

55. **MADDENIA** J. D. Hooker & Thomson, Hooker's J. Bot. Kew Gard. Misc. 6: 381. 1854.

臭櫻属 *chou ying shu*

Gu Cuizhi (谷粹芝 *Ku Tsue-chih*); Bruce Bartholomew

Trees or shrubs, deciduous, polygamous dioecious. Branches unarmed. Winter buds large, oblong to ovoid, with several scales. Stipules large, persistent, margin glandular. Leaves alternate, simple; leaf blade margin with gland-tipped simple, double, or incised teeth. Inflorescences inserted apically on branchlets, racemose, many flowered; bracts soon caducous. Pedicel short. Hypanthium campanulate. Sepals and petals essentially identical. Perianth segments 10–12, to 3 mm. Stamens 20–40, in 2 whorls, irregularly inserted on rim of hypanthium. Bisexual flowers: ovary superior, (1 or)2-loculed, glabrous; ovules 2 per locule, parallel, pendulous; style terminal, slender, ± as long as stamens; stigma disk-shaped. Female flowers: stamens reduced to staminodes; carpels 2; ovary glabrous; style much shorter than staminodes; stigma capitate. Fruit a 1- or 2-seeded drupe, oblong, ± flat; mesocarp thin, fleshy, not splitting when ripe; endocarp bony, ovoid, 3-angled, apex acute.

About seven species: Bhutan, China, Nepal, Sikkim; six species (five endemic) in China.

- 1a. Leaf blade abaxially glabrous; branchlets glabrous or pubescent.
  - 2a. Leaf blade abaxially whitish, glaucous, margin irregularly simply serrate or doubly serrate; secondary veins 14–18 on each side of midvein ..... 1. *M. hypoleuca*
  - 2b. Leaf blade abaxially green, not glaucous, margin doubly serrate or incised doubly serrate; secondary veins 9–15 on each side of midvein.
    - 3a. Branchlets densely pubescent; leaf blade 5–10(–15) × 3–5(–8) cm, margin incised doubly serrate ..... 2. *M. incisoserrata*
    - 3b. Branchlets sparsely pubescent; leaf blade 4–5 × 2–2.5 cm, margin not incised doubly serrate ..... 3. *M. fujianensis*
- 1b. Leaf blade abaxially densely pubescent at least on veins; branchlets densely pubescent.
  - 4a. Branchlets of first year's growth villous; winter buds purplish red; hypanthium villous; style ± as long as stamens ..... 6. *M. himalaica*
  - 4b. Branchlets of first year's growth pubescent or tomentose-pubescent; winter buds purplish brown; hypanthium pubescent; style longer than stamens.
    - 5a. Winter bud scales to 2 × 1 cm; stipules linear to lanceolate, herbaceous; inflorescence bracts lanceolate to ovate-lanceolate ..... 4. *M. hypoxantha*
    - 5b. Winter bud scales to 1.5 × 0.8 cm; stipules lorate-lanceolate, membranous; inflorescence bracts oblong .... 5. *M. wilsonii*

1. **Maddenia hypoleuca** Koehne in Sargent, Pl. Wilson. 1: 56. 1911.

臭櫻 *chou ying*

Trees 2–7 m tall. Branches purple, glabrous, lustrous; branchlets of first year's growth purplish red or greenish, pubescent, glabrescent. Winter buds purple, ovoid; scales to 10 × 8 mm, outside glabrous. Stipules lanceolate, ca. 1.5 cm, herbaceous, margin basally glandular serrate and apically entire, apex long acuminate. Petiole 2–4 mm, glabrous or apically pubescent when young; leaf blade ovate-oblong, oblong, or elliptic, 4–9(–15) × 2–4(–8) cm, both surfaces glabrous, abaxially whitish and glaucous, adaxially dark green, base subcordate, rounded, or rarely broadly cuneate, margin irregularly simply serrate or biserrate, apex acuminate to caudate; midvein and secondary veins prominent; secondary veins 14–18 on either side of midvein. Racemes 1.7–5 cm; peduncle glabrous; bracts triangular-lanceolate, margin basally glandular serrate and apically entire, apex acuminate. Bisexual flowers 2–4 mm in diam. Pedicel 2–4 mm, glabrous but densely brown villous in fruit. Perianth segments oblong, ca. 3 mm, persistent in fruit, margin entire, apex acute. Stamens 30–35. Ovary glabrous. Style slender, longer than stamens, persistent in fruit; stigma oblique. Drupe purplish black, ovoid, ca. 8 mm in diam., apex acute. Fl. Apr, fr. Jun.

• Sparse forests on slopes; 1000–1800 m. Chongqing (Wushan Xian), Gansu, Henan, W Hubei, Hunan, Ningxia, Shaanxi.

2. **Maddenia incisoserrata** T. T. Yu & T. C. Ku, Acta Phyto-

tax. Sin. 23: 214. 1985.

锐齿臭櫻 *rui chi chou ying*

Shrubs 2–5 m tall. Branches blackish to purplish black, glabrous; branchlets of first year's growth reddish brown, densely brown pubescent, glabrescent. Winter buds reddish brown, oblong to ovoid; scales to 1.5 × 0.8 cm, outside pubescent. Stipules lanceolate to linear, ca. 1.5 cm, membranous, margin glandular serrate or basally glandular serrate and apically entire, apex acuminate. Petiole 2–3 mm, brown villous; leaf blade ovate-oblong to rarely elliptic, 5–10(–15) × 3–5(–8) cm, abaxially pale green, glabrous, and not glaucous, adaxially dark green and glabrous or occasionally sparsely appressed pubescent, base subrounded to broadly cuneate, margin incised and biserrate, apex acute to caudate; midvein and secondary veins yellowish, conspicuously prominent; secondary veins 10–15 on either side of midvein. Racemes 3–5 cm, dense; peduncle densely brown pubescent; bracts lanceolate to linear, membranous, margin glandular serrate or non-glandular. Bisexual flowers 2–4 mm in diam. Pedicel ca. 2 mm, densely brown pubescent, glabrescent. Perianth segments oblong, ca. 3 mm, soon caducous or base persistent in fruit, outside pubescent, inside subglabrous, margin entire, apex acute. Stamens 23–30. Ovary glabrous. Style slender, nearly as long as stamens; stigma oblique. Drupe black, ovoid, ca. 8 mm in diam., glabrous, apex acute. Fl. Apr–May, fr. Jun.

• Forests in valleys, slopes, scrub; 1100–2900 m. Anhui, Gansu,

Guizhou, S Henan, Qinghai, Shaanxi, Shanxi, Sichuan, Zhejiang.

**3. *Maddenia fujianensis*** Y. T. Chang, *Guihaia* 5: 25. 1985.

福建假稠李 fu jian jia chou li

Shrubs 2–4 m tall, erect. Branches grayish green, glabrous; branchlets of first year's growth slightly pulverulently puberulous, glabrescent. Winter buds ovoid; scales several, imbricate, margin densely ciliate. Stipules linear, 1–1.5 cm, margin apically ciliate. Petiole 2–4 mm; leaf blade ovate, 4–5 × 3–2.5 cm, abaxially pale green, glabrous or sometimes pubescent in vein axils, adaxially glabrous; secondary veins 9–12 on each side of midvein. Racemes lax; peduncle 3–5 cm. Pedicel pulverulently puberulous, glabrescent. Hypanthium campanulate, 2–2.5 × 2.5–3 mm, glabrous. Sepals 10, slightly unequal, triangular, glabrous. Stamens 20–28. Ovary glabrous. Style shorter than stamens. Fruit unknown. Fl. Apr.

- Sparse forests; ca. 1700 m. N Fujian (Chong'an Xian).

**4. *Maddenia hypoxantha*** Koehne in Sargent, *Pl. Wilson*. 1: 57. 1911.

四川臭櫻 si chuan chou ying

Shrubs 3–6 m tall. Branches purplish brown, glabrous, lustrous; branchlets of first year's growth yellowish brown, brown pubescent, glabrescent. Winter buds purplish brown, ovoid; scales to 2 × 1 cm, outside brown pubescent but glabrescent, margin basally glandular serrate. Stipules linear to lanceolate, 1–1.3 cm, herbaceous, margin basally glandular serrate and apically entire, apex acuminate. Petiole 2–7 mm, densely brown villous; leaf blade oblong to elliptic, 5–11 × 2.5–5 cm, abaxially yellowish green and densely brown pubescent on midvein and secondary veins, adaxially dull green and glabrous, base subrotund to broadly cuneate, margin biserrate or sometimes incised serrate, apex acute, acuminate, or shortly caudate; secondary veins 12–20 on either side of midvein. Racemes 3–5 cm; peduncle densely brown pubescent; bracts lanceolate to ovate-lanceolate, membranous, margin entire or indistinctly shallowly serrate. Bisexual flowers 2–4 mm in diam. Pedicel ca. 2 mm, to 3 mm in fruit, densely brown pubescent. Hypanthium outside pubescent. Perianth segments ovate, soon caducous, outside and inside pubescent, margin entire, apex acute. Stamens many. Ovary glabrous. Style slender, longer than stamens; stigma oblique. Drupe purple, ovoid, ca. 8 mm in diam., glabrous. Fl. Apr–May, fr. Jun.  $2n = 32^*$ .

- Shady valleys, scrub; 2100–3200 m. Qinghai, W Sichuan, Yunnan.

**5. *Maddenia wilsonii*** Koehne in Sargent, *Pl. Wilson*. 1: 58. 1911.

华西臭櫻 hua xi chou ying

Trees or shrubs, 3–5 m tall. Branches purplish brown to brown, glabrous, lustrous; branchlets of first year's growth yellowish brown, densely yellowish brown tomentose-pubescent, glabrescent. Winter buds purplish brown, ovoid; scales to 1.5 × 0.8 cm, tomentose or outside subglabrous. Stipules loratelanceolate, membranous, sparsely pubescent, margin glandular, apex acuminate. Petiole 2–7 mm, yellowish brown villous; leaf

blade oblong to oblong-oblong-oblanceolate, 3.5–12 × 1.8–6 cm, abaxially pale green to brown, densely yellowish brown villous or white pubescent, and more densely hairy on veins, adaxially brownish green and glabrous or sometimes sparsely appressed pubescent, base subcordate, margin irregularly incised and biserrate or sometimes singly serrate, apex acute; midvein and secondary veins prominent; secondary veins 15–20 on either side of midvein. Racemes 3–4 cm; peduncle sometimes brownish, densely tomentose-pubescent; bracts oblong, submembranous, subglabrous, margin entire. Bisexual flowers 2–4 mm in

diam. Pedicel sometimes brown, ca. 2 mm, thickened in fruit, densely tomentose-pubescent. Hypanthium outside pubescent. Perianth segments triangular-ovate, ca. 3 mm, soon caducous, outside pubescent, inside glabrous, margin entire, apex acute. Stamens 30–40. Ovary glabrous; style slender, longer than stamens, base persistent in fruit; stigma oblong. Drupe black, ovoid, ca. 8 mm in diam., smooth, apex acute. Fl. Apr–Jun, fr. Jun.

• Slopes, scrub, sunny places by rivers; 1500–3600 m. S Gansu, Guizhou, W Hubei, Shaanxi, Sichuan.

**6. *Maddenia himalaica*** J. D. Hooker & Thomson, Hooker's J. Bot. Kew Gard. Misc. 6: 381. 1854.

喜马拉雅臭樱 xi ma la ya chou ying

*Maddenia himalaica* var. *glabrifolia* H. Hara.

Trees 3–8(–10) m tall. Branchlets more than two years old purplish brown to reddish brown, pubescent, lustrous; branchlets of first year's growth reddish brown, densely brown villous, glabrescent. Winter buds purplish red, ovoid; scales outside brown villous to subglabrous. Stipules lorate-lanceolate, abaxially pubescent, margin glandular serrate, apex acuminate. Petiole 2–5 mm, densely brown villous; leaf blade abaxially pale green and densely brown villous especially on veins but occasionally glabrous except on veins, adaxially dark green and glabrous, margin teeth with an apical gland when young; midvein and secondary veins abaxially conspicuously prominent, adaxially impressed; secondary veins 15–20 on either side of midvein. Sterile shoots with leaf blade narrowly elliptic, oblong, or rarely ovate, 5–15 × 1.8–5 cm, base subrounded to cordate, margin aristate biserrate, apex long acuminate to caudate. Flowering shoots with leaf blade ovate to ovate-lanceolate, 5–9.5 × 2–5 cm, base cordate, margin incised and simply serrate or biserrate, apex long acuminate to caudate. Racemes 3.5–6 cm, dense; peduncle densely brown villous; bracts oblong lanceolate, membranous, outside sparsely pubescent, margin glandular serrate. Bisexual flowers 2–4 mm in diam. Pedicel ca. 2 mm, to 5 mm in fruit, densely brown villous. Hypanthium outside brown villous. Perianth segments ovate, ca. 3 mm, soon caducous, outside brown villous, inside subglabrous, margin entire, apex acute. Stamens 20–30. Ovary glabrous. Style slender, ± as long as stamens, base persistent in fruit; stigma disk-shaped. Drupe purple, ovoid, ca. 9 mm in diam., apex acute. Fl. May, fr. Jun.

Forests; 2800–4200 m. E and S Xizang (Bomi Xian, Yadong Xian) [Bhutan, Nepal, Sikkim].

ROSACEAE