

3. MAHONIA Nuttall, Gen. N. Amer. Pl. 1: 211. 1818, nom. cons.

十大功劳属 shi da gong lao shu

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Odostemon Rafinesque.

Shrubs or small trees, evergreen, 0.3–8 m tall. Spines absent. Leaves imparipinnate, alternate, sessile or petiolate; petiole to 14 cm; leaflets 3–41; lateral leaflets usually sessile; terminal leaflet sessile or petiolulate; margins of leaflets entire, variously toothed, or with coarse or fine serrations. Inflorescence terminal, of (1–)3–18-fascicled simple or branched racemes or panicles, 3–35 cm, subtended by leafletlike bracts. Pedicel 1.5–24 mm, subtending bract shorter or longer than pedicel. Flowers yellow, with 3 whorls of sepals and 1 whorl of petals, with or without glands at base of petals. Anther connective not prolonged, apiculate or conspicuously prolonged. Ovary ellipsoid; ovules 1–7; styles absent or to 3 mm, persistent on mature fruit. Fruit berries, bluish or black, often glaucous. Seeds 1–7.

About 60 species: mainly in E and SE Asia, also in W North America, Central America, and W South America; 31 species (27 endemic) in China; six additional species (five endemic) are insufficiently known.

Most of the Chinese wild populations of *Mahonia* have been extirpated, probably as a result of over-collecting for medicinal use, and the plants now being described are probably individuals that vary only in minor ways from the relatively few specimens that exist in herbaria.

Ahrendt (J. Linn. Soc., Bot. 57: 1–410. 1961) recognized two “groups” in *Mahonia*: “Orientales” and “Occidentales.” All of the Asian species of *Mahonia*, plus a single North American species from the Pacific Northwest, *M. nervosa* (Pursh) Nuttall, are in the “Orientales.”

See the paper by J. Y. Wu, H. N. Qin, D. Y. Xue, and K. X. Zhou, “Study on seed morphology of *Mahonia* (Berberidaceae)” (Guihaia 30: 155–160. 2010).

1a. Inflorescences panicles.

2a. Petals retuse; pedicels 6–11 mm, bracts 2–3 mm; teeth per upper leaflet 4–11; ovules 5 or 6 1. *M. bracteolata*

2b. Petals emarginate or incised; pedicels 2.5–3 mm or 13–24 mm, bracts 1–2 mm or 4.5–7 mm; teeth per upper leaflet 1–5; ovules 1–4.

3a. Petals emarginate; inflorescences 25–35 cm; leaflets 2 or 3 pairs, abaxially pruinose; pedicels 13–24 mm 2. *M. gracilipes*

3b. Petals incised; inflorescences 11–18 cm; leaflets 5–9 pairs, abaxially not pruinose; pedicels 2.5–3 mm 3. *M. monyulensis*

1b. Inflorescences racemes.

4a. Inflorescence of branched racemes.

5a. Petals incised; leaflets 12–20 pairs; ovules 2 or 3 4. *M. oiwakensis*

5b. Petals emarginate; leaflets 4–9 pairs; ovules 4–7.

6a. Bracts longer than pedicels; fruit obovoid, style less than 0.5 mm; leaf blade basally cuneate 5. *M. calamicaulis*

6b. Bracts shorter than to slightly longer than pedicels; fruit globose, style 2–3 mm; leaf blade basally oblique, rounded 6. *M. duclouxiana*

4b. Inflorescence of unbranched racemes.

7a. Petals entire.

8a. Petioles 3.5–14 cm; leaflets entire or with 1–3 inconspicuous teeth near apex 9. *M. shenii*

8b. Petioles 0.5–2.5 cm; leaflets with teeth.

9a. Leaflets remote, not contiguous, apex acuminate or caudate-acuminate, margin with 9–23 teeth on each side; anther connective not prolonged; fruit globose 7. *M. taronensis*

9b. Leaflets contiguous, apex acute, margin with 2–7 teeth on each side; anther connective prolonged; fruit obovoid 8. *M. subimbricata*

7b. Petals emarginate or incised.

10a. Leaves petiolate, petiole 2.5–9 cm.

11a. Inner sepals lanceolate or obovate; anther connective prolonged.

12a. Leaflets subrhombic or elliptic, margin with 2–4 teeth on each side; inner sepals obovate 10. *M. breviracema*

12b. Leaflets lanceolate, margin 8–20-spinose-serrate on each side; inner sepals lanceolate 11. *M. setosa*

11b. Inner sepals oblong or elliptic; anther connective not prolonged.

13a. Inflorescence 1- or 2-fascicled racemes; leaflets ovate or ovate-elliptic, basally truncate 12. *M. decipiens*

13b. Inflorescence 4–10-fascicled racemes; leaflets basally cuneate.

14a. Leaflets 2 or 3 pairs, oblong-ovate or elliptic, shortly petiolate 13. *M. paucijuga*

14b. Leaflets 2–9 pairs, lanceolate to elliptic-lanceolate or elliptic, sessile.

15a. Leaflets 2–5 pairs; pedicels ca. as long as bracts; glands of petals distinct 14. *M. fortunei*

15b. Leaflets 6–9 pairs; pedicels much longer than bracts; glands of petals distinct or sometimes indistinct 15. *M. eurybracteata*

10b. Leaves sessile or petiole less than 2 cm.

- 16a. Leaflets entire 16. *M. microphylla*
 16b. Leaflets spinose-serrate.
 17a. Leaflets lanceolate, elliptic-lanceolate, or ovate-oblong.
 18a. Leaflets 6–9 pairs, margin 3–9-spinose-serrate on each side; base of petals with glands 15. *M. eurybracteata*
 18b. Leaflets 8–12 pairs, margin 35–65-spinulose-serrulate on each side; base of petals without glands 17. *M. leptodonta*
 17b. Leaflets oblong, ovate, broadly elliptic, or rhombic.
 19a. Veins on adaxial surface of leaflets reticulate, obviously raised, margin of leaflets 2–11-spinose-serrate on each side 18. *M. retinervis*
 19b. Veins on adaxial surface of leaflets reticulate, flat or inconspicuous, margin of leaflets 2–16-dentate on each side.
 20a. Abaxial surface of leaflets pruinose; fruit 10–12 mm in diam. 19. *M. bealei*
 20b. Abaxial surface of leaflets yellowish green, not pruinose; fruit less than 10 mm in diam.
 21a. Floral bracts longer than pedicels.
 22a. Racemes 3–9 per fascicle, 5–9 cm; apex of petals slightly emarginate.
 23a. Racemes 5–9 per fascicle; fruit not pruinose; leaflets serrate, with 4–7(–11) teeth on each side 20. *M. longibracteata*
 23b. Racemes 3–5 per fascicle; fruit pruinose; leaflets spinose-serrate, with 10–16 teeth on each side 21. *M. polyodonta*
 22b. Racemes 8–15 per fascicle, 7–19 cm; apex of petals incised.
 24a. Anther connective prolonged; ovules 2–6; leaf blade adaxially dark green and shiny 22. *M. napaulensis*
 24b. Anther connective not prolonged; ovules 2; leaf blade adaxially green 23. *M. cardiophylla*
 21b. Floral bracts shorter than to ca. as long as pedicels.
 25a. Margin of leaflets 1–3(–6)-dentate on each side 24. *M. nitens*
 25b. Margin of leaflets 4–10-dentate on each side.
 26a. Leaflets markedly overlapping.
 27a. Inflorescence 3–6 racemes; anther connective prolonged; leaflets 8–18 pairs 25. *M. conferta*
 27b. Inflorescence 9 or 10 racemes; anther connective not prolonged; leaflets 5–7 pairs 26. *M. imbricata*
 26b. Leaflets separate or sometimes contiguous.
 28a. Pedicels shorter than floral bracts; anther connective prolonged, rounded; petals 1.8–2 mm wide 31. *M. hancockiana*
 28b. Pedicels longer than or ca. as long as floral bracts; anther connective not prolonged, truncate; petals 2–2.8 mm wide.
 29a. Fruit globose or pyriform, style not persistent; petiolar glands indistinct; leaflets 8–13 pairs 27. *M. bodinieri*
 29b. Fruit ovoid, obovoid, or ellipsoid, persistent style short; petiolar glands conspicuous; leaflets 4–9 pairs.
 30a. Pedicels ca. as long as or slightly longer than floral bracts; leaf blade shiny, apically acute, cuspidate 28. *M. sheridaniana*
 30b. Pedicels markedly longer than floral bracts; leaf blade apically acute or acuminate, sometimes aristate.
 31a. Leaflets 4–6 pairs, margin 2–4-dentate on each side; pedicels 6–7 mm; ovules 4–7 29. *M. japonica*
 31b. Leaflets 5–9 pairs, margin 2–9-spinose-serrate on each side; pedicels 2.5–4 mm; ovules 2 30. *M. fordii*

1. Mahonia bracteolata Takeda, Notes Roy. Bot. Gard. Edinburgh 6: 228. 1917.

鹤庆十大功劳 he qing shi da gong lao

Berberis bracteolata (Takeda) Laferrière; *B. bracteolata* var. *zhongdianensis* (S. Y. Bao) Laferrière; *B. caesia* (C. K. Schneider) Laferrière; *Mahonia bracteolata* var. *zhongdianensis* S. Y. Bao; *M. caesia* C. K. Schneider.

Shrubs, 1.5–2 m tall. Leaves abaxially pale grayish green, adaxially dull grayish green, ovate, 14–25 × 8–14 cm; leaflets 3–8 pairs, contiguous, lowest pair 0.7–1.5 cm above base of petiole, oblong-lanceolate, 2.5–12 × 1.5–3 cm, thick, rigid, abaxially slightly pruinose, veins ± obscure, adaxially indis-

tinctly veined, base broadly cuneate, margins of lower leaflets with 2 or 3 teeth, those of upper leaflets with 4–11 teeth, apex acuminate; rachis stout, ca. 2 mm in diam.; internodes 2–3 cm, decreasing apically. Inflorescence 4–9-fascicled panicles, 7–19 cm; bracts of inflorescence ovate to ovate-lanceolate, 10–15 × 7–10 mm. Pedicel 6–11 mm; floral bracts ovate, 2–3 mm, apically acute. Sepals yellow; outer sepals ovate, 2–3 × 1.5–2 mm; median sepals ovate, 4–6 × 3–4 mm, apically obtuse; inner sepals elliptic, 7–8 × 3.5–4 mm. Petals yellow, oblong-elliptic, 6–7.5 × 2.5–3 mm, base with distinct glands, apex slightly retuse. Stamens 3.5–4.5 mm; anther connective prolonged, ca. 1.5 mm, rounded to truncate. Ovary ca. 5 mm; ovules 5 or 6. Berry slightly pruinose, subglobose, 5–7 mm in diam.; style persistent, ca. 1.5 mm. Fl. Aug–Nov, fr. Sep–Jan.

- Thickets, open hillsides; 1900–2500 m. Sichuan, Yunnan.

2. Mahonia gracilipes (Oliver) Fedde, Bot. Jahrb. Syst. 31: 128. 1901.

细柄十大功劳 xi bing shi da gong lao

Berberis gracilipes Oliver, Hooker's Icon. Pl. 18: t. 1754. 1887; *B. subtriplinervis* Franchet; *Mahonia gracilipes* var. *rhombica* Z. F. Pan & Z. P. Song; *M. subtriplinervis* (Franchet) Fedde.

Shrubs, 0.3–1 m tall. Leaves adaxially dark green, elliptic to narrowly elliptic, 20–41 × 7–11 cm; leaflets 2 or 3 pairs, subsessile, lowest pair 3.5–10 cm above base of petiole, abaxially white pruinose, venation reticulate, raised on both surfaces; rachis stout, 2–3 mm in diam.; internodes 5–7 cm; petiolule 2–5.5 cm; lowest leaflets oblong, 6–11 × 2–5 cm, only slightly smaller than others, apically becoming oblong to oblanceolate, 8–14.5 × 3–7.3 cm, base cuneate, margin entire below middle, 1–5-spinose-serrate on each side; terminal leaflet 8–14.5 × 3–7.3 cm. Inflorescence 3–5 simple or branched fascicles of racemes, loosely flowered, (6–)25–35 cm; bracts of inflorescence lanceolate, 2–2.5 cm × 4–7 mm. Pedicel 1.3–2.4 cm, slender; floral bracts 1–2 mm. Sepals purple; outer sepals ovate, 2.2–3 × 1.5–2 mm, apically acute; median sepals elliptic, 4.5–5 × 2.1–2.8 mm, apically acute; inner sepals elliptic, 5–5.5 × 2.2–3.2 mm. Petals yellow, oblong, 4–5 × 2–2.6 mm, base with distinct glands, apex emarginate with acute lobes. Stamens 2–3 mm; anther connective not prolonged, truncate. Ovary ca. 2 mm; ovules 3 or 4; style short. Berry black, pruinose, globose, 5–8 mm in diam. Fl. Apr–Aug, fr. Sep–Nov.

- Broad-leaved evergreen and mixed broad-leaved evergreen and deciduous forests, forest margins, shaded slopes; 700–2400 m. Sichuan, NE Yunnan.

3. Mahonia monyulensis Ahrendt, J. Linn. Soc., Bot. 57: 303. 1961.

门隅十大功劳 men yu shi da gong lao

Berberis monyulensis (Ahrendt) Laferrière.

Shrubs. Leaves abaxially pale yellowish green, adaxially slightly shiny, green, narrowly elliptic, 20–27 × 9–16 cm; leaflets 5–9 pairs, contiguous or slightly overlapping, lowest pair smaller than others, 1–1.5 cm above base of petiole, abaxially with raised veins, adaxially with indistinct veins; rachis 2–3 mm in diam.; internodes decreasing in length apically, 1.5–4 cm; lowest leaflets broadly ovate to suborbicular, 2–3.5 × 1.2–2.3 cm, apically becoming ovate to oblong-ovate, 3.5–9 × 2–5 cm, base truncate to obliquely rounded, margin with 2 or 3 teeth on each side, apex sharply acute, cuspidate. Inflorescence 5–11-fascicled panicles, 11–18 cm; bracts of inflorescence lanceolate to ovate-lanceolate, 2.5–4 × 0.6–1.5 cm. Pedicel 2.5–3 mm; floral bracts ovate, 4.5–7 × 1.2–2 mm. Sepals golden yellow; outer sepals oblong-ovate, 2.5–3.1 × 1.5–2 mm; median sepals elliptic-ovate, 4–5.5 × 2.7–3 mm; inner sepals elliptic, 6–6.2 × 3–4 mm. Petals golden yellow, oblong to elliptic-obovate, 4.5–5.2 × 2.1–2.3 mm, base with distinct glands, apex narrowly incised, lobes obtuse. Stamens ca. 3.5 mm; anther connective not prolonged, truncate. Ovary ca. 4 mm; ovules 3. Berry unknown. Fl. Mar–Apr, fr. unknown.

- Riverbanks; ca. 2300 m. SE Xizang.

4. Mahonia oiwakensis Hayata, Icon. Pl. Formosan. 6: 1. 1916.

阿里山十大功劳 a li shan shi da gong lao

Berberis caelicolor (S. Y. Bao) Laferrière; *B. discolorifolia* (Ahrendt) Laferrière; *B. lomariifolia* (Takeda) Laferrière; *B. lomariifolia* var. *estylis* (C. Y. Wu ex S. Y. Bao) Laferrière; *B. oiwakensis* (Hayata) Laferrière; *Mahonia alexandri* C. K. Schneider; *M. caelicolor* S. Y. Bao; *M. discolorifolia* Ahrendt; *M. hainanensis* C. M. Hu, Ze X. Li & F. W. Xing; *M. lomariifolia* Takeda; *M. lomariifolia* var. *estylis* C. Y. Wu ex S. Y. Bao; *M. morrisonensis* Takeda.

Trees, 1–7 m tall. Leaves abaxially yellowish green, adaxially dark green, oblong-elliptic, 15–42 × 8–15 cm; leaflets 12–20 pairs, lowest pair 0.5–1 cm above base of petiole, abaxially slightly veined or veins obscure; rachis 2–3 mm thick; internodes 1.5–5 cm, decreasing in length apically, petiolule 5–10 mm or leaflets sometimes sessile; lowest leaflets ovate to suborbicular, 1.5–3 × 1–1.5 cm, apically becoming ovate-lanceolate or lanceolate, 2–10 × 1–2.5 cm, base rounded, margin 2–9-spinose-serrate on each side, apex cuspidate-acuminate; terminal leaflet 4–6.5 × 0.9–1.5 cm. Inflorescence 7–18-fascicled racemes, 9–25 cm; bracts of inflorescence broadly lanceolate to ovate, 1.5–3 cm × 6–10 mm. Pedicel (2–)5–6 mm; floral bracts ovate, 3–3.5 × 1.5–1.8 mm. Outer sepals golden yellow, ovate to suborbicular, 1.2–3 × 1.1–2 mm; median sepals elliptic to ovate, (3–)5–6 × 2.5–3 mm; inner sepals golden yellow, elliptic to oblong, 5–7 × 2.6–3.5 mm. Petals golden yellow, oblong, 4.5–6.5 × 2–2.8 mm, base with distinct glands, apex narrowly incised, acute. Stamens 3–4 mm; anther connective slightly prolonged, subapiculate or rounded. Ovary 3.2–4 mm; ovules 2 or 3; style 0.5–1 mm. Berry blue or bluish black, pruinose, ovoid, 6–8 × 5–6 mm; style persistent, ca. 1 mm. Fl. Aug–Nov, fr. Nov–May.

- Broad-leaved forests, thickets, forest margins, slopes; 600–3800 m. Guizhou, Hong Kong (probably introduced), Sichuan, Taiwan, Xizang, Yunnan.

Mahonia oiwakensis is one of a number of plants with a disjunct distribution on Taiwan and in C and SW China.

5. Mahonia calamicaulis Sparre & C. E. C. Fischer subsp. **kingdon-wardiana** (Ahrendt) T. S. Ying & Boufford in T. S. Ying, Fl. Reipubl. Popularis Sin. 29: 222. 2001.

察隅十大功劳 cha yu shi da gong lao

Mahonia veitchiorum (Hemsley & E. H. Wilson) C. K. Schneider var. *kingdon-wardiana* Ahrendt, J. Linn. Soc., Bot. 57: 302. 1961; *Berberis veitchiorum* Hemsley & E. H. Wilson var. *kingdon-wardiana* (Ahrendt) Laferrière.

Shrubs, 0.6–1.5 m tall. Leaves abaxially pale yellowish green, adaxially dull green, oblong, 20–33 × 10–14 cm; leaflets 4–7 pairs, lowest pair ca. 1 cm above base of petiole, abaxially not pruinose, veins slightly raised; rachis 2–3 mm in diam.; internodes 2.5–4.5 cm; leaflets subsessile or petiolule to ca. 4 cm, elliptic to elliptic-lanceolate, thickly leathery, rigid, lowest leaflets 4–6 × 1.5–3 cm, remaining ones increasing in size from middle of leaf upward, 7–11.5 × 2.5–4 cm, base broadly cune-

ate, margin prominently serrate with 5–9 teeth on each side, apex caudate-acuminate; terminal leaflet larger. Inflorescence 5–7 simple or sometimes shortly branched fascicles of racemes, 6–12 cm; bracts of inflorescence triangular to ovate-oblong, 1.5–2 cm × 6–8 mm. Pedicel 4–6 mm; floral bracts narrowly lanceolate, 6–9 × 1–1.5 mm. Sepals bright yellow; outer sepals ovate-lanceolate, 3.5–4 × 2–2.5 mm; median sepals broadly obovate, 4.5–5 × 2–2.5 mm; inner sepals elliptic, 5–5.5 × 3–3.2 mm. Petals bright yellow, narrowly obovate, 4.5–5 × 1.5–1.7 mm, base with distinct glands, apex slightly emarginate, lobes obtuse. Stamens 3.2–3.5 mm; anther connective not prolonged, truncate. Ovary ellipsoid, ca. 3 mm; ovules 4; style ca. 0.5 mm. Berry purple, ± pruinose, obovoid, 1–1.3 cm × 7–10 mm. Fl. Apr–May, fr. Jun–Jul.

• Evergreen broad-leaved forests, temperate rain forests; 2500–3000 m. SE Xizang.

Mahonia calamicaulis subsp. *calamicaulis*, with leaflet margins spinulose toothed and apex acute, is restricted to India (Assam).

6. *Mahonia duclouxiana* Gagnepain, Bull. Soc. Bot. France 55: 87. 1908.

长柱十大功劳 chang zhu shi da gong lao

Berberis borealis (Takeda) Laferrière var. *parryi* (Ahrendt) Laferrière; *B. dolichostylis* (Takeda) Laferrière; *B. duclouxiana* (Gagnepain) Laferrière; *B. duclouxiana* var. *hilaica* (Ahrendt) Laferrière; *B. flavida* (C. K. Schneider) Laferrière; *B. flavida* var. *integrifoliola* (Handel-Mazzetti) Laferrière; *B. keikoe* Laferrière; *B. siamensis* (Takeda) Laferrière; *B. tsailunii* Laferrière; *Mahonia borealis* Takeda var. *parryi* Ahrendt; *M. dolichostylis* Takeda; *M. duclouxiana* var. *hilaica* Ahrendt; *M. flavida* C. K. Schneider; *M. flavida* f. *integrifoliola* Handel-Mazzetti; *M. mairei* Takeda; *M. siamensis* Takeda.

Shrubs, 1.5–4 m tall. Leaves abaxially yellowish green, adaxially dull to slightly shiny, oblong to oblong-elliptic, 20–70 × 10–22 cm, thinly papery to thinly leathery; leaflets 4–9 pairs, obliquely arranged, separate to remote, sessile, lowest pair ca. 1 cm above base of petiole, abaxial veins distinctly raised, adaxial veins reticulate, indistinctly raised; rachis 3–5 mm in diam.; internodes 2.5–11 cm, decreasing in length apically; leaflets narrowly ovate or oblong-ovate to narrowly oblong-ovate or elliptic-lanceolate, increasing in length but decreasing in width from base to apex, lowest leaflets 1.5–3 × 1.2–2 cm, those above 4.5–16 × 1.5–5 cm, base rounded, oblique, margin with 3–12 teeth on each side, apex acuminate or acute, sometimes terminal leaflet much larger, to 18 × 4 cm, sessile or (more commonly) petiolule 1–3 cm. Inflorescence 4–15 simple or shortly branched fascicles of racemes, 8–30 cm; bracts of inflorescence broadly lanceolate to ovate, 2–3.5 cm × 5–8 mm. Pedicel 3.2–6 mm; floral bracts broadly lanceolate to ovate, 3–6.5 × 1.5–2.5 mm. Sepals yellow; outer sepals ovate to triangular-ovate, 1.1–3 × 1.1–5 mm; median sepals ovate or ovate-oblong to elliptic, 2.2–5 × 1.9–2.5 mm; inner sepals oblong to elliptic, 3.2–8 × 2–3.6 mm. Petals yellow, oblong to elliptic, 3–7.2 × 1.6–3.5 mm, base with distinct glands, apex emarginate, lobes obtuse. Stamens 3.5–5.5 mm; anther connective conspicuously prolonged, truncate or rounded. Ovary 5–6 mm in diam.; ovules 4–7; style 2–3 mm. Berry deep purple,

pruinose, globose to subglobose, 5–8 mm in diam.; style persistent, 2–3 mm. Fl. Nov–Apr, fr. Mar–Jun.

Forests, thickets, roadsides, in light shade, dry slopes; 1800–2700 m. Guangxi, Sichuan, Yunnan [India, Myanmar, Thailand].

7. *Mahonia taronensis* Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 60: 181. 1923.

独龙十大功劳 du long shi da gong lao

Berberis tibetensis Laferrière.

Shrubs, 1–1.5 m tall. Leaves abaxially yellowish green, adaxially dull olivaceous-green, narrowly obovate to oblanceolate, 18–40(–65) × 7–17(–30) cm; leaflets 5–10 pairs, lowest pair smaller, ca. 1 cm above base of petiole, abaxially midvein and lateral veins conspicuously raised, adaxially midvein obviously impressed, lateral veins inconspicuous; leaflets lanceolate to ovate-lanceolate, 4–13(–20) × 1.5–3(–6) cm, thin, base broadly cuneate or subrounded, margin with 9–23 teeth on each side, apex acuminate to caudate-acuminate. Inflorescence 3–5-fascicled racemes, 5–8 cm; bracts of inflorescence ovate to ovate-oblong, 1–2 cm × ca. 7 mm. Pedicel 2–2.5 mm; floral bracts lanceolate, 4–5 × 0.7–1 mm. Flowers pale greenish yellow. Outer sepals ovate, ca. 1.9 × 1 mm; median sepals oblong-elliptic, ca. 2.3 × 1.5 mm; inner sepals oblong, ca. 3.5 × 2 mm. Petals oblong-obovate, ca. 3 × 1.5 mm, base with distinct glands, apex entire. Stamens ca. 2 mm; anther connective not prolonged, truncate. Ovary ca. 2.5 mm; ovules 2–4. Berry blue, pruinose, globose, ca. 6 mm in diam.; style persistent, short. Fl. Oct–Jan, fr. Feb–Jul.

• Forests; 1500–2900 m. SE Xizang, Yunnan.

8. *Mahonia subimbricata* Chun & F. Chun, J. Arnold Arbor. 29: 420. 1948.

靖西十大功劳 jing xi shi da gong lao

Berberis subimbricata (Chun & F. Chun) Laferrière.

Shrubs, ca. 1.5 m tall. Leaves abaxially ± shiny, yellowish green, adaxially dull, elliptic to oblanceolate, 12–22 × 3–5 cm; leaflets 8–13 pairs, close or overlapping, lowest pair 5–10 mm above base of petiole, abaxially initially slightly grayish pruinose, adaxial primary veins 3, slightly impressed, veinlets obscure; rachis 2–3 mm in diam.; internodes 1–2 cm, slightly decreasing in length apically; leaflets ovate to narrowly ovate, lowermost much smaller than others and with only 1 or 2 teeth on each side, gradually larger apically, 1.5–3.5 × 1–1.5 cm, base rounded or subcordate, margin with 2–7 teeth on each side, apex acute, sharply cuspidate; terminal leaflet oblong-ovate, 3–5 cm, base rounded or subcordate, apex acuminate, petiolule ca. 0.5 cm. Inflorescence 9–13-fascicled racemes, 5–9 cm; bracts of inflorescence ovate, 1.2–1.5 cm × 5–8 mm. Pedicel 2.2–3 mm; floral bracts ovate-oblong, 2–3 × 1.2–1.5 mm. Sepals yellow; outer sepals broadly ovate, ca. 2 × 1.5 mm; median sepals oblong-ovate, ca. 3 × 2 mm; inner sepals oblong-obovate, ca. 3 × 2 mm. Petals yellow, narrowly elliptic, ca. as long as inner sepals or slightly shorter, base with distinct glands, apex entire, obtuse. Stamens ca. 2.5 mm; anther connective prolonged, obtuse. Ovary ca. 2 mm; ovules 1 or 2. Berry black, pruinose, obovoid, ca. 8 × 5 mm. Fl. Sep–Nov, fr. Nov–May.

- Thickets, woodlands; ca. 1900 m. Guangxi, Yunnan.

9. Mahonia shenii Chun, J. Arnold Arbor. 9: 127. 1928.

沈氏十大功劳 shen shi shi da gong lao

Berberis shenii (Chun) Laferrière.

Shrubs, 0.6–2 m tall. Leaves abaxially pale to yellowish green, shiny, ovate-elliptic, 23–40 × 13–22 cm; leaflets 1–6 pairs, lowest pair 3.5–14 cm above base of petiole, abaxial veins 3–5, reticulate venation indistinct, adaxial main veins 3, faint to prominent, impressed or slightly raised; rachis 1.5–2.5 mm in diam.; internodes 2.5–8 cm, decreasing in length apically; leaflets sessile, basal pair scarcely smaller than others; lateral leaflets narrowly to broadly elliptic or obovate, 6–13 × 1–5 cm, base cuneate to broadly so, margin thickened, entire or with 1–3 inconspicuous teeth near apex, apex acute to acuminate; terminal leaflet oblong-elliptic to broadly obovate, 10–15 × 3–6 cm, margin entire or with 1 or 2 inconspicuous teeth near apex, petiolule 1.5–6.5 cm. Inflorescence 6–10-fascicled racemes, ca. 10 cm; bracts of inflorescence lanceolate, 1–2 cm × 3–5 mm. Pedicel 2–3 mm, slender; floral bracts ovate, ca. 1 × 0.8 mm. Sepals yellow; outer sepals ovate, ca. 2 × 1–1.6 mm; median sepals ovate-elliptic to elliptic, 4–4.1 × 2–3 mm; inner sepals obovate-elliptic, 4.5–4.6 × 2.2–3 mm. Petals yellow, obovate-oblong, ca. 3.6 × 1.6–2 mm, base with indistinct glands, apex entire, rounded. Stamens ca. 2.5 mm; anther connective not prolonged, truncate. Ovary 1.8–2 mm; ovules 2; stigma ca. 0.3 mm. Berry blue pruinose, globose to subglobose, 6–7 mm in diam.; style not persistent. Fl. Apr–Sep, fr. Oct–Dec.

- Mixed broad-leaved deciduous and evergreen forests, thickets, rocky slopes; 400–1500 m. Guangdong, NE Guangxi, SE Guizhou, S Hunan.

10. Mahonia breviracema Y. S. Wang & P. K. Hsiao, Acta Phytotax. Sin. 23: 309. 1985.

短序十大功劳 duan xu shi da gong lao

Berberis breviracema (Y. S. Wang & P. K. Hsiao) Laferrière; ?*Mahonia monodens* J. Y. Wu, H. N. Qin & S. Z. He.

Shrubs, ca. 1 m tall. Leaves abaxially pale green, adaxially green, ovate or ovate-elliptic, 14–16 × 6–8 cm; leaflets 3 or 4 pairs, lowest pair ca. 4 cm above base of petiole; rachis 1–2 mm in diam.; internodes 2.5–3 cm, ca. equidistant, abaxial veins raised, adaxial veins impressed; leaflets elliptic to subrhombic, 3–6.6 × 1.2–3 cm, slightly decreasing in size from base to apex, leathery, base cuneate, margin with 2–4 teeth on each side, apex acute to acuminate; terminal leaflet larger than others, 5.5–6.5 × 2.5–3 cm, sessile. Inflorescence 5–8-fascicled racemes, 3–8 cm; bracts of inflorescence lanceolate, 1–1.5 cm × 3–6 mm. Pedicel 2–2.5 mm; floral bracts ovate, 1–1.2 × 0.6–0.8 mm. Outer sepals ovate, 1.6–1.8 × 1–1.1 mm; median sepals obovate-oblong, 3.7–3.8 × 1.7–1.8 mm; inner sepals obovate, ca. 4 × 2.1 mm. Petals elliptic, 3.5–3.6 × 1.3–1.4 mm, base with distinct glands, apex emarginate. Stamens ca. 2.1 mm; anther connective prolonged, rounded. Ovary ca. 1.7 mm; ovules 2; style 0.3–0.5 mm. Berry unknown. Fl. Oct–Nov, fr. unknown.

- Open rocky slopes in thickets; ca. 600 m. Guangxi (Lingui, ?Tiandeng), ?Guizhou (Guiyang).

Mahonia breviracema is cultivated in Yan Shan Botanical Garden, Guangxi Institute of Botany, Guilin, from where the type specimen (S. K. Lee 200582, IBK) was collected. *Mahonia monodens*, described from Guangxi (Tiandeng) and Guizhou, is tentatively included in synonymy, but we have not been able to compare the limited number of specimens available to determine the appropriateness of this placement.

11. Mahonia setosa Gagnepain, Bull. Soc. Bot. France 55: 86. 1908.

刺齿十大功劳 ci chi shi da gong lao

Berberis setosa (Gagnepain) Laferrière.

Shrubs, ca. 1.5 m tall. Leaves abaxially pale yellowish green, becoming golden yellow when dry, adaxially dull, ca. 25 × 14 cm; leaflets 4–8 pairs, lowest pair 2.5–3.5 cm above base of petiole, abaxial veins 3, both surfaces with raised reticulate veins; rachis slender, 1–2 mm in diam.; internodes 1–2 cm; leaflets lanceolate to linear-lanceolate, 1.8–8 × 0.8–1.2 cm, thickly papery, base cuneate, margin 8–20-spinose-serrulate or setose-serrate, apex acuminate. Inflorescence 3–5-fascicled racemes, 3–5 cm; bracts of inflorescence narrowly triangular, apically acute. Pedicel slender; floral bracts lanceolate. Sepals yellow; outer sepals narrowly triangular, apex acute; median and inner sepals lanceolate, subequal. Petals yellow, scarcely shorter than inner sepals, base clawed, with distinct glands, apex slightly retuse. Stamens long; anther connective prolonged, subconical, obtuse. Ovary conical; ovules 2, stipitate. Berry unknown. Fl. Oct, fr. unknown.

- Sichuan, Yunnan.

The cuneate base and the spinose-serrulate or setose margins of the leaflets of *Mahonia setosa* are distinct in the genus.

12. Mahonia decipiens C. K. Schneider in Sargent, Pl. Wilson. 1: 379. 1913.

鄂西十大功劳 e xi shi da gong lao

Berberis decipiens (C. K. Schneider) Laferrière.

Shrubs, 1–2 m tall. Leaves abaxially pale, adaxially dull green, elliptic, 15–20 × 7–11 cm; leaflets 2–7 pairs, lowest pair 4–6 cm above base of petiole, abaxial veins slightly branched, veins slightly raised on both surfaces; rachis ca. 2 mm in diam.; internodes 2.5–3.5 cm; leaflets separate or sometimes contiguous, ovate to ovate-elliptic, lowest similar to others, ovate, 3–5.5 × 1.5–3 cm, those above ovate to ovate-elliptic, 4.5–7 × 2.5–3.5 cm, base subtruncate, margin with 3–6 teeth on each side, apex acute; terminal leaflet much larger, 7.5–9.5 × 3.5–5 cm, petiolule 1.5–2 cm. Inflorescence 1 or 2 racemes, 4–6 cm; bracts of inflorescence ovate to narrowly ovate, 1–1.5 cm × 4–7 mm. Pedicel 2.5–3 mm; floral bracts ovate, 2–2.5 × ca. 1.5 mm. Sepals yellow; outer sepals ovate, 2.3–2.5 × 1.5–2 mm; median sepals broadly ovate, 3–3.5 × 2–2.5 mm; inner sepals elliptic, 5–6 × 3–4 mm. Petals yellow, obovate, 5–5.5 × 3–3.2 mm, base with distinct glands, apex emarginate, acute. Stamens ca. 3 mm; anther connective not prolonged, truncate. Ovary ca. 2.5 mm; ovules 2; style ca. 0.3 mm. Berry unknown. Fl. Apr–Aug, fr. unknown.

- Forests, thickets; 800–1500 m. W Hubei.

13. Mahonia paucijuga C. Y. Wu ex S. Y. Bao, *Acta Phytotax. Sin.* 25: 151. 1987.

景东十大功劳 jing dong shi da gong lao

Berberis paucijuga (C. Y. Wu ex S. Y. Bao) Laferrière.

Shrubs, 1–3 m tall. Leaves adaxially deep green, ovate, 17–30 × 10–15 cm; leaflets 2 or 3 pairs, lowest pair 2–8 cm above base of rachis, adaxial veins obviously raised, reticulate; rachis 2–3 mm in diam.; internodes 2–3 cm; leaflets shortly petiolulate, oblong-ovate or elliptic, 6–12 × 2.5–5.5 cm, thickly leathery, base broadly cuneate, margin 6–16-spinose-serrate on each side, apex acuminate or mucronate; terminal leaflet elliptic, ca. 2 cm, petiolulate. Inflorescence 4–6-fascicled racemes; bracts of inflorescence ovate, ca. 10 × 6 mm. Pedicel 4–5 mm; floral bracts linear-lanceolate, 8–12 mm, apex long acuminate. Sepals yellow; outer sepals narrowly triangular, ca. 2.5 mm; median sepals elliptic, ca. 6 × 3 mm, 3-veined, apex rounded; inner sepals oblong, ca. 5 mm. Petals yellow, oblong, ca. 5 × 2.4 mm, base with distinct glands, apex deeply emarginate, lobes obtuse. Stamens ca. 3 mm; anther connective not prolonged, truncate. Ovary ca. 3 mm; ovules 2; style absent. Berry slightly pruinose, narrowly ellipsoid, ca. 4 mm; style not persistent. Fl. Apr–May, fr. May–Jul.

- Open forests, along trails; 2500–3000 m. Yunnan.

14. Mahonia fortunei (Lindley) Fedde, *Bot. Jahrb. Syst.* 31: 130. 1901.

十大功劳 shi da gong lao

Berberis fortunei Lindley, *J. Roy. Hort. Soc.* 1: 231. 1846; *B. fortunei* var. *szechuanica* (Ahrendt) Laferrière; *Mahonia fortunei* var. *szechuanica* Ahrendt.

Shrubs, 0.5–2(–4) m tall. Leaves abaxially pale yellowish green, occasionally slightly glaucous, adaxially dull to deep green, obovate to obovate-elliptic, 10–28 × 8–18 cm; leaflets 2–5 pairs, lowest pair similar to others, 2–9 cm above base of petiole, abaxial veins branched, raised, adaxial veins indistinct; rachis 1–2 mm in diam.; internodes 1.5–4 cm, slightly decreasing in length apically; leaflets sessile or subsessile, narrowly lanceolate to narrowly elliptic, 4.5–14 × 0.9–2.5 cm, base cuneate, margin with 5–10 spinose teeth on each side, apex acute. Inflorescence 4–10-fascicled racemes, 3–7 cm; bracts of inflorescence lanceolate to triangular-ovate, 5–20 × 3–5 mm. Pedicel 2–2.5 mm; floral bracts ovate, 1.5–2.5 × 1–1.2 mm, apically acute. Sepals yellow; outer sepals ovate to triangular-ovate, 1.5–3 × ca. 1.5 mm; median sepals oblong-elliptic, 3.8–5 × 2–3 mm; inner sepals oblong-elliptic, 4–5.5 × 2.1–2.5 mm. Petals yellow, oblong, 3.5–4 × 1.5–2 mm, base with distinct glands, apex emarginate, lobes acute. Stamens 2–2.5 mm; anther connective not prolonged, truncate. Ovary 1.1–2 mm; ovules 2; style absent. Berry purplish blue, pruinose, globose, 4–6 mm in diam. Fl. Jun–Sep, fr. Sep–Nov. $2n = 28^*$.

- Forests, scrub thickets, roadsides, along streams, margins of cultivated fields; 300–2000 m. Chongqing, NE Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Zhejiang.

This species is widely cultivated in China and also cultivated in Indonesia, Japan, and the United States.

Dippel (*Handb. Laubholz.* 3: 109. 1893) included the name “*Mahonia fortunei* Hort.” in synonymy but within the treatment of this plant as *Berberis*, not *Mahonia*.

15. Mahonia eurybracteata Fedde, *Bot. Jahrb. Syst.* 31: 127. 1901.

宽苞十大功劳 kuan bao shi da gong lao

Shrubs, 0.5–2(–4) m tall. Leaves abaxially yellowish green, adaxially dark green, oblong-oblancheolate or oblong, 18–45 × 7–15 cm, with 5–9 pairs of obliquely ascending, mostly separate or sometimes contiguous leaflets; lowest pair of leaflets similar to and close to others, ca. 5 cm above base of petiole, abaxial venation open and raised, adaxial lateral veins inconspicuous; rachis 2–3 mm in diam.; internodes decreasing in length upward, 3–6 cm; leaflets linear or narrowly elliptic to elliptic-lanceolate or narrowly ovate, lowest 2.5–6 × 0.4–1.2 cm, those above increasing in length from base to apex, becoming 4–12.5 × 0.5–4 cm, base cuneate, margin 3–9-spinose-serrate, apex acuminate; terminal leaflet scarcely larger, 8–10 × 1.2–4 cm, sessile or petiolule to ca. 3 cm. Inflorescence 4–10-fascicled racemes, 5–10 cm; bracts of inflorescence ovate to ovate-oblong, 1–1.5 cm × 6–10 mm. Pedicel 1.5–5 mm, slender; floral bracts ovate, 1.2–3 × 0.8–2 mm. Sepals yellow; outer sepals ovate to ovate-oblong, 2–4.5 × 1–2 mm; median sepals elliptic, 3–4.5 × 1.6–2.8 mm; inner sepals elliptic, 3–5 × 1.8–3 mm. Petals elliptic or oblong, 3–4.3 × 1–2 mm, glands at base distinct or sometimes indistinct, apex slightly emarginate, lobes obtuse or rounded. Stamens 2–2.6 mm; anther connective not prolonged, truncate. Ovary 2–2.5 mm; ovules 2; stigma ca. 0.5 mm. Berry blue or reddish purple, pruinose, obovoid or oblong, 4–5 × 2–4 mm; style persistent. Fl. Jul–Nov, fr. Nov–May of following year.

- Forests, forest margins, streamsides, thickets, weedy slopes, open rocky ground; 200–2000 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan.

- 1a. Leaflets ca. 2 cm or more wide; pedicels 3–5 mm 15a. subsp. *eurybracteata*
- 1b. Leaflets ca. 1.5 cm or less wide; pedicels 1.5–2 mm 15b. subsp. *ganpinensis*

15a. Mahonia eurybracteata subsp. *eurybracteata*

宽苞十大功劳(原亚种) kuan bao shi da gong lao (yuan ya zhong)

Berberis berberidifolia (P. K. Hsiao & Y. S. Wang) Laferrière; *B. confusa* (Sprague) Laferrière; *B. eurybracteata* (Fedde) Laferrière; *Mahonia berberidifolia* P. K. Hsiao & Y. S. Wang; *M. confusa* Sprague; *M. ganpinensis* (H. Léveillé) Fedde var. *confusa* (Sprague) C. K. Schneider; *M. zemanii* C. K. Schneider.

Shrubs, 0.5–2(–4) m tall. Leaves oblong-oblancheolate, 25–45 × 8–15 cm, with 6–9 pairs of leaflets; leaflets ca. 2 cm or more wide. Pedicel 3–5 mm.

- Broad-leaved evergreen and bamboo forests, forest margins,

thickets, weedy slopes, open rocky ground; 300–2000 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan.

15b. *Mahonia eurybracteata* subsp. *ganpinensis* (H. Léveillé) T. S. Ying & Boufford in T. S. Ying, Fl. Reipubl. Popularis Sin. 29: 232. 2001.

安坪十大功劳 an ping shi da gong lao

Berberis ganpinensis H. Léveillé, Bull. Soc. Agric. Sarthe 59: 317. 1904; *B. confusa* var. *bournei* (Ahrendt) Laferrière; *Mahonia confusa* var. *bournei* Ahrendt; *M. ganpinensis* (H. Léveillé) Fedde.

Shrubs, (0.4–)0.5(–2) m tall. Leaves oblong, 18–35 × 7–14 cm, with 5–7 pairs of leaflets; leaflets ca. 1.5 cm or less wide. Pedicel 1.5–2 mm.

• Forests, forest margins, streamsides; 200–1200 m. Guizhou, Hubei, Sichuan.

16. *Mahonia microphylla* T. S. Ying & G. R. Long, Acta Phytotax. Sin. 37: 282. 1999.

小叶十大功劳 xiao ye shi da gong lao

Shrubs, ca. 1 m tall. Leaves abaxially pale yellowish green, adaxially green, narrowly elliptic, 17–20 × 3.5–4.5 cm, with 10–14 pairs of leaflets, lowest pair similar to others, close to 5–10 mm above base of petiole, abaxially venation inconspicuous, adaxially midvein slightly impressed, lateral veins slightly conspicuous; rachis 2–3 mm in diam.; internodes 1–2 cm; lowest pair of leaflets ovate or narrowly ovate, 1–1.5 cm × 5–9 mm, those above increasing in length from base to apex, becoming 1.5–2.5 × 0.8–1.2 cm, ovate to ovate-elliptic, base slightly oblique, rounded, or slightly cordate, apex acuminate; terminal leaflet larger than others, ovate-elliptic, 3–4.5 × 1–1.5 cm, sessile or petiolule 6–10 mm. Inflorescence 3–12-fascicled racemes, 4–13 cm; bracts of inflorescence ovate-lanceolate, 1–1.5 cm × ca. 5 mm. Pedicel 3–4 mm; floral bracts ovate, 2–2.2 × ca. 1 mm, apex acuminate. Flowers golden yellow, with sweet fragrance. Outer sepals ovate, ca. 2 × 1–1.1 mm; median sepals obovate-oblong, 3.4–3.8 × 2.1–2.2 mm, apex obtuse, rounded; inner sepals elliptic, 4.8–5 × 2.5–3 mm, apically obtuse. Petals narrowly elliptic, 4–4.1 × 1.8–2 mm, base with distinct glands, apex emarginate. Stamens ca. 2.5 mm; anther connective not prolonged, rounded. Ovary ovoid, ca. 2 mm; ovules 2 or 3; style absent. Berry bluish black, slightly pruinose, subglobose, 7–9 × 6–8 mm; style not persistent. Seeds usually 2. Fl. Oct–Nov, fr. Dec–Jan of following year.

• Forests and thickets on mountain ridges, summits of limestone mountains; 600–700 m. Guangxi (Rong'an).

17. *Mahonia leptodonta* Gagnepain, Bull. Soc. Bot. France 85: 166. 1938.

细齿十大功劳 xi chi shi da gong lao

Berberis leptodonta (Gagnepain) Laferrière.

Shrubs, (0.6–)1–2(–3) m tall. Leaves abaxially yellowish green, adaxially dull green, oblong, 15–18 × 10–14 cm, with 8–12 pairs of contiguous or slightly overlapping leaflets, lowest pair 0.5–1.5 cm above base of petiole, abaxially with raised

veins, adaxially with slightly impressed midvein, lateral veins indistinct; rachis 1–2.5 mm in diam.; internodes 1–3(–7) cm, decreasing in length upward; lowest leaflets suborbicular to ovate, 0.7–4 × 0.8–1.5 cm, those above lanceolate to narrowly ovate-oblong, (4.5–)7–10(–14) × 1.5–3 cm, base rounded to subcordate, margin finely 35–65(–130)-spinulose-serrulate on each side, apex caudate-acuminate. Inflorescence 5- or 6-fascicled racemes, 6–7 cm; bracts of inflorescence not seen. Pedicel 5–8 mm; floral bracts oblong, ca. 2 mm. Sepals yellow; outer sepals ovate, ca. 2 mm, apically acute; median sepals oblong, ca. 5 mm; inner sepals oblong, ca. 5 mm. Petals oblong, ca. 3 mm, base without glands, apex rounded, entire. Stamens ca. 2 mm, dilated below anthers; anther connective not prolonged, shortly mucronate. Ovary ca. 1.8 mm; ovules unknown; style absent. Berry unknown. Fl. Aug–Sep, fr. unknown.

• Forests, bamboo thickets, weedy slopes; 200–1500 m. Sichuan, Yunnan.

The combination of very thin leaflets with up to 130 spinulose serrulations on the margins and petals without glands is unique in *Mahonia* and instantly identifies *M. leptodonta*.

18. *Mahonia retinervis* P. K. Hsiao & Y. S. Wang, Acta Phytotax. Sin. 23: 310. 1985.

网脉十大功劳 wang mai shi da gong lao

Berberis reticulineria (C. Y. Wu ex S. Y. Bao) Laferrière (1997), not *B. reticulineria* T. S. Ying (1999); *B. retinervis* (P. K. Hsiao & Y. S. Wang) Laferrière (1997), not *B. retinervis* Triana & Planchon ex Weddell (1861); *Mahonia reticulineria* C. Y. Wu ex S. Y. Bao.

Shrubs, ca. 1 m tall. Leaves abaxially pale yellowish green, adaxially dull to slightly shiny green, elliptic, 15–23 × 9–12 cm, with 3–9 pairs of leaflets, lowest pair 0.5–1.2 cm above base of petiole, abaxially with 5–7 basal veins distinctly raised, reticulate veins indistinct, adaxially with distinctly raised reticulation; rachis 1.5–2.2 mm in diam.; internodes 2–5 cm; leaflets sessile, increasing in length and width from base to apex, thickly leathery, lowest pair of leaflets ovate, 1.5–3 × 1.2–2 cm, margin 2–11-spinose-serrate on each side, those above oblong-ovate or ovate-orbicular, 6–8 × 2.8–3.7 cm, base subrounded, oblique, margin indistinctly 3–11-spinose-serrate on each side, apex acuminate; terminal leaflet broadly ovate-orbicular, larger, 7–8 × ca. 5 cm, petiolule 2.5–3.2 cm. Inflorescence 5–10-fascicled racemes, 4–8 cm; bracts of inflorescence ovate-lanceolate, 1.5–2 cm × 7–9 mm. Pedicel 3–4.5 mm; floral bracts ovate to oblong, 2–3 × ca. 1 mm, apex acuminate or obtuse. Flowers pale yellow, ca. 3 mm in diam. Berry bluish black, slightly pruinose, oblong, ca. 7 × 4 mm; style persistent. Seeds 1. Fl. Aug–Sep, fr. Oct–Dec.

• Thickets on rocky slopes, open slopes; 1000–1500 m. Guangxi, Yunnan.

19. *Mahonia bealei* (Fortune) Carrière, Fl. Serres 10: 166. 1854.

阔叶十大功劳 kuo ye shi da gong lao

Berberis bealei Fortune, Gard. Chron. 1850: 212. 1850; *B. bealei* var. *planifolia* J. D. Hooker; *Mahonia bealei* var. *plani-*

folia (J. D. Hooker) Ahrendt; *M. japonica* Thunberg var. *bealei* (Fortune) Fedde; *M. japonica* var. *planifolia* (J. D. Hooker) H. Léveillé.

Shrubs or small trees, 0.5–4(–8) m tall. Leaves abaxially sometimes yellowish green, adaxially dull grayish green, narrowly obovate to oblong, 27–51 × 10–20 cm, with 4–10 pairs of leaflets, lowest pair 0.5–2.5 cm above base of petiole, abaxially very or slightly glaucous, venation indistinct on both surfaces; rachis 2–4 mm in diam.; internodes 3–10 cm, decreasing in length apically; leaflets increasing in length but decreasing in width from base to apex, thick, rigid, lowest pair ovate, 1.2–3.5 × 1–2 cm, with 1 or 2 teeth, those above suborbicular to ovate or oblong, 2–10.5 × 2–6 cm, base rounded, oblique, sometimes cordate, margin with 2–6 teeth on each side, apex cuspidate; terminal leaflet much larger, 7–13 × 3.5–10 cm, petiolule 1–6 cm or leaflets appearing sessile because of a basal lobe. Inflorescence erect, 3–9-fascicled racemes, 7–26 cm; bracts at base of inflorescence ovate to ovate-lanceolate, 1.5–4 × 0.7–1.2 cm. Pedicel 4–6 mm; floral bracts broadly ovate or ovate-lanceolate, 3–5 × 2–3 mm, apically obtuse. Sepals yellow; outer sepals ovate, 2.3–2.5 × 1.5–2.5 mm; median sepals elliptic, 5–6 × 3.5–4 mm; inner sepals oblong-elliptic, 6.5–7 × 4–4.5 mm. Petals obovate-elliptic, 6–7 × 3–4 mm, base with distinct glands, apex slightly emarginate, with rounded lobes. Stamens 3.2–4.5 mm; anther connective 1.1–1.3 mm, rounded to truncate. Ovary oblong-ovoid, ca. 3.2 mm; ovules 3 or 4; style short. Berry dark purple, pruinose, ovoid, ca. 1.5 × 1–1.2 cm; persistent style nearly absent. Fl. Sep–Jun of following year, fr. Mar–May. $2n = 28^*$.

• Forests, forest margins, weedy slopes, streamsides, roadsides, thickets; 500–2000 m. Anhui, Fujian, Guangdong, Guangxi, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Zhejiang.

This species is cultivated in Japan, Mexico, the warmer parts of Europe and the United States, and is naturalized in the SE United States.

20. *Mahonia longibracteata* Takeda, Notes Roy. Bot. Gard. Edinburgh 6: 236. 1917.

长苞十大功劳 chang bao shi da gong lao

Berberis longibracteata (Takeda) Laferrière.

Shrubs, 0.5–3 m tall. Leaves abaxially pale yellowish green, adaxially shiny, oblong, 14–23 × 6–11 cm, with 4 or 5 pairs of leaflets, lowest pair ca. 1 cm above base of petiole, abaxially with inconspicuously raised venation, adaxially with fairly close finely impressed reticulation; rachis 2–3 mm in diam.; internodes 2.5–4 cm, decreasing in length upward; lowest leaflets ovate, 1.5–2 × 1.2–2.2 mm, with 2 or 3 teeth on each side, those above oblong to ovate-lanceolate, 3–8 × 2–3.5 cm, base suboblique, cuneate-rounded, margin with (3 or) 4–7(–11) teeth on each side, apex mucronate or acuminate; terminal leaflet largest, petiolule 0.4–1.5 cm. Inflorescence 5–9-fascicled racemes, 6–9 cm; bracts of inflorescence narrowly ovate, 1.5–2 cm × 6–7 mm. Pedicel ca. 5 mm; floral bracts lanceolate, 7–9 × ca. 2.5 mm. Sepals yellow; outer sepals broadly lanceolate, 3–6 × 1–2.5 mm; median sepals oblong, 4–6 × 2–3 mm; inner sepals oblong-obovate, 5–6 × 2.5–3 mm. Petals oblong-elliptic, 4.1–4.5 × 2–3 mm, base with indistinct glands, apex entire. Stamens ca. 3 mm; anther connective narrow, not prolonged,

truncate. Ovary ca. 2.2 mm; ovules 2. Berry bright red, not pruinose, oblong, ca. 10 × 6 mm. Fl. Mar–May, fr. May–Oct.

• Forests, thickets, shaded slopes, sometimes in *Tsuga* forests; 1900–3300 m. SE Sichuan, Yunnan.

21. *Mahonia polyodonta* Fedde, Bot. Jahrb. Syst. 31: 126. 1901.

峨眉十大功劳 e mei shi da gong lao

Berberis pachakshirensis (Ahrendt) Laferrière; *B. polyodonta* (Fedde) Laferrière; *B. veitchiorum* Hemsley & E. H. Wilson; *Mahonia pachakshirensis* Ahrendt; *M. veitchiorum* (Hemsley & E. H. Wilson) C. K. Schneider.

Shrubs, 0.5–2 m tall. Leaves abaxially pale yellowish green, adaxially dull green, slightly shiny, oblong, 15–30 × 5–10 cm, with 4–8 pairs of leaflets, lowest pair 0.5–2.5(–4) cm above base of petiole, abaxially venation reticulate and raised, adaxially venation distinct, veins and veinlets sometimes impressed; rachis 2–2.5 mm in diam.; internodes (1.5–)3–6 cm, decreasing (rarely increasing) in length upward; leaflets sessile, lowest pair obovate-oblong, 2.5–6 × 1.2–2.3 cm, those above elliptic to ovate-oblong, 4–9 × 2–3 cm, base broadly cuneate to rounded, oblique, margin with 10–16 spinose teeth on each side, apex acuminate; terminal leaflet 8–12 × 2.4–3.7 cm, petiolule ca. 2 cm. Inflorescence 3–5-fascicled racemes, 5–6 cm; bracts of inflorescence ovate-lanceolate, ca. 2 × 1 cm. Pedicel 2–3(–6) mm; floral bracts broadly lanceolate, 6–11 × 3–5 mm. Flowers bright to sulfur-yellow. Outer sepals ovate, 3–4 × 2–2.5 mm; median sepals oblong-elliptic, 4–4.5 × 2–2.6 mm; inner sepals oblong, ca. 5 × 2.6–3 mm. Petals oblong, 3.5–4.2 × 2–2.1 mm, base with distinct glands, apex acutely emarginate, lobes rounded. Stamens ca. 3 mm; anther connective not prolonged, truncate. Ovary 2.7–3 mm; ovules 2. Berry bluish black, slightly pruinose, obovoid, 5–5.6 × 3–4 mm; style persistent, short, 0.5–1 mm. Fl. Mar–May, fr. May–Aug.

Forests, scrubby slopes, bamboo thickets, roadsides, rocky areas; (1300–)1800–3100 m. NE Guizhou, W Hubei, Sichuan, Xizang, Yunnan [India (Assam), Myanmar].

22. *Mahonia napaulensis* Candolle, Syst. Nat. 2: 21. 1821.

尼泊尔十大功劳 ni bo er shi da gong lao

Berberis acanthifolia (Wallich ex G. Don) Wallich ex Walpers; *B. gautamae* Laferrière; *B. griffithii* (Takeda) Laferrière; *B. leschenaultii* Wallich ex Wight & Arnott; *B. longlinensis* (Y. S. Wang & P. K. Hsiao) Laferrière; *B. manipurensis* (Takeda) Laferrière; *B. miccia* Walpers, nom. illeg. superfl.; *B. napaulensis* (Candolle) Laferrière; *B. napaulensis* var. *leschenaultii* (Wallich ex Wight & Arnott) J. D. Hooker & Thomson; *B. pomensis* (Ahrendt) Laferrière; *B. salweenensis* (Ahrendt) Laferrière; *Mahonia acanthifolia* Wallich ex G. Don; *M. griffithii* Takeda; *M. leschenaultii* (Wallich ex Wight & Arnott) Takeda; *M. longlinensis* Y. S. Wang & P. K. Hsiao; *M. manipurensis* Takeda; *M. miccia* Buchanan-Hamilton ex D. Don, nom. illeg. superfl.; *M. napaulensis* var. *leschenaultii* (Wallich ex Wight & Arnott) Fedde; *M. pomensis* Ahrendt; *M. salweenensis* Ahrendt; *M. sikkimensis* Takeda.

Shrubs or small trees, 1–7 m tall. Leaves abaxially yellowish green, ± shiny, adaxially dark green, ± shiny, elliptic to ovate, 17–61 × 7–19 cm, with 5–12 pairs of leaflets, lowest 0.5–2(–4) cm above base of petiole, abaxially venation reticulate, raised, adaxially main veins impressed, others impressed or slightly raised; rachis 2–4 mm in diam.; internodes (1–)2–5(–8.3) cm, decreasing in length upward; leaflets oblong, oblong-ovate, or ovate to ovate-lanceolate, lowest 1.3–3.7 × 1.2–2.4 cm, those above 2–9.5 × 1.5–5 cm, base broadly cuneate, rounded, or sometimes subcordate, oblique, margin with 3–10 teeth on each side, apex acute, acuminate, or cuspidate; terminal leaflet larger, 6–10 × 2–3 cm, sessile or petiolule to ca. 2.5 cm. Inflorescence 3–18-fascicled racemes, 7–23 cm; bracts of inflorescence oblong to ovate or ovate-lanceolate, 1–3.5 × 0.5–1.5 cm. Pedicel 3–9 mm; floral bracts lanceolate, ovate, or oblong, 2–6 × 1–3 mm. Flowers yellow to deep yellow, mildly fragrant. Outer sepals triangular-ovate or ovate to suborbicular, 2–3.2 × 1–2.4 mm; median sepals ovate to oblong, 3.5–5.2 × 2–3.3 mm; inner sepals elliptic to oblong-elliptic, 5–7 × 2.6–3.5 mm. Petals elliptic to oblong-elliptic, 3.6–7 × 1.6–3.2 mm, base with glands distinct or sometimes indistinct, apex emarginate to narrowly clawed. Stamens 3.5–7 mm; anther connective prolonged, apiculate to rounded. Ovary 3.2–4 mm; ovules 2–6; style 0.7–1.5 mm. Berry bluish black, pruinose, oblong, 5–7 mm in diam. Fl. Jun–Jan, fr. Jan–Jul. *2n* = 28.

Forests, forest margins, thickets; 1200–3000 m. S Sichuan, SE Xizang, Yunnan [Bhutan, India, Myanmar, Nepal; cultivated in Australia, S Europe, Indonesia, Sri Lanka, and other parts of the world].

23. *Mahonia cardiophylla* T. S. Ying & Boufford in T. S. Ying, Fl. Reipubl. Popularis Sin. 29: 308. 2001.

宜章十大功劳 *yi zhang shi da gong lao*

Shrubs, 1–2 m tall. Leaves abaxially yellowish green, adaxially dull, elliptic, 20–40 × 8–15 cm, with 8–10 pairs of leaflets, lowest pair 1–1.5 cm above base of petiole, abaxially with raised veins, adaxially with conspicuously impressed veins; rachis 2–3 mm in diam.; internodes 2–4.5(–7) cm, decreasing in length apically; leaflets thickly leathery, lowest pair ovate, 2–3 × 1–2 cm, with 2 or 3 teeth, those above ovate to ovate-elliptic, 3–9 × 2–4 cm, base cordate or sometimes rounded, margin sometimes with 3–8 teeth on each side, apex cuspidate; terminal leaflet 4–7 × 2.3–3.5 cm, petiolule 1–2 cm. Inflorescence 5–13-fascicled racemes, 10–17 cm; bracts of inflorescence ovate, 1–2 cm × 6–10 mm. Pedicel 2.5–3 mm; floral bracts ovate-lanceolate, 3–5 × 1.2–2 mm. Sepals yellow; outer sepals triangular-ovate, 2.7–2.8 × 1.5–1.6 mm; median sepals ovate, 4.5–4.7 × 2.1–2.2 mm; inner sepals elliptic, 5–5.1 × 2.4–2.5 mm. Petals obovate, 4.3–4.5 × 2–2.3 mm, base with distinct glands, apex incised. Stamens ca. 3.2 mm; anther connective not prolonged, truncate. Ovary ca. 2.5 mm; ovules 2; style ca. 0.5 mm. Berry bluish purple, pruinose, ovoid, 7–10 × 4–7 mm; style persistent. Fl. Feb–Apr, fr. May–Jun.

• Forests; 1500–1700 m. Guangxi, S Hunan, SE Sichuan, SE Yunnan.

24. *Mahonia nitens* C. K. Schneider in Sargent, Pl. Wilson. 1: 379. 1913.

亮叶十大功劳 *liang ye shi da gong lao*

Berberis nitens (C. K. Schneider) Laferrière (1997), not Schrader (1838); *B. schochii* (C. K. Schneider ex Handel-Mazzetti) Laferrière; *Mahonia schochii* C. K. Schneider ex Handel-Mazzetti.

Shrubs, 0.5–1.5 m tall. Leaves shiny, abaxially yellowish green, adaxially dull green, narrowly oblong to elliptic, 16–43 × 4.5–13 cm, with 5–8 pairs of leaflets, lowest pair 0.5–2 cm above base of petiole, both surfaces with slightly raised open reticulation; rachis 1.5–2.5 mm in diam.; internodes 2.5–7 cm, longest in middle and decreasing toward both ends or decreasing in length upward; leaflets sessile, basal pair smaller than others, oblong, 2–4 × 1–1.5 cm, with 1–3 teeth on each side, those above ovate to elliptic, 5–14 × 1.5–3.8 cm, base cuneate, with 1–6 coarse sinuate-spinose teeth on each side, apex caudate-acuminate to attenuate, cuspidate; terminal leaflet longer but sometimes narrower than lateral leaflets, petiolule 2–3 cm. Inflorescence 5–10-fascicled racemes, 9–15 cm; bracts of inflorescence lanceolate to ovate, 1–2.5 cm × 5–8 mm. Pedicel 1.5–3 mm; floral bracts ovate-lanceolate to ovate or oblong-ovate, 2–4 × 1.3–2 mm. Flowers yellow, sometimes pink. Outer sepals ovate to oblong-elliptic, 1.5–3.5 × 1–1.8 mm; median sepals narrowly ovate to oblong, 3.3–3.5 × 2–2.5 mm; inner sepals elliptic, 3.5–4.5 × 2–2.7 mm. Petals oblong to oblong-elliptic, 2.7–4 × 1.5–2 mm, base with distinct glands, apex emarginate. Stamens 1.8–3.1 mm; anther connective not or slightly prolonged, truncate or rounded. Ovary 1.3–2.5 mm; ovules 2(or 3). Berry bluish purple, pruinose, ovoid, 7–10 × 4–7 mm; style persistent, 1–2 mm. Fl. Jun–Oct, fr. Oct–Mar.

• Mixed forests, thickets, streamsides, slopes; 600–2000 m. Guizhou, Sichuan.

25. *Mahonia conferta* Takeda, Notes Roy. Bot. Gard. Edinburgh 6: 230. 1917.

密叶十大功劳 *mi ye shi da gong lao*

Berberis henryi Laferrière.

Shrubs or small trees, 1.5–5 m tall. Leaves abaxially ± shiny to dull pale green, adaxially shiny, elliptic to narrowly oblanceolate, 8–38 × 5–10 cm, thickly leathery, with 8–18 overlapping pairs of leaflets, lowest pair ca. 1 cm above base of petiole, abaxially loosely veined, adaxially veins indistinct; internodes decreasing in length upward, 1.7–3.5 cm; leaflets sessile, increasing in length upward, width decreasing slightly upward, so that leaflet shape changes from broadly ovate to narrowly ovate or oblong, 2.5–7 × 2–3 cm, thick, rigid, base truncate, oblique, proximal margin with 2 or 3 teeth, distal margin with 3–5 teeth, apex a bent cup, 1.5–2.3 cm × 5–8 mm; terminal leaflet ca. 7 × 3 cm, petiolule ca. 1.2 cm. Inflorescence 3–6-fascicled racemes, 11–18 cm; bracts of inflorescence ovate to ovate-lanceolate, 10–15 × 5–7 mm. Pedicel 5–5.5 mm; floral bracts broadly lanceolate, 4.5–5 × 1.6–2.3 mm. Sepals yellow; outer sepals oblong-ovate, 2.7–3 × 1.5–2.2 mm; median sepals broadly elliptic, 5–5.1 × ca. 3 mm; inner sepals oblong-ovate, 8–9 × 4–4.5 mm. Petals oblong-obovate, 7–8 × 3.5–4.2 mm, base with distinct glands, apex emarginate. Stamens ca. 5 mm; anther connective prolonged, shortly apiculate. Ovary ellipsoid, ca. 5.5 mm; ovules 3; style ca. 1.5 mm. Berry ellipsoid, slightly pruinose, ca. 10 × 5–6 mm; style persistent. Fl. Jun–Oct, fr. Oct–Dec.

- Forests, shaded places on slopes; 1500–2100 m. Yunnan.

Mahonia conferta is probably not distinct from *M. napaulensis*, with which it should be combined.

26. *Mahonia imbricata* T. S. Ying & Boufford in T. S. Ying, Fl. Reipubl. Popularis Sin. 29: 309. 2001.

遵义十大功劳 zun yi shi da gong lao

Shrubs, 1.5–4 m tall. Leaves abaxially yellowish green, adaxially dull, narrowly obovate-elliptic to oblong, 15–20 × 7–10 cm, with 5–7 pairs of leaflets, lowest pair ca. 5 mm above base of petiole, abaxially with raised veins, adaxially with impressed veins; rachis 1.5–2 mm in diam.; internodes 1.5–2.5 cm, decreasing slightly in length apically; leaflets thick, lowest suborbicular, 1–3 × 1–1.5 cm, margin 2- or 3-spinose-serrate, those above narrowly ovate to ovate-elliptic, 3–6.5 × 1.3–2.5 cm, base rounded to slightly cordate, oblique, margin with 2–5 teeth on each side, apex cuspidate; terminal leaflet larger than others, ca. 7.5 × 3 cm, petiolule ca. 1.5 cm. Inflorescence 9- or 10-fascicled racemes, 8–13 cm; bracts of inflorescence ovate, 1.5–2 cm × 5–7 mm. Pedicel 3–4 mm; floral bracts ovate, 3.5–4 × 2–2.2 mm, apex obtuse. Sepals yellow; outer sepals ovate, 2.7–3 × 1.3–1.5 mm; median sepals elliptic, ca. 4.5 × 2.5–2.6 mm; inner sepals elliptic to oblong, 5–5.2 × ca. 3 mm. Petals elliptic, 4.5–5 × ca. 2 mm, base with distinct glands, apex incised. Stamens 2.5–2.8 mm; anther connective not prolonged, truncate. Ovary 2.5–3 mm; ovules 2. Immature berry pruinose. Fl. Mar–Apr, fr. Apr–Jul.

- Slopes in evergreen broad-leaved forests, thickets; 1200–2400 m. Guizhou, Yunnan.

27. *Mahonia bodinieri* Gagnepain, Bull. Soc. Bot. France 55: 85. 1908.

小果十大功劳 xiao guo shi da gong lao

Berberis bodinieri (Gagnepain) Laferrière (1997), not H. Léveillé (1911); *B. elegans* H. Léveillé (1904), not K. Koch (1869); *B. japonica* (Thunberg) R. Brown var. *trifurca* (Lindley & Paxton) Rehder; *B. leveilleana* (C. K. Schneider) Laferrière; *B. trifurca* Lindley & Paxton; *Mahonia elegans* Rehder; *M. japonica* (Thunberg) Candolle var. *trifurca* (Lindley & Paxton) Ahrendt; *M. leveilleana* C. K. Schneider.

Shrubs or small trees, 0.5–4 m tall. Leaves abaxially yellowish green, adaxially dark green, lucid, obovate-oblong, 20–50 × 10–25 cm, with 8–13 pairs of leaflets, lowest pair close to base of petiole, abaxially coarsely reticulate, with raised veins; rachis stout, 2–4 mm in diam.; internodes (2–)5–9 cm, decreasing in length upward; leaflets shortly petiolulate or sessile, lowest suborbicular, 2.5–3 × 1.5–2.5 cm, those above becoming oblong to broadly lanceolate, 5–16.5 × 2.5–5.5 cm, base oblique, truncate to cuneate, margins of lowest leaflets with 1–3 coarse teeth 5–15 mm, middle leaflets with 3–10 smaller teeth 3–10 mm, upper leaflets with few (sometimes 1 or 2) fine teeth 2–3 mm; terminal leaflet 5–15 × 1.5–5.5 cm, petiolule 1–2 cm. Inflorescence 5–11-fascicled racemes, 10–22(–25) cm; bracts of inflorescence lanceolate, 2–3 cm × 5–7 mm. Pedicel 1.5–5 mm; floral bracts narrowly ovate, 1.5–4 × 0.7–2.5 mm. Sepals yellow; outer sepals ovate, ca. 3 × 2 mm;

median sepals elliptic, 4.5–5 × ca. 2.5 mm; inner sepals narrowly elliptic, ca. 5.5 × 3 mm. Petals oblong, subequal to median sepals, 4.5–5 × 2–2.4 mm, base with indistinct glands, apex emarginate. Stamens 2.2–3 mm; anther truncate and 3-denticulate at apex; anther connective not prolonged. Ovary ca. 2 mm; ovules 2; style absent. Berry purplish black, pruinose, globose or sometimes pyriform, 4–6 mm in diam.; style not persistent. Fl. Jun–Sep, fr. Aug–Dec.

- Broad-leaved evergreen forests, mixed broad-leaved evergreen and deciduous forests, *Juniperus* forests, scrub thickets, forest margins, streamsides; 100–1800 m. Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Zhejiang.

28. *Mahonia sheridaniana* C. K. Schneider in Sargent, Pl. Wilson. 1: 384. 1913.

长阳十大功劳 chang yang shi da gong lao

Berberis fargesii (Takeda) Laferrière; *B. huiliensis* (Handel-Mazzetti) Laferrière; *B. sheridaniana* (C. K. Schneider) Laferrière; *Mahonia fargesii* Takeda; *M. huiliensis* Handel-Mazzetti.

Shrubs, 0.3–3 m tall. Leaves abaxially pale, adaxially dull to ± shiny, elliptic to oblong-oblong-lanceolate, 17–36 × 8–14 cm, with 4–9 pairs of leaflets, lowest pair 7–10 mm above base of petiole, abaxially with venation slightly branched and slightly raised, adaxially indistinctly veined; internodes 1.5–5 cm, decreasing in length upward; leaflets separate or sometimes contiguous, ovate to ovate-lanceolate, thick, rigid, lowest pair 1.2–3 × 0.8–1.5 cm, increasing in size upward and becoming 3–9.5 × 1.5–3.6 cm, base broadly rounded to subtruncate or subcordate, slightly oblique, margin with 2–5 teeth on each side, apex acute, cuspidate; terminal leaflet equal to or much larger than others, 6.5–11 × 2.5–4 cm, petiolule 0.8–2.5 cm. Inflorescence 4–10-fascicled racemes, 5–18 cm; bracts of inflorescence broadly lanceolate to ovate, 1–2 × 0.5–1.2 cm. Pedicel 3–5 mm; floral bracts ovate, 2–3.5 × 1–1.7 mm. Sepals yellow; outer sepals narrowly ovate or ovate to ovate-lanceolate, 2.5–4.5 × 1.5–1.6 mm; median sepals ovate to ovate-lanceolate, 4.5–6 × 2–3 mm; inner sepals elliptic, 5.5–8.2 × 3–3.8 mm. Petals obovate or elliptic to oblong, 5–6.5 × 2–2.8 mm, base with distinct glands, apex emarginate. Stamens 3–4 mm; anther connective not prolonged, truncate. Ovary 2–3 mm; ovules 2 or 3; style ca. 0.3 mm. Berry bluish black or dark purple, pruinose, ovoid to ellipsoid, 8–10 × 4–7 mm; style persistent, short. Fl. Mar–Apr, fr. Apr–Jun.

- Evergreen broad-leaved forests, bamboo forests, thickets, trailsides, slopes; 1200–2600 m. SC Hubei, Sichuan.

29. *Mahonia japonica* (Thunberg) Candolle, Syst. Nat. 2: 22. 1821.

台湾十大功劳 tai wan shi da gong lao

Ilex japonica Thunberg in Murray, Syst. Veg., ed. 14, 168. 1784; *Berberis japonica* (Thunberg) R. Brown; *B. japonica* var. *gracillima* (Fedde) Rehder; *B. tikushiensis* (Hayata) Laferrière; *Mahonia japonica* var. *gracillima* Fedde; *M. tikushiensis* Hayata.

Shrubs, ca. 1 m tall. Leaves abaxially pale green, adaxially deep green, oblong, 15–27 × 5–10 cm, with 4–6 pairs of sessile

leaflets, lowest pair ca. 0.5 cm above base of petiole, abaxially not pruinose, with branched raised venation; rachis 2–3 mm in diam.; internodes 2–4 cm, decreasing in length upward; leaflets ovate, lowest 1.8–2.7 × 1.2–2 cm, becoming larger upward, 3.5–7 × 2–4 cm, base oblique and ± cordate, margin with 2–4 teeth on proximal side, 3–7 teeth on distal margin, apex acute; terminal leaflet larger, ± cordate at base, petiolule 1–2 cm. Inflorescence 5–10-fascicled drooping racemes, 5–10 cm; bracts of inflorescence ovate to ovate-lanceolate, 0.8–1.5 cm × 4–7 mm, apically acuminate. Pedicel 6–7 mm; floral bracts ovate, 3.5–4 × 2–2.5 mm, apex obtuse. Sepals yellow; outer sepals ovate, 2.5–2.7 × 2.2–2.3 mm, apically obtuse; median sepals broadly obovate, 3.3–3.5 × 2.8–2.9 mm; inner sepals obovate-oblong, 6–6.4 × 3.4–3.5 mm. Petals elliptic, 5.5–6 × 2.5–2.6 mm, base with distinct glands, apex emarginate. Stamens ca. 3.3 mm; anther connective slightly prolonged, rounded. Ovary ca. 3.4 mm; ovules 4–7. Berry dark purple, ± pruinose, ovoid, ca. 8 × 4 mm; style persistent and short, or not persistent. Fl. Dec–Apr, fr. Apr–Aug. $2n = 28^*$.

- Forests, thickets; 800–3400 m. Taiwan.

This species is cultivated extensively in Japan and sporadically in the warmer parts of Europe and the United States.

30. Mahonia fordii C. K. Schneider in Sargent, Pl. Wilson. 1: 383. 1913.

北江十大功劳 bei jiang shi da gong lao

Berberis fordii (C. K. Schneider) Laferrière.

Shrubs, 0.8–1.5 m tall. Leaves abaxially pale, adaxially dull, oblong to narrowly oblong, 20–35 × 7–11 cm, with 5–9 pairs of remote leaflets, lowest pair 1–1.5 cm above base of petiole, abaxially not veined, adaxially slightly veined; rachis 1.5–2.5 mm in diam.; internodes decreasing in length apically, 2–7 cm; lowest pair of leaflets narrowly ovate, 3.5–4.5 × 1.5–2.4 cm, those above narrowly ovate to elliptic-ovate, equal in size, 5–8 × 1.8–2.7 cm, base broadly rounded to cuneate, margin 2–9-spinose-serrate, apex acuminate; terminal leaflet similar to others but slightly larger, petiolule 1.5–2 cm. Inflorescence 5–7-fascicled racemes, 6–15 cm; bracts of inflorescence

ovate to ovate-lanceolate, 1–1.5 cm × 6–8 mm. Pedicel 2.5–4 mm; floral bracts broadly ovate, 1.5–2 × 0.6–1 mm. Sepals yellow; outer sepals ovate, ca. 2 × 1.6 mm; median sepals elliptic, 3.5–4 × 2.5–3 mm, apically obtuse; inner sepals obovate-elliptic, 4–4.5 × ca. 3 mm. Petals elliptic, ca. 4 × 2.3 mm, base with distinct glands, apex emarginate. Stamens ca. 2.6 mm; anther connective not prolonged, truncate. Ovary ca. 2.3 mm; ovules 2. Berry (immature only) obovoid, ca. 7 × 5 mm; style persistent, short. Fl. Jul–Sep, fr. Oct–Dec.

- Forests, thickets; 800–900 m. Chongqing, Guangdong.

31. Mahonia hancockiana Takeda, Notes Roy. Bot. Gard. Edinburgh 6: 231. 1917.

滇南十大功劳 dian nan shi da gong lao

Berberis hancockiana (Takeda) Laferrière.

Shrubs, ca. 1.5 m tall. Leaves abaxially pale, adaxially dull grayish green, oblong-obovate, 19–32 × 10–15 cm, with 4–9 pairs of sessile leaflets, lowest pair 0.5–2 cm above base of petiole, abaxially with branched veins and primary veins ± raised, adaxially ± not veined; rachis ca. 2 mm in diam.; internodes decreasing upward, 2–6 cm; lowest leaflets narrowly ovate, 1.5–4 × 1–2 cm, middle leaflets elliptic, 3–11 × 1.8–2.8 cm, base broadly cuneate or rounded, margin with apiculate to shallowly serrate teeth, apex cuspidate-acuminate; terminal leaflet similar to middle leaflets, petiolule 1–2 cm. Inflorescence 4–15-fascicled racemes, 12–19 cm; bracts of inflorescence lanceolate, ca. 2.5 × 0.5 cm. Pedicel 2–3 mm; floral bracts ovate, 3–3.5 × 1.5–1.8 mm. Flowers deep yellow (?or violet). Outer sepals ovate, 2–3 × 1.5–2 mm, apically obtuse; median sepals ovate-elliptic, 4.5–5 × 2.4–3 mm; inner sepals obovate-elliptic, 4.6–6 × 2.6–3.2 mm. Petals elliptic, 4–4.4 × 1.8–2 mm, base with distinct glands, apex emarginate with rounded lobes. Stamens ca. 3.2 mm; anther connective prolonged, rounded. Ovary ca. 3.5 mm; ovules 4 or 5; style ca. 1 mm. Berry unknown. Fl. Feb, fr. unknown.

- Mixed forests, rocky hills; 1000–3200 m. SE Yunnan.

Insufficiently known species

Mahonia annamica Gagnepain, Bull. Soc. Bot. France 55: 84. 1908.

Berberis annamica (Gagnepain) Laferrière.

This species was described from Vietnam and reported for Guangxi. We have not seen specimens from Guangxi and are unsure of its placement.

Mahonia bijuga Handel-Mazzetti, Symb. Sin. 7: 331. 1931.

This species was described from Sichuan (“Lose-schan s von S of Ningyüen,” 3300 m), based on *H. v. Handel-Mazzetti 1430* (?W), but we have not seen the type.

Mahonia dulongensis H. Li, Ann. Bot. Fenn. 46: 469. 2009.

This species was recently described from Yunnan (Gongshan, Dulong Jiang, 1620 m, 5 Nov 2005), based on *Gaoligongshan Biodiversity Survey 21834* (holotype, KUN; isotypes, CAS, E).

Mahonia hypoleuca Takeda, Notes Roy. Bot. Gard. Edinburgh

6: 238. 1917.

Berberis nivea (C. K. Schneider) Laferrière; *Mahonia nivea* C. K. Schneider.

Both *Mahonia hypoleuca* and *M. nivea* are based on *A. Henry 9863*, from Mengtze, Yunnan, which is without flowers and fruit and the only collection known.

Mahonia jingxiensis J. Y. Wu, M. Ogisu, H. N. Qin & S. N. Lu, Bot. Stud. (Taipei) 50: 487. 2009.

This species was recently described from Guangxi (Jingxi Xian, Sanhe Xiang, Niansi Tun, ca. 500 m, 23 Oct 2007), based on *J. Y. Wu & M. Ogisu 1023* (holotype, PE; isotype, IBK).

Mahonia lushuiensis T. S. Ying & H. Li, Ann. Bot. Fenn. 46: 472. 2009.

This species was recently described from Yunnan (Lushui County, Luzhang Township, 325 m, 19 May 2005), based on *Gaoligongshan*

Fl. China 19: 772–782. 2011.

Biodiversity Survey 24522 (holotype, KUN; isotypes, CAS, E).

