

5. OSMANTHUS Loureiro, Fl. Cochinch. 1: 28. 1790.

木犀属 mu xi shu

Shrubs to small trees, evergreen. Leaves opposite, simple, petiolate; leaf blade entire or serrate, usually glandular dotted. Inflorescences cymose, fascicled in leaf axils or in very short and axillary or terminal panicles; bracts 2, united at base, usually ciliate. Flowers bisexual, usually becoming unisexual and plants dioecious or androdioecious. Calyx campanulate, 4-lobed. Corolla usually white or yellowish, campanulate, cylindric, or urceolate, lobed, parted, or divided almost to base; lobes 4, imbricate in bud. Stamens 2(–4), mostly attached to upper half of corolla tube; connective usually minutely mucronate, elongated, or projecting. Ovules 2 in each locule, pendulous. Stigma capitate or 2-cleft. Abortive pistil subulate or conical. Fruit a drupe; endocarp hard or bony; endosperm fleshy; radicle erect.

About 30 species: SE Asia and America; 23 species in China. Two species have been described from Taiwan of which no material has been seen in the preparation of this account: *Osmanthus acutus* Masamune & K. Mori (*O. heterophyllus* var. *acutus* (Masamune & K. Mori) T. S. Liu & J. C. Liao) and *O. kaoi* (T. S. Liu & J. C. Liao) S. Y. Lu (*O. lanceolatus* var. *kaoi* T. S. Liu & J. C. Liao). *Osmanthus dinggyensis* P. Y. Bai, described from Xizang, is *Ilex hookeri* King.

The flowers are fragrant in all species; *Osmanthus fragrans* is a well-known spice plant.

- 1a. Cymes in very short panicles, axillary or terminal; anther connective not elongated or projecting.
  - 2a. Leaf blade thick leathery, broadly elliptic to narrowly lanceolate, base cuneate or broadly so; inflorescences compact ..... 1. *O. marginatus*
  - 2b. Leaf blade papery or leathery, narrowly elliptic, oblanceolate, to narrowly obovate, base attenuate; inflorescences loose.
    - 3a. Leaf blade oblanceolate, rarely obovate or narrowly elliptic, 8–14(–19) × 2.5–4.5(–6) cm, usually serrate in distal half; petiole 1.5–3 cm ..... 2. *O. matsumuranus*
    - 3b. Leaf blade narrowly elliptic or narrowly obovate, rarely oblanceolate, 4.5–9 × 1.5–3.5 cm, entire; petiole 1–1.5 cm ..... 3. *O. minor*
- 1b. Cymes fascicled in leaf axils; anther connective usually elongated or projecting.
  - 4a. Corolla lobes united in pairs at base, not forming a tube ..... 4. *O. didymopetalus*
  - 4b. Corolla lobes united at base into a tube.
    - 5a. Corolla tube much longer than lobes, cylindric.
      - 6a. Leaf blade usually elliptic, 3–7 cm, obtusely serrate at margin ..... 5. *O. suavis*
      - 6b. Leaf blade oblong, broadly elliptic, or broadly ovate, 1–2.5(–4) cm, sharply serrate at margin ..... 6. *O. delavayi*
    - 5b. Corolla tube subequalling or shorter than lobes, if longer, then tube urceolate.
      - 7a. Branchlets, petiole, and adaxial surface of midrib ± hairy.
        - 8a. Pedicel puberulent ..... 7. *O. pubipedicellatus*
        - 8b. Pedicel glabrous.
          - 9a. Corolla lobes longer than or rarely equal to tube.
            - 10a. Leaf blade oblong-elliptic or elliptic, usually with 3 or 4 pairs of spiny teeth; stamens attached to base of corolla tube ..... 8. *O. heterophyllus*
            - 10b. Leaf blade elliptic to oblanceolate, entire or if serrate, then with ca. 20 pairs of dentate-serrate teeth on each side; stamens attached to middle of corolla tube ..... 9. *O. henryi*
          - 9b. Corolla lobes subequalling or rarely shorter than tube.
            - 11a. Corolla urceolate, lobes shorter than tube ..... 10. *O. urceolatus*
            - 11b. Corolla not urceolate, lobes almost as long as tube.
            - 12a. Leaf blade dentate or serrate, if entire then veins obviously raised and reticulate.
            - 13a. Petiole 2–5 mm; leaf blade usually with 6–10(–17) pairs of spiny teeth, base ± rounded to subcordate, rarely broadly cuneate ..... 11. *O. armatus*

- 13b. Petiole 10–15 mm; leaf blade entire or with 3 or 4 pairs of serrations, base cuneate to blunt ..... 12. *O. venosus*
- 12b. Leaf blade entire.
- 14a. Leaf blade elliptic or obovate, ca. 2 × as long as broad, base broadly cuneate to rounded ..... 13. *O. cooperi*
- 14b. Leaf blade narrowly elliptic to lanceolate, ca. 4 × as long as broad, base narrowly cuneate ..... 14. *O. attenuatus*
- 7b. Branchlets, petiole, and midrib usually glabrous.
- 15a. Bracts hairy or at least ciliate.
- 16a. Leaf venation neither reticulate nor raised; bracts hirsute ..... 17. *O. enervius*
- 16b. Leaf venation reticulate or distinctly raised; bracts ciliate.
- 17a. Leaf blade usually ovate-lanceolate or elliptic, serrulations (when present) 2–3 mm ..... 15. *O. yunnanensis*
- 17b. Leaf blade obovate-lanceolate or obovate-elliptic to elliptic, serrulations (when present) 1 mm ..... 16. *O. serrulatus*
- 15b. Bracts glabrous.
- 18a. Calyx less than 1 mm; leaf blade less than 6 cm ..... 18. *O. fordii*
- 18b. Calyx ca. 1 mm; leaf blade usually more than 6 cm.
- 19a. Corolla lobes more than 2 × as long as tube; leaf veins not reticulate, primary veins impressed adaxially ..... 19. *O. fragrans*
- 19b. Corolla lobes subequal to ca. 2 × as long as tube.
- 20a. Leaf venation neither reticulate nor raised, blade elliptic or narrowly so ..... 20. *O. gracilinervis*
- 20b. Leaf venation reticulate or raised, blade elliptic to lanceolate or narrowly ovate.
- 21a. Leaf blade lanceolate; stamens attached to distal part of corolla tube ..... 21. *O. lanceolatus*
- 21b. Leaf blade narrowly ovate, elliptic, oblong, or oblanceolate; stamens attached to middle or basal part of corolla tube.
- 22a. Stamens attached to middle of corolla tube; leaf venation reticulate, veins obvious and raised ..... 22. *O. reticulatus*
- 22b. Stamens attached to basal part of corolla tube; leaf venation obscure, reticulate but primary veins raised ..... 23. *O. hainanensis*

**1. *Osmanthus marginatus* (Champion ex Bentham) Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 88. 1889.**

厚边木犀 hou bian mu xi

Shrubs or trees 5–10(–20) m. Branchlets, petiole, and leaf blade glabrous. Petiole 1–2.5 cm; leaf blade broadly elliptic to narrowly lanceolate, rarely obovate, 7–20 × 2–5.5 cm, thick or very thick leathery, base narrowly to broadly cuneate, margin entire or rarely obscurely serrate along distal half, apex acuminate; midrib and 6–8 primary veins somewhat impressed adaxially and raised abaxially. Cymes in short and compact panicles, axillary, rarely terminal, 1–2 cm, 10–20-flowered; bracts ovate, 2–2.5 cm. Pedicel 1–2 mm. Calyx 1.5–2 mm. Corolla yellowish or greenish; tube 1.5–2 mm; lobes oblong, reflexed, ca. 1.5 mm. Stamens attached to distal part of corolla tube. Drupe black, ellipsoid or obovoid, 2–2.5 × 1–1.5 cm.

Valleys, dense woods on slopes or in ravines, along streams; 800–2500 m. S Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan (Ryukyu Islands)].

This species is in need of revision. The coastal populations appear to be different from the inland ones, but there is insufficient material of the latter to reach a firm decision.

- 1a. Leaves broadly elliptic, elliptic, lanceolate-elliptic, or rarely obovate, 7–15 × 2.5–5.5 cm, base cuneate to broadly so 1a. var. *marginatus*
- 1b. Leaves lanceolate to narrowly lanceolate, 8–20 × 2–4 cm, base narrowly cuneate to cuneate ..... 1b. var. *longissimus*

### 1a. *Osmanthus marginatus* var. *marginatus*

厚边木犀(原变种) hou bian mu xi (yuan bian zhong)

*Olea marginata* Champion ex Benth, Hooker's J. Bot. Kew Gard. Misc. 4: 330. 1852; *Gonocaryum sinense* Handel-Mazzetti; *Osmanthus angustifolius* H. T. Chang; *O. apiculatus* H. T. Chang; *O. caudatus* H. T. Chang; *O. corymbosus* H. W. Li; *O. cylindricus* H. T. Chang; *O. longicarpus* H. T. Chang; *O. longispermus* H. T. Chang; *O. marginatus* var. *pachyphyllus* (H. T. Chang) R. L. Lu; *O. matsudai* Hayata; *O. nanchuanensis* H. T. Chang; *O. nudirhachis* H. T. Chang; *O. omeiensis* Fang ex H. T. Chang; *O. pachyphyllus* H. T. Chang; *O. sinensis* (Handel-Mazzetti) Handel-Mazzetti; *O. triandrus* H. T. Chang.

Leaf blade broadly elliptic to lanceolate-elliptic or rarely obovate, 7–15 × 2.5–5.5 cm, base broadly cuneate or cuneate. Fl. May–Jun, fr. Nov–Dec.  $2n = 46^*$ .

Valleys, dense woods on slopes; 800–2500 m. S Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan (Ryukyu Islands)].

### 1b. *Osmanthus marginatus* var. *longissimus* (H. T. Chang) R. L. Lu, Acta Phytotax. Sin. 27: 72. 1989.

长叶木犀 chang ye mu xi

*Osmanthus longissimus* H. T. Chang, Acta Sci. Nat. Univ. Sunyatseni 2: 6. 1982.

Leaf blade lanceolate to narrowly lanceolate, 8–20 × 2–4 cm, base narrowly cuneate to cuneate.

\* Woods on slopes or in ravines, along streams; 1000–1700 m. Fujian, Guangxi, Guizhou, Hunan, Jiangxi, Zhejiang.

### 2. *Osmanthus matsumuranus* Hayata, J. Coll. Sci. Univ. Tokyo 30(1): 192. 1911.

牛失果 niu shi guo

*Osmanthus longipetiolatus* H. T. Chang; *O. marginatus* var. *formosanus* Matsumura; *O. maximus* H. T. Chang; *O. obovatifolius* Kanehira; *O. wilsonii* Nakai.

Shrubs or trees 2.5–10 m, glabrous. Branchlets compressed. Petiole 1.5–3 cm; leaf blade oblanceolate, rarely obovate or narrowly elliptic, 8–14(–19) × 2.5–4.5(–6) cm, thin leathery to thick papery, base attenuate and decurrent, margin entire or serrate along distal half, apex acuminate and mucronate; midrib and (7–)10–12(–15) primary veins adaxially slightly impressed and abaxially raised. Cymes in short panicles, axillary, 1.5–2 cm; bracts broadly ovate, 1–1.5 mm. Pedicel ca. 2 mm. Calyx 1.5–2 mm; lobes 0.5–1 mm. Corolla greenish or pale yellow-green, 3–4 mm; tube equaling reflexed lobes. Stamens attached to distal part of corolla tube. Drupe ripening purple to black, ellipsoid, 1.5–3 × 0.7–1.5 cm. Fl. May–Jun, fr. Nov–Dec.  $2n = 46^*$ .

Dense woods on slopes, thickets of valleys; 800–1500 m. Anhui, Guangdong, Guangxi, Guizhou, Jiangxi, Taiwan, Yunnan, Zhejiang [Cambodia, India, Laos, Vietnam].

### 3. *Osmanthus minor* P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 465. 1958.

小叶月桂 xiao ye yue gui

Shrubs or small trees 3–5(–10) m. Petiole 1–1.5 cm, glabrous; leaf blade narrowly elliptic or narrowly obovate, rarely oblanceolate, 4.5–9 × 1.5–3.5 cm, leathery or thick so, base attenuate, margin entire, apex acuminate or sometimes caudate; primary veins 6–8 on each side of midrib, adaxially obscure, abaxially slightly raised. Panicles short, slender, axillary, 1–1.5 cm, 8–12-flowered; bracts deltate, thick, hairy at base. Pedicel ca. 2 mm. Calyx 1–1.5 mm; lobes deltate or ovate. Corolla white; tube 1.5–2 mm, ca. as long as lobes. Stamens attached to distal part of corolla tube. Drupe ripening black, ellipsoid or slightly obovoid, 1.5–2 × 0.8–1.2 cm. Fl. May–Jun, fr. Oct–Nov.

\* Mixed woods. Fujian, Guangdong, Guangxi, Jiangxi, Zhejiang.

### 4. *Osmanthus didymopetalus* P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 536. 1958.

双瓣木犀 shuang ban mu xi

Trees 3–9(–18) m. Branchlets glabrous. Petiole 1–2 cm, glabrous or pubescent at first; leaf blade narrowly elliptic, rarely elliptic or lanceolate, 6.5–10(–16) × 2–2.5(–4) cm, thick leathery, base cuneate, margin entire, apex acute; midrib abaxially raised and glabrous or rarely pubescent near petiole; primary veins 5–8 on each side of midrib, obscure adaxially, slightly raised abaxially. Cymes fascicled in leaf axils, 6 to many flowered; bracts 2–3 mm, pubescent or glabrous. Pedicel 3–10 mm. Calyx ca. 0.5 mm. Corolla white to yellow; lobes lorate, 3–4 mm, united in pairs at base. Stamens attached to united part of corolla lobes. Drupe purple or purplish, narrowly ovoid or ellipsoid, 1.5–2.5 cm × 6–10 mm. Fl. Sep–Oct, fr. Feb.

\* Mixed woods; 800–1500 m. Hainan.

### 5. *Osmanthus suavis* King ex C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 607. 1882.

香花木犀 xiang hua mu xi

*Siphonosmanthus suavis* (King ex C. B. Clarke) Stapf.

Shrubs or small trees 3–5(–8) m. Branchlets pubescent. Petiole 5–7(–10) mm, glabrous or rarely pubescent; leaf blade elliptic, rarely ovate, 3–7 × 1.5–2.5 cm, thin leathery, glabrous except for midrib adaxially, base cuneate, margin obtusely serrate, apex acute; primary veins 5–8 on each side of midrib, obscure. Cymes fascicled in leaf axils or terminal, 6–9-flowered; bracts broadly ovate, 2–3 mm. Pedicel 3–8 mm. Calyx 3–4 mm. Corolla white or creamy; tube 6–9 mm; lobes 3–4 mm. Stamens attached to middle of corolla tube. Drupe

blue-black, ellipsoid or ovoid, ca. 8 × 5 mm. Fl. Apr–May, fr. Oct–Nov.

Dense forests or thickets on slopes; 2400–3000 m. SE Xizang, Yunnan [Bhutan, India, Myanmar, Nepal].

**6. *Osmanthus delavayi*** Franchet, Bull. Mens. Soc. Linn. Paris 1: 613. 1886.

山桂花 shan gui hua

*Ligustrum phillyrea* H. Léveillé; *Siphonosmanthus delavayi* (Franchet) Stapf.

Shrubs 2(–5) m. Branchlets densely pubescent. Petiole 2–3 mm, puberulent at least when young; leaf blade oblong, broadly elliptic or broadly ovate, 1–2.5(–4) × 1–1.5(–2) cm, thick leathery, base broadly cuneate, margin with 6–8 pairs of sharp serrations ca. 1 mm, apex acute to obtuse and mucronulate; midrib raised, pubescent adaxially, especially near petiole, primary veins 4 or 5 on each side of midrib, obscure. Cymes fascicled in leaf axils or terminal, 4–8-flowered; bracts broadly ovate, acute, slightly puberulent. Pedicel 2–5 mm, glabrous or rarely slightly puberulent. Calyx 2–4 mm. Corolla white; tube 6–10 mm; lobes 4–6 mm. Stamens attached to middle of corolla tube; connective elongated into an obvious mucro. Drupe blue-black, long ovoid, 1–1.2 cm. Fl. Apr–May, fr. Sep–Oct.

\* Montane regions, ravines, thickets, mixed woods; 2100–3400 m. Guizhou, Sichuan, Yunnan.

**7. *Osmanthus pubipedicellatus*** L. C. Chia ex H. T. Chang, Acta Sci. Nat. Unit. Sunyatseni 2: 15. 1982.

毛柄木犀 mao bing mu xi

Shrubs ca. 3 m. Branchlets, bracts, and pedicels puberulent. Petiole 1.2–1.5(–1.8) cm, puberulent, glabrescent; leaf blade narrowly elliptic, rarely lanceolate, 6.5–9 × 2–3 cm, thick leathery, glabrous, base narrowly cuneate, margin entire, apex long acuminate; midrib adaxially deeply impressed, abaxially obviously raised; primary veins 6 or 7 on each side of midrib, obscure. Cymes fascicled in leaf axils, with 1 or 2 buds per axil and ca. 5 flowers per bud; bracts 2.5–3 mm. Pedicel 3–5 mm. Calyx ca. 1.5 mm; lobes ca. 1 mm. Corolla white; tube ca. 1 mm; lobes ca. 1.5 mm. Stamens attached to base of corolla tube; connective elongated into a deltate mucro. Drupe not seen. Fl. Sep.

\* Sandy soil on slopes. Guangdong.

**8. *Osmanthus heterophyllus*** (G. Don) P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 508. 1958.

冬树 dong shu

Shrubs or small trees 2–8 m. Branchlets and petiole pubescent when young. Petiole 5–10 mm; leaf blade oblong-elliptic or elliptic, 4.5–6(–7) × 1.5–2.5(–3) cm, leathery, base cuneate or broadly so, margin entire or with 3 or 4 pairs of spiny teeth 5–9 mm; midrib raised on both surfaces, adaxially pubescent and especially denser near petiole; primary veins

adaxially raised, abaxially obscure. Cymes fascicled in leaf axils, 5–8-flowered; bracts 2–2.5 mm, puberulent or glabrous. Pedicel 5–6 mm, glabrous. Calyx 1–1.5 mm. Corolla white; tube 1–2 mm; lobes 2.5–5 mm. Stamens ca. as long as corolla lobes, attached to base of corolla tube. Drupe dark-purple, ovoid, ca. 1.5 × 1 cm.

Taiwan [Japan].

1a. Basal inflorescence bracts glabrous or slightly puberulent; corolla tube 1–1.5 mm, lobes 2.5–3.5 mm; leaves entire or spiny

margined ..... 8a. var. *heterophyllus*

1b. Basal inflorescence bracts densely puberulent; corolla tube 1.5–2 mm, lobes ca. 5 mm; leaves

entire ..... 8b. var. *bibracteatus*

**8a. *Osmanthus heterophyllus* var. *heterophyllus***

冬树(原变种) dong shu (yuan bian zhong)

*Ilex heterophylla* G. Don, Gen. Hist. 2: 17. 1832; *Osmanthus integrifolius* Hayata.

Leaf margin entire or with 3 or 4 pairs of spiny teeth 5–9 mm. Bracts glabrous to slightly puberulent. Corolla tube 1–1.5 mm; lobes 2.5–3.5 mm. Fl. Nov–Dec, fr. May–Jun.  $2n = 46^*$ .

Taiwan [Japan].

**8b. *Osmanthus heterophyllus* var. *bibracteatus*** (Hayata) P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 516. 1958.

异叶冬树 yi ye dong shu

*Osmanthus bibracteatus* Hayata, Ic. Pl. Formos. 9: 71. 1920; *O. ilicifolius* (Hasskarl) Hort. ex Carrière var. *bibracteatus* (Hayata) K. Mori.

Leaf margin entire. Bracts densely puberulent. Corolla tube 1.5–2 mm; lobes ca. 5 mm.

\* Taiwan.

**9. *Osmanthus henryi*** P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 499. 1958.

蒙自桂花 meng zi gui hua

*Osmanthus caudatifolius* P. Y. Bai & J. H. Pang.

Shrubs or small trees 3–4(–10) m. Branchlets puberulent, glabrescent. Petiole 8–10(–12) mm; leaf blade narrowly elliptic to oblanceolate, (7–)8–9(–11) × (2–)3–4.5 cm, thick leathery, base narrowly cuneate, margin entire or with ca. 20 pairs of teeth 1 mm, apex acuminate and caudate; midrib

adaxially puberulent, denser near petiole, slightly impressed, abaxially ± raised; primary veins 7–9 on each side of midrib, slightly raised. Cymes fascicled in leaf axils, 4- or 6-flowered; bracts ovate, puberulent. Pedicel 6–10 mm, glabrous. Calyx ca. 1 mm; lobes broadly deltate. Corolla white or yellowish; tube ca. 1 mm; lobes ca. 2 mm. Stamens attached to middle of corolla tube; connective elongated into an obvious mucro. Drupe long ellipsoid, ca. 2 cm. Fl. Oct–Nov, fr. May.

\* Slopes, woods of valleys, thickets on slopes; 1000–3000 m. Guizhou, Hunan, Yunnan.

**10. *Osmanthus urceolatus* P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 527. 1958.**

坛花木犀 tan hua mu xi

*Osmanthus hupehensis* H. T. Chang.

Shrubs to 3 m. Branchlets and bracts densely puberulent. Petiole 1–1.5 cm, puberulent; leaf blade elliptic or narrowly so, (4–)5–8(–9) × (1–)2–3(–3.5) cm, thin leathery, glabrous or pubescent only along midrib adaxially, especially near the petiole, base broadly cuneate or rounded-cuneate, margin with 10–15 pairs of serrulations, subentire near base, apex long acuminate; midrib and 6 or 7 primary veins obscure. Cymes fascicled in leaf axils, 3- or 4-flowered; bracts 2–3 mm. Pedicel 5–10 mm, glabrous. Calyx ca. 1 mm; lobes apically rounded, erose. Corolla urceolate, 5–7 mm; lobes broadly deltate, 1–1.5 mm. Stamens attached to basal part of corolla tube; connective apically projecting into a rounded appendage. Drupe not seen. Fl. Sep.

\* Mountains, woods; ca. 1600 m. Hubei, Sichuan.

**11. *Osmanthus armatus* Diels, Bot. Jahrb. Syst. 29: 532. 1900.**

红柄木犀 hong bing mu xi

*Osmanthus obtusifolius* H. T. Chang.

Shrubs or trees 2–6 m. Branchlets pubescent at first, glabrescent. Petiole 2–5(–8) mm, densely pubescent; leaf blade oblong-lanceolate to elliptic, 6–8(–15) × 2–2.5(–4.5) cm, thick leathery, glabrous except for midrib adaxially, base subrounded to subcordate, rarely broadly cuneate, margin with 6–10(–17) pairs of spiny teeth 2–4 mm, or rarely entire, apex acuminate with sharp tip; primary veins (6–)8–10(–15) on each side of midrib, distinctly raised. Cymes fascicled in leaf axils, 4–12-flowered; bracts broadly ovate, pubescent. Pedicel 6–10 mm, glabrous. Calyx 1–1.5 mm. Corolla white, 4–5 mm; tube ca. as long as lobes. Stamens attached to middle of corolla tube; connective elongated into a mucro. Drupe black, ca. 1.5 × 1 cm. Fl. Sep–Oct, fr. Apr–Jun.  $2n = 46$ .

\* Thickets on slopes; ca. 1400 m. Hubei, Sichuan.

**12. *Osmanthus venosus* Pampanini, Nuov. Giorn. Bot. Ital., n. ser., 18: 174. 1911.**

毛木犀 mao mu xi

*Siphonosmanthus venosus* (Pampanini) Knoblauch.

Shrubs or small trees 2–4(–10) m. Branchlets, petiole, and bracts pubescent. Petiole 1–1.5 cm; leaf blade narrowly elliptic, lanceolate, or oblanceolate, (4.5–)8–10(–14) × (1.5–)2.5–3(–4) cm, leathery, base cuneate to blunt, margin entire or with 3 or 4 pairs of teeth at middle, rarely fully serrate, apex acuminate or rarely acute; midrib glabrous or puberulent adaxially; primary veins 9–11 on each side of midrib, distinctly raised. Cymes fascicled in leaf axils, 4–10-flowered; bracts ca. 2.5 mm. Pedicel 3–8 mm, glabrous. Calyx 1–1.5 mm. Corolla white; tube ca. 2.5 mm; lobes ovate, ca. 2 mm. Stamens attached to middle of corolla tube; connective apically projecting into a large rounded appendage. Drupe not seen. Fl. Aug–Sep.

\* Montane woods; 300–1100 m. Hubei.

**13. *Osmanthus cooperi* Hemsley, Bull. Misc. Inform. Kew 1896: 18. 1896.**

宁波木犀 ning bo mu xi

Shrubs or small trees 3–5(–8) m. Petiole 1–2 cm; leaf blade elliptic or obovate, (4–)6–8(–10) × (2.5–)3–4(–5) cm, leathery, base broadly cuneate to rounded, margin entire, apex acuminate and slightly caudate; midrib pubescent, denser near petiole, impressed adaxially, raised abaxially; primary veins 7 or 8 on each side of midrib, obscure. Cymes fascicled in leaf axils, 4–12-flowered; bracts broadly ovate, ca. 2 mm, pubescent, rarely glabrous. Pedicel 3–5 mm, glabrous. Calyx 1.5 mm; lobes rounded, ca. 0.5 mm. Corolla white, ca. 4 mm; tube ca. as long as lobes. Stamens attached just above middle of corolla tube; connective elongated into an obvious mucro. Drupe blue-black, 1.5–2 cm. Fl. Sep–Oct, fr. May–Jun.

\* Slopes, shady and moist places in woods of valleys, ravines; 400–800 m. Anhui, Fujian, S Jiangsu, Jiangxi, Zhejiang.

**14. *Osmanthus attenuatus* P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 524. 1958.**

狭叶木犀 xia ye mu xi

*Osmanthus lipingensis* D. J. Liu.

Shrubs ca. 4 m. Branchlets, petiole, and bracts puberulent. Petiole 7–10 mm; leaf blade narrowly elliptic to lanceolate, 6–8 × 1.5–2 cm, leathery, glabrous except for midrib adaxially, base narrowly cuneate, margin entire but drying wavy, apex long acuminate and caudate; midrib raised; primary veins 6 or 7 on each side of midrib, obscure. Cymes axillary, 4- or 5(–10)-flowered; bracts ca. 3 mm. Pedicel 2–5 mm, glabrous. Calyx ca. 1 mm; lobes erose. Corolla tube 2–3 mm; lobes ca. 2 mm. Stamens attached to middle of corolla tube; connective elongated into an obvious mucro. Drupe not seen. Fl. Sep.

\* Montane regions, woods on slopes; 2100–2900 m. Guangxi, Guizhou, Yunnan.

**15. *Osmanthus yunnanensis* (Franchet) P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 495. 1958.**

野桂花 ye gui hua

*Pittosporum yunnanense* Franchet, Bull. Soc. Bot. France 33: 415. 1886; *Osmanthus bambusifolius* H. T. Chang; *O. brevipedicellatus* H. T. Chang; *O. forrestii* Rehder; *O. forrestii* var. *brevipedicellatus* Handel-Mazzetti; *O. liangshanensis* H. T. Chang; *O. polyneurus* H. T. Chang; *O. rehderianus* Handel-Mazzetti; *O. rehderianus* var. *tenianus* Handel-Mazzetti.

Trees or shrubs 3–6(–10) m. Branchlets smooth, puberulent at first. Petiole 6–10(–15) mm, glabrous or rarely hairy; leaf blade ovate-lanceolate or elliptic, 8–14 × 2.5–4 cm, leathery, base broadly cuneate or subrounded, margin entire or with 20–25 pairs of sharp teeth 2–3 mm, apex acuminate; midrib raised on both surfaces; primary veins 10–12 on each side of midrib, abaxially raised. Cymes fascicled in leaf axils, 5–12-flowered; bracts 2–4 mm, glabrous, margin ciliate. Pedicel ca. 1 cm, glabrous. Calyx ca. 1 mm; lobes apically erose or entire. Corolla yellow-white, ca. 5 mm, almost parted to base; lobes elliptic or broadly ovate. Stamens attached to base of corolla lobes; connective apically projecting into a minute appendage. Drupe purple-black, long ovoid, 1–1.5 cm. Fl. Apr–May, fr. Jul–Aug.

\* Dense woods, mixed forests on slopes, ravines; 1400–2800 m. Sichuan, Xizang, Yunnan.

**16. *Osmanthus serrulatus* Rehder in Sargent, Pl. Wilson. 2: 610. 1916.**

短丝木犀 duan si mu xi

Shrubs or small trees 2–4(–8) m. Branchlets and petiole glabrous or puberulent. Petiole 8–10 mm; leaf blade obovate-lanceolate or obovate-elliptic to elliptic, 6–14 × 2–4.5 cm, leathery, base cuneate, margin with 12–20(–35) pairs of spiny teeth 1 mm, sometimes serrate only on distal half, rarely entire, apex caudate and mucronulate; primary veins 8–10 on each side of midrib, abaxially raised. Cymes fascicled in leaf axils, 4–9-flowered; bracts ciliate or glabrous. Pedicel 1–2 cm, glabrous. Calyx ca. 1 mm; lobes apically acute or erose. Corolla white, 3–4(–5) mm, divided almost to base; lobes 2.5–3.5 mm. Stamens attached to base of corolla lobes; connective elongated into a mucro. Drupe blue-black, ellipsoid, 1–1.5 cm × 6–8 mm. Fl. Apr–May, fr. Nov–Dec.

\* Roadsides, woods, thickets on slopes; 700–2000 m. Fujian, Guangxi, Sichuan.

**17. *Osmanthus enervius* Masamune & K. Mori, J. Jap. Bot. 15: 548. 1939.**

无脉木犀 wu mai mu xi

Trees small, glabrous. Branchlets angular. Petiole 5–7 mm; leaf blade lanceolate or elliptic-lanceolate, 5–7 × 1.5–2 cm, leathery, base cuneate, margin entire, apex acuminate and sharp tipped; midrib slightly impressed adaxially, raised abaxially; primary veins 5 or 6 on each side of midrib,

obscure. Cymes fascicled in leaf axils, many flowered; bracts 1–2 mm, hirsute, ciliate. Pedicel 1–5 mm. Calyx ca. 0.8 mm. Corolla tube ca. 1.5 mm; lobes semiorbicular, ca. 1.3 mm. Stamens attached to middle of corolla tube; connective apically projecting into a small and rounded appendage. Drupe not seen.

Taiwan [Japan (Ryukyu Islands)].

**18. *Osmanthus fordii* Hemsley in F. B. Forbes & Hemsley, J. Linn. Soc., Bot. 26: 88. 1889.**

石山桂花 shi shan gui hua

Shrubs ca. 2 m, glabrous. Petiole 5–10 mm; leaf blade elliptic or rarely narrowly ovate, 3–5(–6) × 2–2.5 cm, thin leathery, base broadly cuneate or subrounded, margin entire, apex acute or obtuse; midrib slightly impressed adaxially, raised abaxially; primary veins 4–6 on each side of midrib, raised. Cymes fascicled in leaf axils, 6–12-flowered; bracts ca. 3 mm. Pedicel 1–4 mm. Calyx ca. 0.5 mm, membranous at margin. Corolla white; tube ca. 1.5 mm; lobes rounded, 1.5–2 mm. Stamens attached to middle of corolla tube; connective apically slightly projected into an obtuse appendage. Drupe not seen.

\* Guangdong, cultivated in gardens of Guangxi.

**19. *Osmanthus fragrans* Loureiro, Fl. Cochinch. 1: 29. 1790.**

木犀 mu xi

*Olea fragrans* Thunberg ex Murray, Syst. Veg. ed. 14, 57. 1784; *O. ovalis* Miquel; *Osmanthus longibracteatus* H. T. Chang; *O. macrocarpus* P. Y. Bai.

Trees or shrubs 3–5(–10) m, glabrous. Petiole 0.8–1.2 (–1.5) cm; leaf blade elliptic to elliptic-lanceolate, 7–14.5 × 2.6–4.5 cm, base cuneate or broadly cuneate, margin entire or usually serrulate along distal half, apex acuminate; midrib and 6–8(–10) primary veins adaxially impressed and abaxially raised. Cymes fascicled in leaf axils, many flowered; bracts broadly ovate, 2–4 mm. Pedicel 4–10 mm. Calyx ca. 1 mm. Corolla yellowish, yellow, or orange, 3–4 mm; tube 0.5–1 mm. Stamens attached to middle of corolla tube; connective elongated into an obscure mucro. Drupe purple-black, ellipsoid, oblique, 1–1.5 cm. Fl. Sep–Oct, fr. Mar.  $2n = 46^*$ .

\* Guizhou, Sichuan, Yunnan.

Widely cultivated for the perfume of flowers. Varieties based on flower color are only cultivars.

**20. *Osmanthus gracilinervis* L. C. Chia ex R. L. Lu, Acta Phytotax. Sin. 27: 71. 1989.**

细脉木犀 xi mai mu xi

Shrubs or small trees 2–5 m, glabrous. Petiole ca. 1 cm; leaf blade elliptic or narrowly elliptic, rarely narrowly ovate, 5–9 × 2–3(–3.5) cm, leathery, base broadly cuneate or obtuse, margin entire, apex long acuminate and caudate; midrib adaxially impressed, abaxially raised; primary veins 5–8 on each side of midrib, obscure. Cymes fascicled in leaf axils, 5–

12-flowered; bracts ca. 1 mm. Calyx ca. 1 mm; lobes shallowly toothed. Corolla white, ca. 4 mm; tube ca. 2 mm; lobes subovate, equaling or rarely slightly shorter than tube. Stamens attached to middle of corolla tube; connective elongated into an obvious mucro. Drupe green-black, ellipsoid, ca. 1.5 cm. Fl. Sep–Oct, fr. Apr–May.

\* Mixed forests on slopes, dense woods in valleys; 300–1200 m. Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang.

**21. *Osmanthus lanceolatus* Hayata, J. Coll. Sci. Tokyo 30(1): 192. 1911.**

锐叶木犀 rui ye mu xi

*Osmanthus daibuensis* Hayata; *O. gamostromus* Hayata.

Shrubs or small trees 5–12 m. Branchlets and petiole glabrous, sometimes puberulent when young. Petiole 5–10 mm; leaf blade lanceolate, 7–10 × 2–3 cm, leathery, base cuneate, somewhat oblique, margin entire or sometimes serrate, apex long acuminate with sharp tip; midrib slightly impressed adaxially, raised abaxially; primary veins 7–9 on each side of midrib, slightly raised on both surfaces. Cymes fascicled in leaf axils, 7–12-flowered; bracts 1.5–3 mm, glabrous. Pedicel 2–10 mm, glabrous. Calyx ca. 1 mm. Corolla white; tube 1.2–1.5 mm; lobes 2.5–3.5 mm. Stamens attached to distal part of corolla tube; connective elongated into a purple-brown mucro. Drupe pale black, ellipsoid, ca. 9 × 5 mm.

\* Montane regions; 2000–3000 m. Taiwan.

**22. *Osmanthus reticulatus* P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 517. 1958.**

网脉木犀 wang mai mu xi

Shrubs or small trees 3–8(–12) m. Petiole 0.5–1.5(–2) cm, glabrous; leaf blade elliptic or narrowly ovate, 6–9 × 2–3.5 cm, leathery, base rounded or broadly cuneate, margin entire or with 15(–30) pairs of sharp teeth, apex acuminate and caudate; midrib glabrescent, adaxially impressed, abaxially raised; primary veins 6–9(–12) on each side of midrib, raised, connected to veinlets in a clear, raised reticulation. Cymes fascicled in leaf axils; bracts 2–3 mm, glabrous or slightly pubescent. Pedicel 3–5(–8) mm, glabrous. Calyx ca. 1 mm. Corolla white; tube ca. 2 mm; lobes 1.5–2 mm. Stamens attached to middle of corolla tube; connective elongated into an obvious mucro. Drupe purple-black, long ellipsoid, ca. 1 cm. Fl. Oct–Nov, fr. May–Jun.

\* Dense woods of montane regions, forests in valleys, along streams. Guangdong, Guangxi, Guizhou, Hunan, Sichuan.

**23. *Osmanthus hainanensis* P. S. Green, Notes Roy. Bot. Gard. Edinburgh 22: 504. 1958.**

显脉木犀 xian mai mu xi

Shrubs or small trees 5–6 m. Branchlets glabrous when young. Petiole 1.5–2 cm, glabrous; leaf blade elliptic, oblong, to oblanceolate, 7–12.5 × 2.5–4.5 cm, thick leathery, base cuneate, margin entire, apex caudate-acuminate and with a blunt tip; midrib adaxially slightly raised; primary veins 9–12 on each side of midrib, raised on both surfaces, connected with veinlets into an obscure reticulation. Cymes fascicled in leaf axils, 4- or 5-flowered; bracts 2–3.5 mm, glabrous. Pedicel 5–7 mm, glabrous. Calyx ca. 1 mm. Corolla white, ca. 5 mm; tube 2–2.5 mm. Stamens attached to basal part of corolla tube; connective slightly elongated into a minute mucro. Drupe ellipsoid or ovoid-ellipsoid, ca. 1.5 × 0.8 cm. Fl. Oct–Nov, fr. May.

\* Woods; ca. 1800 m. Hainan.

