

13. COCCULUS Candolle, Syst. Nat. 1: 515. 1817, nom. cons.

木防己属 mu fang ji shu

Nephroia Loureiro.

Woody vines, erect shrubs, or small trees. Leaf blade entire or lobed, not peltate, palmately veined. Inflorescences axillary or terminal, cymose or thyrsoid. Male flowers: sepals 6 (or 9) in 2 (or 3) whorls, imbricate, outer sepals smaller, inner sepals larger and concave; petals 6, apex 2-lobed, lobes divaricate, with basal reflexed auricles; stamens 6 or 9, free, anthers dehiscing with a transverse slit. Female flowers: sepals and petals as in male flowers; staminodes 6 or absent; carpels 3 or 6, style columnar, stigma reflexed. Drupes obovate or rotund, slightly flat, style scar near base; endocarp bony, horseshoe-shaped, abaxially verruculose or ridged; condyle with 2 distinct lateral chambers, each with a large lateral aperture. Seed horseshoe-shaped; embryo with radicle short; endosperm scanty; cotyledons linear and flattened.

About eight species: Africa, E, SE, and S Asia, Pacific islands, Central and North America; two species in China.

Female material of this genus is difficult to distinguish from that of the genus *Pachygone*.

- 1a. Twining vines; petiole 1–3(–5) cm, whitish tomentose or pubescent; basal lateral veins of leaves comparable to distal lateral veins, usually obscure beyond middle of leaf blade; carpels 6; petals involute at base 1. *C. orbiculatus*
- 1b. Erect shrubs or small trees; petiole to 1 cm, glabrous; basal lateral veins of leaves much more prominent than distal lateral veins, well defined beyond middle of leaf blade; carpels 3; petals flat 2. *C. laurifolius*

1. *Cocculus orbiculatus* (Linnaeus) Candolle, Syst. Nat. 1: 523. 1817.

木防己 mu fang ji

Woody vines. Young branches striate, puberulent to subglabrous. Petiole 1–3(–5) cm, whitish tomentose or pubescent; leaf blade variable in shape, linear-lanceolate to broadly ovate, narrowly elliptic to rotund, oblanceolate to obovate, sometimes 3(–5)-lobed, 3–8(–10) cm, variable in width, papery to thinly leathery, both surfaces puberulent to glabrous, base rounded to truncate, occasionally broadly cuneate or shallowly cordate, margin entire, apex acute or obtuse, with a finely mucronate acumen, sometimes slightly emarginate or 2-lobed, palmately 3 (or 5)-veined, basal pair of veins usually obscure beyond middle of leaf blade, slightly raised abaxially. Inflorescences axillary, cymose, few flowered, or many flowered arranged in a narrow terminal or axillary thyrses, up to 10 cm or longer, puberulent. Male flowers: bracteoles 1 or 2, ca. 0.5 mm, closely adnate to sepals, puberulent; sepals 6, outer whorl ovate or elliptic-ovate, 1–1.8 mm, inner whorl broadly elliptic to rotund, sometimes broadly obovate, up to 2.5 mm or slightly longer; petals 6, 1–2 mm, with sides shortly above base folded inward around opposite filament, apex divided into 2 acuminate or acute lobes; stamens 6, shorter than petals. Female flowers: sepals and petals as in male flower; staminodes 6, minute; carpels 6, glabrous. Drupes rotund, red to reddish purple, usually 7–8 mm in diam.; endocarp bony, 5–6 mm in diam., abaxially ornamented with branched ridges.

Sparse forests, shrublands, village margins, forest margins; near sea level to 1200 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [E India, Indonesia, Japan, Laos, Malaysia, Nepal, Philippines; introduced in Indian Ocean islands (Mauritius, Réunion) and Pacific islands (Hawaii)].

- 1a. Sepals glabrous 1a. var. *orbiculatus*
- 1b. Sepals puberulent abaxially 1b. var. *mollis*

1a. *Cocculus orbiculatus* var. *orbiculatus*

木防己(原变种) mu fang ji (yuan bian zhong)

Menispermum orbiculatum Linnaeus, Sp. Pl. 1: 341. 1753; *Cocculus cuneatus* Benth; *C. sarmentosus* (Loureiro) Diels; *C. sarmentosus* var. *linearis* Yamamoto; *C. sarmentosus* var. *pauciflorus* Y. C. Wu; *C. sarmentosus* var. *stenophyllum* Merrill; *C. thunbergii* Candolle; *C. trilobus* (Thunberg) Candolle; *M. trilobum* Thunberg; *Nephroia cuneifolia* Miers; *N. dilatata* Miers; *N. pubinervis* Miers ex Benth; *N. pycnantha* Miers; *N. sarmentosa* Loureiro.

Sepals glabrous.

Shrublands, village margins, forest margins. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang [Indonesia,

Japan, Malaysia, Philippines; introduced in Indian Ocean islands (Mauritius, Réunion) and Pacific islands (Hawaii)].

1b. *Cocculus orbiculatus* var. *mollis* (Wallich ex J. D. Hooker & Thomson) H. Hara, Bull. Univ. Mus. Univ. Tokyo 2 [Fl. E. Himalaya 2nd Rep.]: 35. 1971.

毛木防己 mao mu fang ji

Cocculus mollis Wallich ex J. D. Hooker & Thomson, Fl. Ind. 1: 193. 1855; *C. lenissimus* Gagnepain; *C. mokiangensis* W. Y. Lien.

Sepals puberulent abaxially.

Sparse forests, shrublands. NW Guangxi, SW Guizhou, Sichuan, S Yunnan [E India, Nepal].

2. *Cocculus laurifolius* Candolle, Syst. Nat. 1: 530. 1817.

樟叶木防己 zhang ye mu fang ji

Cinnamomum esquirolii H. Léveillé.

Erect shrubs or small trees, rarely climbing, usually 1–5(–8) m. Branches striate; branchlets slightly angular, glabrous. Petiole usually less than 1 cm, glabrous; leaf blade elliptic, ovate, or long elliptic to lanceolate-elliptic, rarely oblanceolate, 4–15 × 1.5–5 cm, thinly leathery, both surfaces glabrous and glossy, base cuneate or acute, apex acute and attenuate, palmately 3-veined, basal pair of veins well-defined beyond middle of leaf blade, reticulate veins fine, raised on both surfaces. Inflorescences axillary, cymose or thyrsoïd, 1–5 cm, glabrous. Male flowers: sepals 6, outer whorl subelliptic, 0.8–1 mm, inner whorl ovate-elliptic to broadly elliptic-rotund, ca. 1.3 mm; petals 6, obcordate, 0.2–0.4 mm, base not reflexed inward, apex 2-lobed; stamens 6, ca. 1 mm. Female flowers: sepals and petals as in male flower; staminodes 6, minute; carpels 3, glabrous. Drupes black, rotund, slightly flattened, 6–7 mm; endocarp bony, abaxially ornamented with branched ridges. Fl. spring to summer, fr. autumn.

Shrublands, open forests. S Guizhou, NW Hunan, Taiwan, Xizang (Gyirong) [India, Indonesia, Japan, Laos, Malaysia, Myanmar, Nepal, Thailand].

Cocculus laurifolius is frost resistant and grown as a slow-growing ornamental tree in the S United States.

An alkaloid in the bark has a muscle-relaxing effect, similar to that of curare. The plant has also been used as a diuretic and as a vermifuge.

