis* (Hayata) Masamune; *B. szetschuanica* Schlechter; *B. yunnanensis* Schlechter; *B. yunnanensis* var. *limprichtii* Schlechter; *Jimensia formosana* (Hayata) Garay & R. E. Schultes; *J. kotoensis* (Hayata) Garay & R. E. Schultes; *J. morrisonicola* (Hayata) Garay & R. E. Schultes; *J. szetschuanica* (Schlechter) Garay & R. E. Schultes; *J. yunnanensis* (Schlechter) Garay & R. E. Schultes.

Plants 15–80 cm tall. Rhizome usually dorsiventrally compressed, subglobose to ovoid, 1–2 cm in diam. Stem 5–15 cm, enclosed by several tubular sheaths, 2–8-leaved. Leaves widely spaced along stem, linear-lanceolate to narrowly oblong, 6–40 × 0.5–1.5(–4.5) cm, base contracted into amplexicaul sheath, apex acuminate. Peduncle 20–60 cm, slender, usually with 1 short sheathing bract; rachis to 10 cm, flexuous, simple or occasionally branched, (1 or)2–6-flowered; floral bracts deciduous at anthesis, oblong-lanceolate, 10–13 mm, apex acuminate. Flowers erect or spreading, pale purple or pink, rarely white; pedicel and ovary twisted, 8–12 mm. Sepals pale purple or pink, rarely white, lanceolate to narrowly oblong, 15–21 × 4–6.5 mm, lateral ones slightly oblique, apex subacute. Petals similar to sepals but slightly narrower, oblique, pale purple or pink, rarely white; lip whitish to pale yellow with small dark purple spots and broken lines, broadly elliptic, 15–18 × 8–9 mm, 3-lobed above middle; lateral lobes erect and embracing column, obliquely suborbicular, apex acute; mid-lobe suborbicular to square, 4–5 × 4–5 mm, margin slightly crisped, apex obtuse-truncate or rarely slightly emarginate; disk with 5 undulate lamellae extending from base of lip almost to apex of mid-lobe. Column subterete, 12–13 mm, slender, dilated toward apex, with narrow wings; rostellum broadly suborbicular. Capsule to

ca. 2.5 cm. Fl. Apr–Jun. $2n = 16, 32, 36$.

Evergreen broad-leaved forests, *Quercus* forests, coniferous forests, grasslands, grassy slopes, crevices; 600–3100 m. SE Gansu, Guangxi, Guizhou, Jiangxi, S Shaanxi, Sichuan, Taiwan, SE Xizang, Yunnan [Japan (Ryukyu Islands)].

This species is thought to hybridize with *Bletilla ochracea* in the wild, and critical re-examination of *B. szetschuanica* and *B. yunnanensis*, treated as synonyms here, may reveal them to be natural hybrids.

3. *Bletilla striata* (Thunberg) H. G. Reichenbach, Bot. Zeitung (Berlin) 36: 75. 1878.

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Limodorum striatum Thunberg in Murray, Syst. Veg., ed. 14, 816. 1784; *Bletia gebina* Lindley; *B. hyacinthina* (Smith) Aiton; *B. hyacinthina* var. *gebina* (Lindley) Blume; *B. striata* (Thunberg) Druce; *Bletilla elegantula* (Kraenzlin) Garay & Romero; *B. gebina* (Lindley) H. G. Reichenbach; *B. hyacinthina* (Smith) H. G. Reichenbach; *B. striata* var. *albomarginata* Makino; *B. striata* f. *gebina* (Lindley) Ohwi; *B. striata* var. *gebina* (Lindley) H. G. Reichenbach; *Calanthe gebina* (Lindley) Lindley; *Coelogyne elegantula* Kraenzlin; *Cymbidium hyacinthinum* Smith; *C. striatum* (Thunberg) Swartz; *Epidendrum striatum* (Thunberg) Thunberg; *Jimensia nervosa* Rafinesque, nom. illeg. superfl.; *J. striata* (Thunberg) Garay & R. E. Schultes; *Limodorum hyacinthinum* (Smith) Donn.

Plants 18–60 cm tall. Rhizome dorsiventrally compressed, subglobose or irregularly shaped, 1–3 cm in diam. Stem 3–25 cm, stout, enclosing several long tubular sheaths, 4–6-leaved. Leaves widely spaced or clustered toward apex of stem, narrowly oblong to lanceolate-elliptic, 8–29 × 1.5–4 cm, base contracted into amplexicaul sheath, apex acuminate. Peduncle

14–34 cm, slender, usually with 1 sheathing bract; rachis flexuous, sometimes pendulous, 2–7 cm, simple or sometimes branched, 3–10-flowered; floral bracts usually deciduous at anthesis, oblong-lanceolate, 6–20 mm. Flowers erect or spreading, purplish red or pink, large; pedicel and ovary twisted, 10–24 mm. Sepals purplish red or pink, narrowly oblong, 14–30 × 4–8 mm, lateral ones slightly oblique, apex acute. Petals similar to but slightly larger than sepals, purplish red or pink, 14–32 × 4–11 mm, apex acute; lip white, tinged with purplish red, with purplish veins, obovate-elliptic, 14–28 × 10–18 mm, 3-lobed above middle; lateral lobes erect and embracing column, triangular to suborbicular, apex acute; mid-lobe square, 3–8 × 2–6 mm, margin slightly crisped, apex truncate; disk with 5 longitudinal lamellae extending from base of lip almost to apex of mid-lobe; lamellae undulate only on mid-lobe. Column subterete, 14–20 mm, slender, dilated toward apex, with narrow wings; rostellum large. Capsule to 3.4 cm. Fl. Apr–May. $2n = 32, 38, 76$.

Evergreen broad-leaved forests, *Quercus* forests, coniferous forests, grassy places, crevices; 100–3200 m. Anhui, Fujian, SE Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, Sichuan, Zhejiang [Japan, Korea, Myanmar].

4. *Bletilla ochracea* Schlechter, Repert. Spec. Nov. Regni Veg. 12: 105. 1913.

黄花白及 huang hua bai ji

Jimensia ochracea (Schlechter) Garay & R. E. Schultes.

Plants 25–55 cm tall. Rhizome somewhat dorsiventrally compressed, obliquely ovoid, ca. 2 cm in diam. Stem to ca. 8 cm, stout, 4-leaved. Leaves oblong-lanceolate, 8–35 × 1.5–2.8 cm, base contracted into amplexicaul sheath, apex acuminate or acute. Peduncle to ca. 40 cm, ebracteate; rachis flexuous, 3–8-flowered, simple or very rarely branched; floral bracts deciduous at anthesis, oblong-lanceolate, 18–20 mm, apex acute. Flowers erect or spreading, yellow; pedicel and ovary twisted, ca. 18 mm. Sepals and petals subequal in length, usually pale yellowish green, very rarely whitish, outer surface often with small purple spots, oblong, 18–23 × 5–7 mm, apex obtuse or subacute; lip ovate-elliptic, 15–20 × 8–12 mm, 3-lobed above middle; lateral lobes erect and embracing column, oblong, apex obtuse; mid-lobe subsquare, margin slightly undulate, apex emarginate; disk with 5 longitudinal lamellae extending from base of lip almost to apex of mid-lobe; lamellae undulate only on mid-lobe. Column 15–18 mm, with narrow wings. Fl. Jun–Aug.

Evergreen broad-leaved forests, coniferous forests, thickets, grasslands or shaded places along gullies; 300–2400 m. SE Gansu, Guangxi, Guizhou, Henan, Hubei, Hunan, S Shaanxi, Sichuan, Yunnan [Vietnam].

