

21. CHAENOMELES Lindley, Trans. Linn. Soc. London 13: 96, 97. 1821, nom. et orth. cons.

木瓜属 mu gua shu

Gu Cui zhi (谷粹芝 Ku Tsue-chih); Stephen A. Spongberg

Pseudochaenomeles Carrière; *Pseudocydonia* C. K. Schneider.

Shrubs, subshrubs, or small trees, deciduous or evergreen, sometimes with thorny branches; buds small, with 2 exposed scales. Leaves simple, alternate, shortly petiolate, stipulate, herbaceous, venation camptodromous, margin serrate or crenate. Flowers solitary or fascicled, precocious or coetaneous. Sepals 5, caducous, margin entire or serrate. Petals 5. Stamens 20 or more, 2-whorled. Ovary 5-loculed, with many ovules per locule, 2-seriate; styles 2–5, connate at base. Fruit a pome, large, many seeded, often with persistent incurved styles; seed brown, seed coat leathery, albumen absent.

About five species: E Asia; five species (three endemic) in China.

- 1a. Branches unarmed; flowers solitary, coetaneous; sepals reflexed; stipules ovate-lanceolate, margin glandular serrate 1. *C. sinensis*
- 1b. Branches armed; flowers fascicled, precocious or coetaneous; sepals erect, rarely reflexed; stipules herbaceous, reniform or auriculate, margin serrate.
 - 2a. Leaf margin entire 5. *C. tibetica*
 - 2b. Leaf margin serrate or crenate.
 - 3a. Branchlets scabrous, verruculose when old; fruit small, 3–4 cm in diam., maturing early; leaf blade obovate to spatulate, margin crenate 4. *C. japonica*
 - 3b. Branchlets smooth, not verruculose when old; fruit medium-sized to large, 5–8 cm in diam., maturing late; leaf blade ovate, elliptic, or lanceolate, margin serrate.
 - 4a. Leaf blade ovate to narrowly elliptic, abaxially glabrous or initially slightly pubescent, margin sharply serrate; styles glabrous or slightly pubescent 2. *C. speciosa*
 - 4b. Leaf blade elliptic or lanceolate, abaxially densely brown tomentose, margin aristate-serrate; styles basally pubescent or lanose 3. *C. cathayensis*

1. *Chaenomeles sinensis* (Thouin) Koehne, Gatt. Pomac. 29. 1890.

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Cydonia sinensis Thouin, Ann. Mus. Hist. Nat. 19: 145. 1812; *Pseudocydonia sinensis* (Thouin) C. K. Schneider; *Pyrus cathayensis* Hemsley; *P. chinensis* Sprengel; *P. sinensis* (Thouin) Poiret.

Shrubs or small trees, to 5–10 m. Branchlets purplish red, terete, unarmed, initially pubescent, soon glabrate, with pale lenticels; buds purplish brown, glabrous, apex obtuse. Stipules ovate-oblong, rhomboidal, or lanceolate, 5–12 mm, herbaceous, subglabrous, margin glandular serrate, apex acute; petiole 5–10 mm, pubescent, glandular serrate; leaf blade elliptic-ovate or elliptic-oblong, rarely obovate, 5–8 × 3.5–5.5 cm, abaxially yellowish white tomentose when young, soon glabrescent, base broadly cuneate or rounded, margin aristate and sharply serrate (teeth glandular at apices), apex acute. Pedicel short, 5–10 mm, glabrous. Flowers solitary, 2.5–3 cm in diam. Hypanthium campanulate, abaxially glabrous. Sepals reflexed, triangular-lanceolate, 6–10 mm, abaxially glabrous, adaxially brown tomentose, apex acute or acuminate. Petals pinkish, obovate, base shortly clawed, apex rounded. Stamens numerous, ca. 1/2 as long as petals. Styles 3–5, ca. as long as stamens, connate at base. Pome fragrant, dark yellow, narrowly ellipsoid, 10–15 cm, woody; sepals caducous; fruiting pedicel short. Fl. Apr, fr. Sep–Oct.

• About 1000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hebei, Hubei, Jiangsu, Jiangxi, Shaanxi, Shandong, Zhejiang.

The fruit are used medicinally.

2. *Chaenomeles speciosa* (Sweet) Nakai, J. Jap. Bot. 4: 331. 1929.

贴梗海棠 tie geng hai tang

Cydonia speciosa Sweet, Hort. Suburb.-Lond. 113. 1818; *Chaenomeles lagenaria* (Loiseleur-Deslongchamps) Koidzumi; *Cydonia japonica* (Thunberg) Persoon var. *lagenaria* (Loiseleur-Deslongchamps) Makino; *C. lagenaria* Loiseleur-Deslongchamps.

Shrubs deciduous, to 2 m tall, with thorns. Branchlets purplish brown or blackish brown, terete, glabrous, with pale brown lenticels; buds purplish brown, triangular-ovoid, glabrous or pubescent at margin of scales, apex obtuse. Stipules reniform or suborbicular, rarely ovate, large, 5–10 mm, herbaceous, glabrous, sharply doubly serrate at margin, apex acute; petiole ca. 1 cm, initially sparsely pubescent, glabrescent; leaf blade ovate to elliptic, rarely narrowly elliptic, 3–9 × 1.5–5 cm, glabrous or pubescent abaxially along veins on leaves of shoots, base cuneate to broadly cuneate, margin shortly serrate, apex acute or obtuse. Pedicel absent or short, ca. 3 mm, subglabrous. Flowers precocious, 3–5-fascicled on second year's branchlets, 3–5 cm in diam. Hypanthium campanulate, glabrous. Sepals erect, suborbicular, rarely ovate, 3–4 mm, abaxially glabrous, adaxially pubescent. Petals scarlet, rarely pinkish or white, ovate or suborbicular, base shortly clawed, apex rounded. Stamens 40–50, ca. 1/2 as long as petals. Styles 5, ca. as long as stamens, connate at base, glabrous or slightly pubescent. Pome

fragrant, yellow or yellowish green, globose or ovoid, 4–6 cm in diam.; sepals caducous; fruiting pedicel short or absent. Fl. Mar–May, fr. Sep–Oct. $2n = 34^*$.

Fujian, Gansu, Guangdong, Guizhou, Hubei, Jiangsu, Shaanxi, Sichuan, Xizang, Yunnan [Myanmar].

This species is planted in parks and gardens as an ornamental; its fruit are used medicinally.

3. *Chaenomeles cathayensis* (Hemsley) C. K. Schneider, Ill. Handb. Laubholz. 1: 730. 1906.

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Cydonia cathayensis Hemsley, Hooker's Icon. Pl. 27: t. 2657. 1901; *Chaenomeles lagenaria* Koidzumi var. *cathayensis* (Hemsley) Rehder; *C. lagenaria* var. *wilsonii* Rehder; *C. speciosa* Nakai var. *cathayensis* (Hemsley) H. Hara; *C. speciosa* var. *wilsonii* (Rehder) H. Hara; *Cydonia japonica* (Thunberg) Persoon var. *cathayensis* (Hemsley) Cardot.

Shrubs or small trees, deciduous, 2–6 m tall, with short thorns. Branchlets purplish brown, terete, glabrous, with sparse, pale brown lenticels; buds purplish brown, triangular-ovoid, glabrous, apex acute. Stipules reniform, auriculate, or suborbicular, 5–10 mm, herbaceous, abaxially brown tomentose, margin minutely aristate-serrate, apex acute; petiole ca. 1 cm, pubescent or nearly so; leaf blade elliptic or lanceolate to obovate-lanceolate, 5–11 × 2–4, abaxially initially densely brown tomentose, glabrescent, adaxially glabrous, base cuneate to broadly cuneate, margin minutely aristate-serrate, sparsely serrate or subentire basally, doubly serrate apically, apex acute or acuminate. Pedicel short or nearly absent. Flowers precocious, 2- or 3-fascicled, 2–4 cm in diam. Hypanthium campanulate, abaxially glabrous or slightly pubescent. Sepals erect, ovate to elliptic, 3–5 mm, abaxially glabrous, adaxially and marginally brown pubescent, apex obtuse or acute. Petals pink or white, obovate or suborbicular. Stamens 45–50, ca. 1/2 as long as petals. Styles 5, ca. as long as stamens, pubescent or lanose basally. Pome fragrant, yellowish red, ovoid or subcylindric, 6–7 cm diam.; sepals caducous; fruiting pedicel short or nearly absent. Fl. Mar–May, fr. Sep–Oct.

• Slopes, forest margins, roadsides, widely cultivated; 900–2500 m. Fujian, Gansu, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan, Zhejiang.

4. *Chaenomeles japonica* (Thunberg) Lindley ex Spach, Hist. Nat. Vég. 2: 159. 1834.

和園子 he yuan zi

Pyrus japonica Thunberg, Nova Acta Regiae Soc. Sci. Upsal. 3: 208. 1780; *Chaenomeles maulei* (Masters) C. K. Schneider; *Cydonia japonica* (Thunberg) Persoon; *Pyrus maulei* Masters.

Shrubs to 1 m tall, with slender thorns. Branches spreading; branchlets purple when young, blackish brown when old, terete, scabrous and tomentose when young, verruculose, and glabrous when old; buds purple, triangular-ovate, glabrous, apex acute. Stipules reniform, ca. 1 cm, herbaceous, glabrous, margin serrate, apex obtuse; petiole ca. 5 mm, glabrous; leaf

blade obovate or spatulate to broadly ovate, 3–5 × 2–3 cm, glabrous, base cuneate or broadly cuneate, margin crenate, apex obtuse or acute. Pedicel short or nearly absent, glabrous. Flowers 3–5-fascicled, 2.5–4 cm in diam. Hypanthium campanulate, abaxially glabrous. Sepals ovate, rarely suborbicular, 4–5 mm, abaxially glabrous, adaxially and margin brown pubescent. Petals dark red, obovate or suborbicular. Stamens 40–60, ca. 1/2 as long as petals. Styles ca. as long as stamens, connate at base, glabrous. Pome yellow, subglobose, 3–4 cm in diam.; sepals

caducous; fruiting pedicel short or nearly absent. Fl. Mar–Jun, fr. Aug–Oct.

Cultivated. Fujian, Hubei, Jiangsu, Shaanxi, Zhejiang [native to Japan].

This species is cultivated as an ornamental for its showy spring flowers.

5. *Chaenomeles thibetica* T. T. Yu, *Acta Phytotax. Sin.* 8: 234. 1963.

西藏木瓜 xi zang mu gua

Shrubs or small trees, 1.5–3 m tall, usually with many thorns. Branchlets red or purplish brown when young, blackish brown when old, terete, with sparse, oblong lenticels; buds reddish brown, triangular, with few scales, apex obtuse. Stipules subfalcate or subreniform, large, ca. 1 × 1.2 cm, herbaceous, margin irregularly serrate, apex acute, rarely obtuse; petiole short, 1–1.6 cm, initially brown tomentose, soon glabrous; leaf blade dark green adaxially, ovate-lanceolate or oblong-lanceolate, 6–8.5 × 1.8–3.5 cm, leathery, midvein and lateral veins conspicuous abaxially and impressed adaxially, abaxially densely brown tomentose, base cuneate, margin entire, apex acute. Pedicel short. Flowers 3- or 4-fascicled. Hypanthium campanulate, abaxially glabrous. Sepals reflexed, triangular, ca. 2 mm, glabrous. Petals and stamens not seen. Styles 5, connate and densely gray pubescent at base. Pome fragrant, yellow, oblong or pear-shaped, 5–9 cm in diam., sepals caducous; fruiting pedicel short. Fl. Jul, fr. Sep–Oct.

• Among shrubs on slopes or in valleys; 2600–3800 m. W Sichuan, E Xizang.

Yu and Lu (in FRPS 36: 354. 1974) suggested that this species is a hybrid between *Chaenomeles cathayensis* and *Docynia delavayi*.

Flora of China 9: 171–173. 2003.