

5. XYLOSMA G. Forster, Fl. Ins. Austr. 72. 1786, nom. cons.

柞木属 *zuo mu shu*

*Apactis* Thunberg; *Hisingera* Hellenius; *Myroxylon* J. R. Forster & G. Forster (1775), not Linnaeus f. (1782), nom. cons.

Shrubs or small trees, usually dioecious, rarely polygamous; trunk and branches usually spiny. Leaves alternate, stipulate, usually petiolate; leaf blade pinnate-veined, margin serrate, rarely entire, teeth glandular. Flowers hypogynous, small, in axillary fascicles, short racemes, or panicles, rudiments of opposite sex usually absent; bracts small, persistent or caducous; pedicels articulate at base. Sepals 4 or 5, imbricate, free or connate at base only. Petals absent. Disk extrastaminal, or in female flowers extragynoecial, comprised of several small closely set or connate glands (usually in staminate flowers) or annular (often in pistillate flowers). Staminate flowers: stamens ca. 10 to many, exserted; filaments free, filiform; anthers small, basifixed, sometimes apiculate by extension of connective. Pistillate flowers: ovary superior, 1-loculed; placentas 2(–6), each with 2 to many ovules; styles 2 or 3 (or 4), often very short, joined in lower part only or completely joined to form a single style column, or styles absent; stigmas semilunate to U-shaped. Berry small, ca. 1 cm or less, pericarp thinly leathery, blackish when dried; disk and calyx often persistent at base; styles and/or stigmas persistent at apex. Seeds few.

About 100 species: tropical and subtropical regions, rarely extending to warm-temperate regions; three species in China.

The gender of the name *Xylosma* is feminine; see Art. 62.2(b) of the *Vienna Code*.

In Chinese species: stamens 10–20, filaments glabrous; ovary glabrous; berry red or black when fresh. See notes on identification under *Flacourtia*.

Differentiation between fruiting material of *Xylosma controversa* and *X. longifolia* can be difficult when the calyx is absent (caducous) and the critical sepal indumentum character therefore unavailable. Ranges of other character states (e.g., leaf size, shape, lateral vein number) overlap, and lateral veins are difficult to count in dried material, especially toward the leaf apex. Characters used previously, for example dried leaf color, leaf shininess, leaf base shape, and style length, are not reliable. For some fruiting material examined for the Flora (at K), identification of *X. controversa* has been based solely on the absence of the calyx. Further study is required to test the strength of this character and, ideally, provide additional ones.

- 1a. Leaves broadly ovate or ovate to elliptic-ovate, 4–8 × 2.5–4 cm; lateral veins 3 or 4 (or 5) pairs; seed sheath with dark striations ..... 1. *X. congesta*
- 1b. Leaves oblong, oblong-lanceolate, lanceolate, or elliptic, 5–10(–18) × 2–7 cm; lateral veins more than 5 pairs; seed sheath without dark striations.
  - 2a. Leaves elliptic to oblong, lateral veins 5 or 6 (or 7) pairs; inflorescence lax, 1.5–3(–5) cm, paniculate or racemose-paniculate, often yellow puberulous; sepals pubescent inside, margin entire, ciliate; calyx deciduous in fruit ..... 2. *X. controversa*
  - 2b. Leaves elliptic to oblong-lanceolate, lateral veins (6 or) 7–11 pairs; inflorescence usually dense, often very short, 0.5–2 cm, racemose or condensed paniculate (as clusters of short racemes from a single axil), usually glabrous or puberulous; sepals glabrous inside, margin entire to erose, glabrous; calyx persistent in fruit ..... 3. *X. longifolia*

1. *Xylosma congesta* (Loureiro) Merrill, Philipp. J. Sci. 15: 247. 1920 [*“congestum,”* “1919”].

柞木 *zuo mu*

*Croton congestus* Loureiro, Fl. Cochinch. 2: 582. 1790 [*“congestum”*]; *Apactis japonica* Thunberg; *Casearia subrhombea* Hance; *Flacourtia chinensis* Clos; *F. japonica* Walpers; *Hisingera japonica* Siebold & Zuccarini, nom. illeg. superfl.; *H. racemosa* Siebold & Zuccarini; *Myroxylon japonicum* (Thunberg) Makino; *M. racemosum* (Siebold & Zuccarini) Kuntze; *Xylosma apactis* Koidzumi, nom. illeg. superfl.; *X. congesta* var. *caudata* S. S. Lai; *X. congesta* var. *pubescens* (Rehder & E. H. Wilson) Chun; *X. japonica* A. Gray, nom. illeg. superfl.; *X. japonica* var. *pubescens* (Rehder & E. H. Wilson) C. Y. Chang; *X. racemosa* (Siebold & Zuccarini) Miquel; *X. racemosa* var. *caudata* (S. S. Lai) S. S. Lai; *X. racemosa* var. *glaucescens* Franchet; *X. racemosa* var. *pubescens* Rehder & E. H. Wilson; *X. senticosa* Hance.

Shrubs or small trees, evergreen, 4–15 m tall; bark brown-gray; branches spiny when young, unarmed when old, glabrous or puberulous. Stipules subulate, minute, ca. 0.3 mm, glabrous, in dried material dark brown or blackish, caducous or persistent for some time; petiole short, 2–5 mm, glabrous to quite densely pubescent with spreading hairs; leaf blade broadly ovate to ovate-elliptic, 3–8 × 2.5–3.5 cm, leathery, often glaucous below, both surfaces glabrous, or scarcely pubescent along veins below, lateral veins 3 or 4 (or 5) pairs, base usually obtuse to rounded, less often acute, margin serrate, apex acute, tip usually acuminate, acumen 5–10 mm. Inflorescence axillary, racemose, short, 0.5–2 cm; rachis densely pubescent, hairs spreading, short; flowers yellowish. Pedicels very short, 1–3 mm in flower and fruit, pubescent. Bracts ovate to narrowly lanceolate, 1–2.5 mm, abaxially pubescent, ciliate, caducous or persistent. Sepals 4–6, broadly ovate with rounded apex, or orbicular, 1–2 mm, outside ± pubescent, inside glabrous, ciliate. Staminate flowers: stamen filaments long, eventually extending to ca. 3 mm; anthers ellipsoid, minute, ca. 0.2 mm, connective usually not

projected beyond thecae; disk consisting of several, small, glabrous, closely set or connate glands. Pistillate flowers: disk annular, undulate; ovary ovoid, ca. 4.5 mm; placentas 2; styles 2, very short (to 0.5 mm) to nearly absent, joined in basal half. Berry dark red to black (black when dried), globose, 4–5 mm in diam.; calyx and disk persistent at least while fruit attached to plant; styles persistent. Seeds 2 or 3, reddish brown when dry, ovoid, flattened on one side by mutual pressure, 4–5 mm, completely covered in a thin membranous darkly streaked sheath. Fl. Jul–Nov, fr. Aug–Dec.

Forest margins, thickets on hills, plains, surrounding villages; 500–1100 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [India (rare), Japan, Korea].

The varieties *Xylosma racemosa* var. *glaucescens* and *X. racemosa* var. *pubescens* are not upheld here. The characters used to distinguish them, glaucescence of the leaves, or hairiness of branchlets and petioles and venation of the abaxial leaf surface, were found to vary continuously throughout the species.

For *Xylosma senticosum* only three specimens (including the type) were available. Of these, *Hance 7437* (type; K) and a specimen numbered “9204” (collector illegible; K) were collected from Victoria Peak, Hong Kong. The third specimen, *Ford 579* (K), possibly a cultivated specimen, is also annotated “Victoria Peak.” Between them, the specimens bear staminate or structurally bisexual flowers. All are similar to *X. congesta* but differ in the following combination of characteristics: leaves very small (1.5–3 cm), flowers sometimes structurally bisexual, sepals glabrous outside (margin ciliate), pedicel above the articulation glabrous, lower part of pedicel and inflorescence rachis glabrous or sparsely hairy, anther with connective projected as a fleshy, triangular appendage. After one of us (Yang) examined extensive gatherings of *Xylosma* from Hong Kong at PE, the inclusion of *X. senticosum* Hance within *X. congesta* was recommended.

**2. *Xylosma controversa*** Clos, Ann. Sci. Nat., Bot., sér. 4, 8: 231. 1857.

南岭柞木 nan ling zuo mu

Shrubs or small trees, evergreen, 4–10 m tall; young stems often spiny, bark gray-brown; branchlets terete, glabrous or puberulous. Stipules subulate or triangular, minute, ca. 0.2 mm, glabrous, in dried material dark brown or blackish, caducous or persistent for some time; petiole 5–10 mm, glabrous or pubescent; leaf blade elliptic to oblong-elliptic, 5–10(–18) × 3–7 cm, thickly papery to leathery, both surfaces glabrous, or abaxially spreading pubescent, midvein raised abaxially, impressed or flat adaxially, lateral veins 5 or 6(or 7) pairs, arched-ascending, especially basal pairs, conspicuous on both sides, base acute to slightly attenuate, margin serrate, apex acute or acuminate, acumen 5–10 mm. Inflorescence axillary, paniculate, often with very short branches and then racemelike, lax; rachis 1.5–5 cm, puberulous to pubescent with spreading yellowish hairs, sometimes glabrescent. Pedicels 2–3 mm, puberulous to pubescent; bracts ovate to lanceolate, 1–3 mm, both surfaces pubescent, persistent or caducous. Flowers numerous, greenish white, 3–4 mm in diam. Sepals 4, ovate-orbicular, (1–)2–2.5(–3) mm, often unequal in size, outside pubescent with short semispreading hairs, or nearly glabrous, inside densely hairy, hairs semispreading, white, long; sepal margin ciliate. Staminate flowers:

stamens with filaments ca. 2 mm, anthers ellipsoid, ca. 0.5 mm; disk glands small, close set. Pistillate flowers: ovary ovoid-globose, ca. 2 mm; disk annular or few lobed; placentas 2, each with 2 or 3 ovules; styles 2(or 3), usually completely joined to form a single style column (0.5–)1(–1.5) mm. Fruit reported as red, drying black, globose, 3–5 mm in diam. Seeds 2–8, mid to darker brown when dried, ovoid, flattened at least on one side by mutual compression, 4–5 mm, completely enclosed in a thin sheath, sheath without dark streaks. Fl. Apr–May, fr. Aug–Sep.

Evergreen broad-leaved forests, forest margins; low elevations. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan [India, Malaysia, Nepal, Vietnam].

- 1a. Leaf blades abaxially and branchlets glabrous ..... 2a. var. *controversa*
- 1b. Leaf blades abaxially along veins and branchlets puberulous ..... 2b. var. *pubescens*

**2a. *Xylosma controversa* var. *controversa***

南岭柞木(原变种) nan ling zuo mu (yuan bian zhong)

Leaf blades abaxially and branchlets glabrous.

Evergreen broad-leaved forests, forest margins; low elevations. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan [India, Malaysia, Nepal, Vietnam].

“*Xylosma controversum* var. *glabrum*” [sic] (S. S. Lai, Bull. Bot. Res., Harbin 14: 224. 1994) belongs here but was not validly published under Art. 37.2 of the *Vienna Code* because two gatherings were indicated as types: *Q. H. Lu 324* (IBG) and *L. Deng [L. Teng] 1492* (IBSC), the type status of the former being indicated by the text “Typus: in (IBG) et (INSC)” [sic].

**2b. *Xylosma controversa* var. *pubescens*** Q. E. Yang, var. nov.

毛叶南岭柞木 mao ye nan ling zuo mu

Type: China. Guangdong: Yangshan Xian, in rocky, shady places under dense forests, alt. 500 m, *L. Teng 1675* (holotype, PE).

*A var. controversa ramulis et foliis subtus ad venas puberulis differt.*

Abaxial surfaces of leaf blades along veins and branchlets puberulous.

• Evergreen broad-leaved forests, forest margins; low elevations. Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan.

**3. *Xylosma longifolia*** Clos, Ann. Sci. Nat., Bot., sér. 4, 8: 231. 1857.

长叶柞木 chang ye zuo mu

*Xylosma congesta* (Loureiro) Merrill var. *kwangtungensis* F. P. Metcalf; *X. racemosa* (Siebold & Zuccarini) Miquel var. *kwangtungensis* (F. P. Metcalf) Rehder.

Shrubs or small trees, evergreen, 4–7 m tall; bark gray-brown; branchlets spiny, glabrous. Stipules not seen; petiole 5–8 mm, glabrous; leaf blade narrowly elliptic, oblong-elliptic, oblong-lanceolate, or narrowly obovate, 4–15(–20) × (2–)2.5–5(–7) cm, leathery, both surfaces glabrous, lateral veins (6 or)7–

11 pairs, raised on both surfaces, base acute, cuneate, very rarely obtuse, margin serrate, apex acuminate, acumen 1–2 cm. Inflorescence of short racemes or reduced panicles borne singly or in condensed clusters in leaf axils; rachis 0.5–2 cm, glabrous or puberulous; bracts ovate (staminate flowers) to lanceolate (pistillate flowers), small, 0.5–1 mm, glabrous or sparsely puberulous. Flowers greenish, 2.5–3.5 mm in diam. Pedicels 1–2 mm, slender, puberulous. Sepals 4 or 5, persistent, ovate or lanceolate, 1–2 mm, abaxially glabrous or sparsely puberulous with spreading hairs, adaxially glabrous, margin entire to erose ( $\times 10$  mag.), glabrous. Staminate flowers: stamen filaments eventually ca. 3 mm; anthers ellipsoid, minute, ca. 0.3 mm; disk glands small,  $\pm$  connate. Pistillate flowers: disk annular or few lobed, ovary ovoid, ca. 2 mm; placentas 2 or 3, each with 2 or 3 ovules; styles 2 or 3, very short, 0.5–0.8 mm or less, partly or completely joined. Berry reported as red when ripe, drying black, globose, 4–6 mm in diam.; calyx, disk, and style persistent. Seeds 4 or 5, brown when dried, ca. 4 mm, ovoid, flattened on one or more sides by mutual compression, completely enclosed in a thin sheath, sheath without dark streaks. Fl. Apr–May, fr. Jun–Oct.

Mountain forests; 1000–1600 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Yunnan [India, Laos, Nepal, Thailand, Vietnam].

*“Xylosma fasciculorum”* [sic] (S. S. Lai, Bull. Bot. Res., Harbin 14: 224. 1994) belongs here but was not validly published under Art. 37.2 of the *Vienna Code* because two gatherings were indicated as types (*B. Y. Qiu 50405* and *M. G. Li [M. K. Li] 697*).

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