

2. WIKSTROEMIA Endlicher, Prodr. Fl. Norfolk. 47. 1833 [*Wickstroemia*], nom. cons., not Schrader (1821), nor Sprengel (1821).

堯花屬 rao hua shu

Wang Yinzheng (王印政); Michael G. Gilbert

Capura Linnaeus; *Diplomorpha* Meisner.

Shrubs or subshrubs, occasionally small trees or rarely a herbaceous perennial (*W. linoides*), evergreen or deciduous. Leaves opposite or alternate. Inflorescence usually terminal and subterminal, rarely axillary, fascicled or solitary, spicate, racemose, umbelliform or capitate, sometimes in compound terminal panicles, often without involucre; peduncle long or short. Flowers bisexual or unisexual (Hawaii), 4- or 5-merous, subsessile or distinctly pedicellate; pedicel articulate. Calyx tube yellow or green, less often purplish, red or white, cylindrical or tubular, sometimes slightly funnel-shaped, often caducous after anthesis, sometimes persistent; lobes 4 or 5, spreading. Petaloid appendages absent. Stamens twice as many as calyx lobes, in two series; filaments very short; anthers oblong, upper sometimes slightly exserted; connectives indistinct. Disk with 2 or 4, very rarely 1 or 5, scales, rarely joined at base by very narrow annulus, membranous. Ovary sessile, rarely shortly stipitate, usually ellipsoid, glabrous or hairy at apex, 1-loculed; style terminal, short, distinct or obscure; stigma large, capitate, globose, or discoid. Fruit a succulent berry or rather dry. Endosperm scanty or absent; cotyledons fleshy.

About 70 species: E Asia, Malaysia, Australia, and Pacific islands with a significant minor center of diversity in Hawaii where many species are dioecious; 49 species (43 endemic) in China.

The separation of *Wikstroemia* from the following genus, *Daphne*, is problematic. Features such as leaf arrangement, inflorescence type, and flower color are all clearly paralleled within the two genera and are of no diagnostic value, although they are mentioned in most keys to these genera. In most cases, the nature of the hypogynal disk is diagnostic, but even here there are species where the interpretation of the structure of the disk is difficult. For example, the distinction between the lateral \pm square disk seen in several species of *Daphne* and species of *Wikstroemia* with a single large disk scale, or species of *Wikstroemia* in which the disk scales are connected by a narrow annulus, or species of *Daphne* with very deeply divided disks makes the division seem rather arbitrary, such that there must be a good case for combining these two genera, as was done by Halda (Genus *Daphne*. 2001). A review of generic delimitations in the family based on molecular data would be very desirable.

Wikstroemia ganpi (Siebold & Zuccarini) Maximowicz was indicated by Halda (loc. cit.: 158, as *Daphne ganpi* (Siebold & Zuccarini) Halda) to occur in Taiwan, but this species has not been recorded by botanists from Taiwan, and the basis of the record was not indicated.

Wikstroemia bodinieri H. Léveillé is a synonym of *Alyxia schlechteri* H. Léveillé in the Apocynaceae (see Fl. China 16: 162. 1995). *Wikstroemia hemsleyana* H. Léveillé is a synonym of *Alstonia mairei* H. Léveillé also in the Apocynaceae (loc. cit.: 156).

1a. Calyx exterior glabrous (rarely with a few scattered hairs), often caducous after anthesis.

2a. Flowers 5-merous.

3a. Leaves always alternate, sometimes very close spaced and apparently whorled, blade 1–1.5 mm wide 43. *W. linearifolia*

3b. Leaves at least partly opposite, blade at least 3 mm wide.

4a. Inflorescences clustered into a head; lateral veins 3–7 per side of midrib.

5a. Older branches pale reddish or brownish gray; leaf blade with lateral veins 3 or 4 per side of midrib; disk apex entire or slightly retuse 41. *W. fargesii*

5b. Older branches dark purple-brown; leaf blade with lateral veins 5–7 per side of midrib; disk apex irregularly deeply or shallowly lobed 42. *W. fuminensis*

4b. Inflorescence a raceme or panicle, or spike; lateral veins 6–12 per side of midrib or obscure.

6a. Inflorescence a solitary raceme.

7a. Peduncle 2–4 cm; racemes terminal and axillary 44. *W. scytophylla*

7b. Peduncle 0.7–1.1 cm; racemes terminal, 3–7-flowered.

8a. Leaf blade 1–2 cm wide, leathery or thinly so; calyx yellow 45. *W. huidongensis*

8b. Leaf blade 0.3–0.8 cm wide, membranous; calyx white 46. *W. anhuiensis*

6b. Inflorescence a panicle, lax or dense.

9a. Panicle dense, spicate; leaves closely spaced, blade leathery, lateral veins white and prominent; calyx yellow 47. *W. lamatsoensis*

9b. Panicle lax; leaves not closely spaced; leaf blade papery, lateral veins not white and prominent; calyx white or yellowish green.

10a. Leaf blade 1–2.2(–3.5) cm wide; calyx tube 6–8 mm 48. *W. trichotoma*

10b. Leaf blade 0.3–0.6 cm wide; calyx tube 12–13 mm 49. *W. leptophylla*

2b. Flowers 4-merous.

11a. Leaves alternate, rarely subopposite.

- 12a. Inflorescence a much branched panicle 6. *W. longipaniculata*
 12b. Inflorescence a compact head or raceme.
 13a. Calyx white or pink to purplish red; inflorescence bracteate 10. *W. glabra*
 13b. Calyx yellow, yellow-green or green; inflorescence ebracteate.
 14a. Biennial or perennial herb or subshrub; leaf blade 1.2–2.5 × 0.3–0.8 cm 7. *W. linoides*
 14b. Shrub, sometimes dwarf; leaf blade 3–8 × 0.7–2.8(–4) cm 11. *W. nutans*
 11b. Leaves mostly truly opposite.
 15a. Young stems pubescent or puberulous.
 16a. Calyx tube 4–7 mm 3. *W. chui*
 16b. Calyx tube 12–15 mm.
 17a. Leaf blade elliptic, ovate, or ovate-lanceolate, 4–10 × 2–3.3 cm 4. *W. hainanensis*
 17b. Leaf blade oblong-obovate to lanceolate, 1.5–3 × 0.3–0.8 cm 12. *W. salicina*
 15b. Young stems glabrous.
 18a. Leaf blade 0.8–2.5 × 0.2–1.2 cm, ± leathery 8. *W. angustifolia*
 18b. Leaf blade 3–20 × 1.5–9 cm, membranous to papery.
 19a. Leaf blade 13–20 × 4.5–9 cm; peduncle 2–6 cm; calyx lobes 5–6 mm 2. *W. liangii*
 19b. Leaf blade 3–6(–8.5) × 1.5–2.5(–4) cm; peduncle 0.7–2 cm, slender, pendulous; calyx lobes
 ca. 3 mm 11. *W. nutans*
 1b. Calyx tube exterior hairy, often persistent and enclosing fruit.
 20a. Flowers 5-merous.
 21a. Inflorescences always axillary 38. *W. paxiana*
 21b. Inflorescences mostly terminal, often on lateral branches, sometimes also axillary.
 22a. Stems yellow, leaves sometimes opposite; flowers shortly pedicellate 40. *W. pilosa*
 22b. Stems purple-red; leaves always alternate; flowers sessile 39. *W. dolichantha*
 20b. Flowers 4-merous.
 23a. Flowers in terminal and short, subapical, lateral fascicles forming a leafy thyrse; hypogynal disk
 scale very broad, almost annular, deeply 7–10-lobed 37. *W. subcyclolepidota*
 23b. Flowers in terminal and subterminal spikes or racemes, sometimes grouped into panicles, or
 axillary; hypogynal disk annular or cupular or scales 1–4, linear or oblong, apically lobed or
 toothed.
 24a. Herbaceous perennial 7. *W. linoides*
 24b. Shrub, sometimes dwarf.
 25a. Leaves mostly alternate, rarely also subopposite, very rarely a few opposite.
 26a. Inflorescence a panicle of terminal and subterminal spikes or heads; lateral leaf veins often
 obscure.
 27a. Calyx 3.5–4 mm; leaf blade linear to narrowly oblong, 2–5 mm wide, adaxially glabrous 32. *W. cochlearifolia*
 27b. Calyx 8–9 mm; leaf blade elliptic or obovate-elliptic or narrowly elliptic, 3–8(–15) mm
 wide, adaxially hairy.
 28a. Leaf blade adaxially tomentose; ovary densely appressed hirsute; disk scales 2, unequal,
 apex 2- or 3-toothed 31. *W. pampaninii*
 28b. Leaf blade adaxially sericeous; ovary glabrous except for pilose apex; disk scale 1, apex
 obtuse to truncate, finely dentate or irregularly crenulate 20. *W. haoi*
 26b. Inflorescence a head elongating into a short raceme during anthesis, or a 1–4-flowered fascicle
 terminal on lateral branches; lateral leaf veins distinct.
 29a. Inflorescence a 1–4-flowered fascicle.
 30a. Both surfaces of leaf blade glabrous, membranous.
 31a. Leaf blade broadly elliptic to obovate, 2–5 × 1–2.5 cm; calyx pale green 26. *W. techinensis*
 31b. Leaf blade oblong to elliptic, 0.8–1.8 × 0.4–1.1 cm; calyx yellow 27. *W. baimashanensis*
 30b. Both surfaces of leaf blade pubescent.
 32a. Leaf blade 1–2.5 mm wide 28. *W. sinoparviflora*
 32b. Leaf blade 4–12 mm wide.
 33a. Leaf blade 3–3.8 × 0.9–1.2 cm 29. *W. alternifolia*
 33b. Leaf blade 0.7–1.2 × 0.4–0.7 cm 30. *W. lungtzeensis*
 29b. Inflorescences elongating during anthesis, mostly more than 4-flowered; ovary completely
 pubescent; bud globose, densely white pubescent; flowers yellow.
 34a. Ovary sessile; leaf blade appressed sericeous 33. *W. capitatoracemosa*
 34b. Ovary stipitate; leaf blade pubescent at least on midrib, sometimes glabrescent.
 35a. Leaf blade glabrescent, reticulate veins abaxially obscure 34. *W. ligustrina*
 35b. Leaf blade persistently pubescent, at least on midrib, reticulate veins abaxially conspicuous.

- 36a. Calyx ca. 15 mm, exterior with appressed and long sericeous pubescence; leaf blade 2–5 × 0.8–1.6 cm, lateral veins 5 or 6 pairs, abaxially conspicuous 35. *W. canescens*
- 36b. Calyx ca. 12 mm, exterior with appressed and short pubescence; leaf blade 1.5–3 × 0.5–1 cm, lateral veins 3 or 4 pairs, slender, abaxially obscure 36. *W. lichiangensis*
- 25b. Leaves mostly opposite or subopposite, sometimes also alternate.
- 37a. Leaf blade 1.5–2.5 mm wide, to 2.5 cm 23. *W. stenophylla*
- 37b. Leaf blade (2–)3–35 mm wide, if less than 3 mm, then at least 2.5 cm.
- 38a. Calyx pink, purple, lilac, or lavender.
- 39a. Calyx 4–6 mm.
- 40a. Ovary glabrous except for pilose apex; inflorescence ± paniculate, ca. 20-flowered 20. *W. haoi*
- 40b. Ovary uniformly hairy; inflorescence not paniculate, 3–5(–8)-flowered 21. *W. vaccinium*
- 39b. Calyx 7–12 mm.
- 41a. Leaf blade drying dark brown; lateral veins 4 or 5 per side; calyx tube 9–12 mm 17. *W. monnula*
- 41b. Leaf blade drying green, lateral veins 10 or 11 per side; calyx tube ca. 15 mm 1. *W. mononectaria*
- 38b. Calyx yellow, greenish yellow, yellowish white, or green, sometimes flushed with purple or red.
- 42a. Calyx 4–6 mm.
- 43a. Calyx yellowish white or green, sometimes flushed with purple; tube slightly ovoid, 2–5 mm 15. *W. taiwanensis*
- 43b. Calyx yellow; tube cylindrical, 4–6 mm 9. *W. micrantha*
- 42b. Calyx 7–15 mm.
- 44a. Inflorescence a panicle of racemes.
- 45a. Leaf blade abaxially glabrous; calyx greenish yellow or creamy-yellow, sometimes flushed with purple, tube often less than 10 mm.
- 46a. Leaf blade lanceolate-obovate, obovate, or oblanceolate, 1.6–2.5 cm wide; hypogynal disk annular, extended on one side into 1(–3) obovate scale(s) 5. *W. delavayi*
- 46b. Leaf blade lanceolate to oblong-lanceolate, 0.2–1 cm wide; hypogynal disk scales 2(or 3), linear or oblong, basally connate 22. *W. chamaedaphne*
- 45b. Leaf blade abaxially hairy; calyx yellow, tube ca. 10 mm.
- 47a. Leaf blade elliptic or ovate-orbicular to oblong, 0.8–2.8 cm wide; hypogynal disk scales 2, one linear and one oblong 24. *W. gracilis*
- 47b. Leaf blade narrowly oblanceolate to broadly linear, 0.4–0.8 cm wide; hypogynal disk scale 1, obovate, margin crenate 25. *W. reginaldi-farreri*
- 44b. Inflorescence capitate or shortly racemose, sometimes indistinctly paniculate.
- 48a. Lateral veins slender, dense, at a very narrow angle to midrib.
- 49a. Leaf blade oblong to lanceolate, 5–15 mm wide, abaxially reddish brown when dried 14. *W. indica*
- 49b. Leaf blade elliptic or oblong, apex broad, 4–9 mm wide, both surfaces glabrous, abaxially pale green 18. *W. capitata*
- 48b. Lateral veins remote, obscure, 5–7 pairs, at wide angle to midrib.
- 50a. Leaf blade lanceolate, 0.8–1.2 cm wide; stems relatively slender 16. *W. lanceolata*
- 50b. Leaf blade obovate to oblong, 1.3–2.5 cm wide; stems relatively stout.
- 51a. Inflorescence often 15–26-flowered, peduncle to 0.5 cm, stout 13. *W. pachyrachis*
- 51b. Inflorescence 4–6(–20)-flowered, peduncle 0.7–3 cm, slender 19. *W. retusa*

1. Wikstroemia mononectaria Hayata, Icon. Pl. Formosan. 5: 179. 1915.

独鳞堯花 du lin rao hua

Daphne mononectaria (Hayata) Halda.

Shrubs. Branches black-purple, long, slender, minutely rugulose, at first thinly strigose, soon glabrous. Leaves opposite, subopposite, or alternate, often on same shoot; petiole 2–3 mm; leaf blade green adaxially, paler abaxially, ovate to broadly lanceolate, 2.5–5 × 1–2 cm, membranous or papery, abaxially soft white strigose, adaxially glabrous except sometimes for midrib, base cuneate, apex acute to obtuse and minutely apiculate; lateral veins 10 or 11 per side of midrib, slender, at narrow angle to midrib. Inflorescences terminal, racemose, ca. 4

cm, often 6–8-flowered, glabrous. Calyx reddish purple; tube terete, long and narrow, ca. 15 × 1 mm, exterior glabrous; lobes 4, ovate, ca. 2 × 1.5 mm, apex rounded. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl below throat. Disk scale 1, linear, ca. 2 mm. Ovary obconic, stipitate, glabrous. Drupe reddish, curved-ovoid, ca. 5 × 4 mm, acuminate.

• Taiwan.

2. Wikstroemia liangii Merrill & Chun, Sunyatsenia 5: 140. 1940.

大叶堯花 da ye rao hua

Daphne liangii (Merrill & Chun) Halda.

Shrubs to 2 m tall. Branches reddish brown, terete, slightly laterally compressed, glabrous. Leaves opposite; petiole ca. 2 mm, stout; leaf blade glossy olive-green adaxially, pale green abaxially, oblong-elliptic, (10–)13–20 × (4–)4.5–9 cm, thickly to thinly papery, both surfaces glabrous, base broadly cuneate or rounded, tapering toward petiole, apex acute; lateral veins 8–12 pairs, conspicuous abaxially, slender. Inflorescences terminal, capitate, later elongating, 3–12-flowered, glabrous; peduncle 2–6 cm. Pedicel short, ca. 1 mm. Calyx yellowish green, 12–15 mm, exterior glabrous; lobes 4, elliptic, 5–6 × 3–4 mm. Stamens 8; filaments short. Anthers oblong, ca. 1.8 mm. Disk scales 2, linear, ca. 1 mm. Ovary ellipsoid, glabrous; style short; stigma capitate. Drupe ovoid, 8–10 × 5–6 mm. Fl. Jun–Sep.

- Forests, stream banks. Hainan.

3. Wikstroemia chui Merrill, Lingnan Sci. J. 9: 41. 1930 [“*chui*”].

窄叶堇花 zhai ye rao hua

Daphne chui (Merrill) Halda.

Shrubs to 1(–2) m tall. Young branches at first 4-angular, later terete, turning purplish, finely striped, densely yellow pubescent. Leaves opposite; petiole short, 1–1.8 mm; leaf blade glossy olive-green adaxially, yellowish brown when dried, green abaxially, lanceolate, 2.5–5 × 0.5–1.1 cm, thickly papery to thinly leathery, both surfaces glabrous, base cuneate, margin slightly revolute, apex acute or obtuse; lateral veins 9–15 pairs, more conspicuous abaxially, slender. Inflorescences terminal, capitate, elongating after flowering, often 4–7(–9)-flowered; peduncle 0.2–0.5 cm, slender, pubescent. Pedicel short. Calyx yellowish; tube 4–10 × 1–1.3 mm, exterior glabrous; lobes 4, ovate or elliptic, ca. 3 mm, apex obtuse. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat; filaments very short; anthers oblong, ca. 1.2 mm; upper ones almost exerted from calyx tube. Disk scales 1 or 2, linear. Ovary obovoid to cylindrical-ellipsoid, glabrous; style very short; stigma globose. Drupe red when ripe, ellipsoid, 6–8 mm, laterally compressed. Fl. Aug.

- Shaded moist places, by streams, valleys, forests, on rocks. Hainan.

4. Wikstroemia hainanensis Merrill, Lingnan Sci. J. 14: 40. 1935.

海南堇花 hai nan rao hua

Daphne hainanensis (Merrill) Halda.

Shrubs 1–3 m tall. Branches turning dark brown or purplish, terete, at first sparsely appressed puberulous. Leaves opposite; petiole 1–2 mm, glabrescent; leaf blade deep green adaxially, light green abaxially, ovate, elliptic, or oblong to broadly oblong-lanceolate, 2–10 × 1–3 cm, papery, both surfaces glabrous, base cuneate or subrounded, apex acute or minutely acuminate; lateral veins 8–12 pairs, conspicuous, slender. Inflorescences terminal, sometimes on lateral branches, subcapitate, rarely racemose, often 3–7-flowered; peduncle 0.3–0.4 cm, pubescent. Calyx yellow; tube 10–15 × ca. 1 mm, exterior glabrous; lobes 4, elliptic-ovate, 3–4 × 2–3 mm, apex obtuse. Stamens 8; filaments very short; anthers oblong, 1.5–2 mm. Disk

very narrowly annular, with 1–4 scales; scales linear, ca. 1 mm. Ovary ellipsoid, 1–2 mm, glabrous; style very short; stigma capitate, subsessile. Drupe red, ellipsoid, 7–8 mm, enclosed by persistent calyx. Fl. May–Sep.

- Open forests, exposed shrubby slopes; low elevations. Hainan.

5. Wikstroemia delavayi Lecomte, Notul. Syst. (Paris) 3: 129. 1915.

澜沧堇花 lan cang rao hua

Daphne delavayi (Lecomte) Halda; *D. scytophylla* (Diels) Halda subsp. *mekongensis* (W. W. Smith) Halda; *Wikstroemia mekongensis* W. W. Smith.

Shrubs erect, 1–2 m tall, much branched. Young branches pale green, turning purplish or brownish, subterete, glabrous. Leaves opposite, larger toward stem apex; petiole ca. 2 mm; leaf blade pale green adaxially, paler abaxially, lanceolate-obovate, obovate, or oblanceolate, 3–5.5 × 1.6–2.5 cm, both surfaces glabrous, base broadly cuneate, rounded, or slightly cordate, apex rounded, shortly apiculate, or acuminate; lateral veins 4 or 5 pairs, dark, slender, very oblique. Inflorescences terminal, paniculate, 3–4(–12) cm, to 9 cm wide, axes elongating considerably in fruit; peduncle stout, soon glabrous. Pedicel short, ca. 1 mm, articulate. Calyx carmine-purple to yellowish green with purple at apex; tube tubular, 8–10 × ca. 1 mm, exterior scattered puberulous; lobes 4, oblong, (1–)2 mm, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl at throat; filaments short; anthers oblong, ca. 1 mm. Disk annular, extended on one side into 1(–3) scale(s), scales obovate, apex 2-lobed. Ovary cylindrical-obovoid, 2.5–3 mm, stipitate, apex pubescent; style obscure; stigma capitate. Drupe dry or semidry, cylindrical, ca. 4 × 1.2 mm, enclosed by persistent calyx. Fl. and fr. autumn.

- Valley forests, shrubby or limestone areas; 2000–2700 m. Sichuan, Yunnan.

The calyx color can be strongly influenced by the environment: the type gathering of *Wikstroemia mekongensis* was described in the field as having deep purple-crimson flowers, whereas plants propagated in Europe from the same gathering had greenish yellow flowers, tipped with purple in bud.

6. Wikstroemia longipaniculata S. C. Huang, Acta Bot. Yunnan. 7: 283. 1985.

长锥序堇花 chang zhui xu rao hua

Daphne micrantha (Hemsley) Halda subsp. *longipaniculata* (S. C. Huang) Halda.

Shrubs to 2 m tall. Branches black, stout, glabrous. Leaves alternate; petiole 4–9 mm; leaf blade elliptic, 3–8 × 1–2.8 cm, stiffly papery, both surfaces glabrous, base cuneate, apex shortly acuminate, rarely obtuse or retuse; veins reticulate, dense and conspicuous, raised on both surfaces, anastomosing along margins. Inflorescences terminal, paniculate, much branched, 5–7 cm, many flowered; bracts lanceolate, white pubescent, with small, white tomentose bud in axil. Calyx greenish, ca. 3.5 mm; exterior glabrous; lobes 4, 2 large and 2 small, apex obtuse and rounded. Stamens 8, lower whorl inserted at middle of calyx

tube, upper whorl at throat; anthers ovoid. Disk scales 2, linear, one longer than other one. Ovary oblong, white hirsute, more densely so at apex; style short, hidden by hairs; stigma globose. Fruit not seen. Fl. autumn.

• Rocks and hill tops in mixed forests; ca. 500 m. SW Guangxi (Longzhou).

7. *Wikstroemia linoides* Hemsley, J. Linn. Soc., Bot. 26: 398. 1894.

亚麻蕘花 ya ma rao hua

Daphne linoides (Hemsley) Halda.

Herbs biennial or perennial, 0.6–1 m tall. Branches very slender, glabrous. Leaves opposite or alternate; petiole ca. 1 mm; leaf blade bright- or olive-green adaxially, paler or glaucous abaxially, narrowly oblong to oblanceolate-oblong, 1.2–3 × 0.3–0.8 cm, membranous, both surfaces glabrous, base cuneate, apex obtuse or slightly acute; lateral veins 5 or 6 pairs, conspicuous, slender, obliquely spreading from midrib. Inflorescences terminal, subcapitate-spicate, (1–)6–12-flowered; peduncle 2–5 cm, slender. Pedicel absent. Calyx yellow; tube narrow, 7–12 × 0.9–1.2 mm, exterior puberulous; lobes 4, oblong, 2–4 mm, apex rounded. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl in throat, upper anthers slightly exerted from calyx tube. Disk scale 1, linear, ca. 1.5 mm. Ovary stipitate, hirsute; style short; stigma capitate. Drupe yellow, obovoid, ca. 4 mm, apiculate.

• Dry open forests, shrubby slopes; 700–1600 m. Hubei, Shanxi, Sichuan.

8. *Wikstroemia angustifolia* Hemsley, J. Linn. Soc., Bot. 26: 396. 1891.

岩杉树 yan shan shu

Daphne hemsleyi Halda.

Shrubs, erect and broomlike, 0.3–1 m tall. Branches slender, angular, pubescent, soon glabrous. Leaves opposite or subopposite, very closely spaced; petiole short, distinct from leaf base; leaf blade dark green adaxially, paler abaxially, linear-ob lanceolate or oblong-spatulate, 0.8–2.6 × (0.1–)0.2–0.4 cm, leathery or papery, both surfaces glabrous, base slightly obtuse, margin revolute, apex obtuse-rounded, often finely apiculate; lateral veins obscure. Inflorescences terminal, capitate-racemose, 3(–5)-flowered; peduncle ± absent, sparsely puberulous. Pedicel to 3 mm, sparsely puberulous. Calyx whitish yellow, sometimes flushed pink or red, rather fleshy; tube cylindrical, 9–12 mm, 8-ribbed, exterior glabrous; lobes 4, oblong-ovate, 3–4 mm, net-veined. Stamens 8, lower whorl inserted at middle of calyx tube; anthers ca. 0.6 mm; upper ones slightly exerted from calyx tube. Disk scales 1(or 2), linear, apex 3-lobed. Ovary obovoid, ca. 3.5 mm, stipitate, apex pilose; style short; stigma capitate. Drupe red, oblong-ovoid, ca. 8 mm. Fl. late summer–early autumn.

• Forest margins, open bushlands, among rocks; 100–200 m. W Hubei, S Shanxi, E Sichuan.

9. *Wikstroemia micrantha* Hemsley, J. Linn. Soc., Bot. 26: 399. 1894.

小黄构 xiao huang gou

Daphne brevipaniculata (Rehder) Halda; *D. micrantha* (Hemsley) Halda; *D. micrantha* subsp. *paniculata* (H. L. Li) Halda; *Wikstroemia brevipaniculata* Rehder; *W. ericifolia* Domke; *W. micrantha* var. *paniculata* (H. L. Li) S. C. Huang; *W. paniculata* H. L. Li.

Shrubs, little branched, 0.5–1(–3) m tall. Branches green, gradually becoming brown, terete, slender, glabrous. Leaves opposite to subopposite, rarely alternate; petiole 1–2 mm, glabrous; leaf blade dull green adaxially, paler abaxially, oblong, elliptic-oblong, or narrowly oblong, rarely oblanceolate-oblong or spatulate, 0.5–4 × 0.3–1.7 cm, stiffly papery, both surfaces glabrous, base often rounded, margin revolute, apex obtuse or apiculate; lateral veins 6–11 pairs, abaxially conspicuous, spreading to margins and anastomosing there. Inflorescences terminal, racemose, solitary or grouped into a small panicle, 0.5–4 cm, 4–15-flowered, glabrous or hairy. Calyx yellow, rarely white; tube narrow, 4–6 mm, exterior sparsely puberulous; lobes 4, broadly ovate, ca. 1 mm. Stamens 8, upper whorl in throat; anthers oblong-elliptic, ca. 0.5 mm; upper ones slightly exerted from calyx tube. Disk scales 1(–3), free, linear to suboblong, ca. 0.3 mm, apex irregularly lobed. Ovary obovoid, shortly stipitate, pubescent or glabrous; style short; stigma capitate. Drupe black-purple, ovoid. Fl. and fr. autumn and winter.

• Valleys, shrubby slopes, by roads or rivers; 200–1000 m. Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Shanxi, Sichuan, Yunnan.

10. *Wikstroemia glabra* W. C. Cheng, Contr. Biol. Lab. Sci. Soc. China, Bot. Ser., 6: 69. 1931.

光叶蕘花 guang ye rao hua

Daphne glabra (W. C. Cheng) Halda; *D. glabra* f. *purpurea* (W. C. Cheng) Halda; *Wikstroemia glabra* f. *purpurea* (W. C. Cheng) S. C. Huang; *W. glabra* var. *purpurea* W. C. Cheng.

Shrubs to 1.5 m tall. Bark ± cracked or creviced; branches green, turning black-purple in second year, angular, glabrous; leaf buds subglobose, small, tomentose. Leaves alternate; petiole ca. 2 mm, glabrous; leaf blade dull green adaxially, paler abaxially, ovate, elliptic, or oblong-elliptic, (1.5–)2–3.5 × 0.8–2 cm, membranous, abaxially pubescent, gradually glabrescent, adaxially glabrous, base cuneate to rounded or truncate, margin ± revolute, apex obtuse, acute, or shortly acuminate, sometimes retuse; lateral veins 5–10 pairs, sometimes purple, conspicuous abaxially. Inflorescences terminal, capitate, (1 or)2–5(–8)-flowered, peduncle 0.5–1.2 cm, glabrous. Calyx white or purple; tube 8–11 mm, exterior glabrous; lobes 4, ovate to orbicular, 4–5 × 4–5 mm, spreading to 1 cm in diam. overall, apex slightly acute. Stamens 8, lower whorl inserted at middle of calyx tube; anthers yellow, oblong-ovoid, 1–1.2 mm, included within calyx tube. Disk scales 1–3, linear, ca. 1/3 as long as ovary or slightly longer, apex 2-lobed or slightly retuse, rarely obtuse. Ovary ca. 3 mm, sessile, upper part pubescent; style short; stigma capitate. Drupe reddish, ovoid, ca. 8 mm. Fl. summer.

• Forests, sunny shrubby slopes; 900–1800 m. Anhui, Sichuan, Zhejiang.

Plants with purple flowers have been placed in *Wikstroemia glabra* var. *purpurea* but, in view of the overlapping distribution and lack of any other differentiating character, this is not followed here.

11. *Wikstroemia nutans* Champion ex Bentham, Hooker's J. Bot. Kew Gard. Misc. 5: 195. 1853.

细轴莪花 xi zhou rao hua

Shrubs 1–2 m or more tall. Bark dark brown; branches reddish or grayish brown, terete, glabrous. Leaves opposite or alternate; petiole 1–2 mm, glabrous; leaf blade green to brownish green adaxially, greenish white abaxially, ovate or ovate-elliptic to ovate-lanceolate, 3–6(–8.5) × 1.2–2.5(–4) cm, membranous to papery, both surfaces glabrous, base cuneate, subrounded, apex acuminate; lateral veins 6–13 pairs, slender. Inflorescences terminal, shortly racemose, often pendulous, 3–8-flowered; peduncle 0.7–3 cm, slender, glabrous. Pedicel 0.5–2 mm. Calyx yellowish green or pinkish; tube (10–)13–16 mm, base slightly inflated, exterior glabrous; lobes 4, elliptic, ca. 3 mm. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat; filaments ca. 0.5 mm; anthers linear, 1.5–2 mm. Disk scales 2, each divided by a septum, so appearing like 4 scales, ca. 1 mm. Ovary obovoid, ca. 1.5 mm, stipitate, apex pubescent; style very short; stigma capitate. Drupe dark red, ellipsoid, 6–7 × ca. 4.5 mm. Fl. spring–early summer, fr. summer–autumn.

Forests, shrubby slopes, valleys, roadsides; 300–1500(–1700) m. Fujian, Guangdong, Guangxi, Hainan, Hunan, Jiangxi, Taiwan [Vietnam].

1a. Leaves opposite; peduncle 1.5–3 cm 11a. var. *nutans*
1b. Leaves alternate; peduncle ca. 0.7 cm 11b. var. *brevior*

11a. *Wikstroemia nutans* var. *nutans*

细轴莪花(原变种) xi zhou rao hua (yuan bian zhong)

Daphne nutans (Champion ex Bentham) Halda.

Leaves opposite. Peduncle pendulous, 1.5–3 cm. Calyx yellowish green.

Forests; 300–800(–1700) m. Fujian, Guangdong, Guangxi, Hainan, Hunan, Taiwan [Vietnam].

11b. *Wikstroemia nutans* var. *brevior* Handel-Mazzetti, Akad. Wiss. Wien Sitzungsber., Math.-Naturwiss. Kl., Abt. 1, 58: 92. 1921.

短细轴莪花 duan xi zhou rao hua

Daphne nutans var. *brevior* (Handel-Mazzetti) Halda.

Leaves alternate, caducous. Inflorescences condensed, nearly capitate; peduncle ca. 0.7 cm, erect during anthesis, often pendulous in fruit.

• Forests, shrubby slopes, valleys, roadsides; 400–1500 m. Hunan, Jiangxi.

12. *Wikstroemia salicina* (H. Léveillé) H. Léveillé & Blin in Sargent, Pl. Wilson. 2: 535. 1916.

柳状莪花 liu zhuang rao hua

Daphne salicina H. Léveillé, Bull. Acad. Int. Géogr. Bot. 25: 42. 1915.

Shrubs to 1.5 m tall. Branches purplish, turning brownish purple, pubescent. Leaves opposite; petiole ± absent; leaf blade oblong-obovate to lanceolate, 1.5–3 × 0.3–0.8 cm, both surfaces densely pubescent, base attenuate, margin revolute, apex acute. Inflorescences terminal and axillary, racemose, 5–15-flowered; usually pedunculate, sometimes pendulous. Calyx tube cylindrical, 12–15 mm, exterior pubescent; lobes 4, obovate, 4–5 mm, margin undulate, apex acute. Stamens 8, lower whorl inserted slightly above middle, upper whorl in throat; anthers ca. 0.8 mm; upper ones partly exerted from calyx tube. Disk scale 1, oblong, ca. 3 mm, apex crenulate. Ovary ovoid, ca. 4 mm, glandular pubescent; style short; stigma globose, ca. 1 mm wide. Fruit not seen.

• Open bush lands on rocky slopes. Yunnan.

13. *Wikstroemia pachyrachis* S. L. Tsai, Sunyatsenia (Nat. Sci. Ed.) 5(2): 101. 1956.

粗轴莪花 cu zhou rao hua

Daphne pachyrachis (S. L. Tsai) Halda.

Shrubs 1–4 m tall. Branches dark brown, stout, sparsely pubescent, glabrescent, nodes swollen, internodes short. Leaves opposite, densely crowded; petiole 2(–8) mm; leaf blade dark green when dried, glossy adaxially, light green abaxially, obovate-elliptic or oblong-elliptic, 2.5–7 × 1–1.8(–2.5) cm, stiffly papery, abaxially covered with fine scales, base broadly cuneate or obtuse, margin slightly revolute, apex acute or obtuse; lateral veins (5–)8–15 pairs, conspicuous abaxially, dark and obscure adaxially. Inflorescences terminal and axillary, capitate, erect, often 15–26-flowered; peduncle to 0.5 cm, stout, sparsely pubescent. Pedicel almost absent. Calyx yellowish green, salverform-cylindric, 8–10 mm, exterior sparsely puberulous; lobes 4, ovate, ca. 2 mm, apex obtuse. Stamens 8, inserted above middle of calyx tube. Disk scales 1–3, linear, ca. 1/3 as long as ovary, membranous, apex lobed or truncate. Ovary obovoid-ellipsoid, sessile, apex pubescent or glabrous; style short; stigma capitate. Drupe red, pyriform-ovoid, 6–8 × ca. 4 mm. Fl. Sep–Oct, fr. winter.

• Open forests, rocky shrubby slopes; relatively high elevations. Guangdong, Guangxi, Hainan (Gan'en).

14. *Wikstroemia indica* (Linnaeus) C. A. Meyer, Bull. Cl. Phys.-Math. Acad. Imp. Sci. Saint-Petersbourg 1: 357. 1843.

了哥王 liao ge wang

Daphne indica Linnaeus, Sp. Pl. 1: 357. 1753; *Capura purpurata* Linnaeus; *D. aquilaria* Blanco; *D. cannabina* Lour-eiro (1790), not Wallich (1820); *D. rotundifolia* Linnaeus f.; *Eriosolena viridiflora* Zollinger & Moritz; *Wikstroemia forsteri* Decaisne; *W. indica* var. *viridiflora* J. D. Hooker; *W. ovalifolia* Decaisne; *W. ovata* Fernández-Villar (1880), not C. A. Meyer (1843); *W. valbrayi* H. Léveillé; *W. viridiflora* Meisner.

Shrubs 0.5–2 m or more tall. Branches reddish brown,

glabrous. Leaves opposite; petiole ca. 1 mm; leaf blade reddish brown on both surfaces when dried, obovate, elliptic-oblong, or lanceolate, 2–5 × 0.5–1.5 cm, papery to thinly leathery, both surfaces glabrous, base broadly or narrowly cuneate, apex obtuse or acute; lateral veins dense, slender, at narrow angle to midrib. Inflorescences terminal, capitate, several flowered; peduncle 0.5–1 cm, glabrous. Pedicel 1–2 mm. Calyx yellowish green, 7–12 mm, exterior glabrescent; lobes 4, broadly ovate to oblong, ca. 3 mm, apex acute or obtuse. Stamens 8. Disk scales often 2 or 4. Ovary obovoid or ellipsoid, glabrous or apex sparsely pubescent; style very short; stigma capitate. Drupe red to dark purple, ellipsoid, 7–8 mm. Fl. and fr. summer–autumn.

Forests, rocky shrubby slopes; below 1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Sichuan, Taiwan, Yunnan, Zhejiang [India, Malaysia, Myanmar, Philippines, Thailand, Vietnam; Australia, Pacific islands east to Fiji; Mauritius, Sri Lanka (introduced)].

See Halda (Genus *Daphne*, 145–146. 2001) for a more extensive synonymy of this widespread and variable, apomictic species.

15. Wikstroemia taiwanensis C. E. Chang, Bull. Taiwan Prov. Pingtung Inst. Agric. 19: 18. 1977.

台湾莢花 tai wan rao hua

Daphne taiwanensis (C. E. Chang) Halda.

Shrubs to 2 m tall. Young branches pale yellowish green, turning reddish brown, terete, appressed pubescent, glabrescent. Leaves opposite or alternate; petiole ca. 2 mm; leaf blade bright green adaxially, paler abaxially, elliptic or narrowly obovate to cochleate, 3–4 × 1.2–1.8 cm, stiffly papery, both surfaces glabrous, base obtuse, apex acute to acuminate; lateral veins 8 or 9 pairs, slightly raised abaxially, obscure adaxially. Inflorescences terminal, shortly spicate or umbellate, (1–)7–10-flowered; peduncle ca. 1 cm, glabrous. Pedicel 1–5 mm, articulate at base. Calyx yellowish white or green, sometimes flushed with purple; tube slightly ovoid, 2–5 mm, exterior hairy; lobes 4, ovate or oblong, 1–2 mm. Stamens 8; anthers oblong-elliptic, ca. 0.4 mm, obtuse, included within calyx tube. Disk scales 2, linear, each deeply 2-lobed. Ovary obovoid, glabrous or with apex pubescent; style short, ca. 1 mm; stigma globose. Drupe red, ovoid, 5–7 × ca. 4 mm.

• Forested slopes, thickets; low to middle elevations. Taiwan.

16. Wikstroemia lanceolata Merrill, Publ. Bur. Sci. Gov. Lab. 29: 31. 1905.

披针叶莢花 pi zhen ye rao hua

Daphne lanceolata (Merrill) Halda; *Wikstroemia angustissima* Merrill.

Shrubs to 4 m tall. Young branches appressed puberulous, glabrescent. Leaves opposite; petiole 1–2.5 mm, glabrous; leaf blade lanceolate, 4–6(–8.5) × 0.8–1.2(–2.5) cm, membranous to papery, both surfaces glabrous, base cuneate or broadly cuneate, apex acuminate; lateral veins 8–10(–16) pairs, slightly prominent abaxially. Inflorescences umbellate or shortly racemose, (1–)3–6(–20)-flowered; peduncle 0.2–0.3(–1.5) cm. Pedicel 1–1.5 mm. Calyx green or yellow-green; tube 5–14 mm, exterior puberulous, glabrescent; lobes 4, ca. 1 mm, puberulous, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx

tube, upper whorl at throat. Disk scales 2, linear. Ovary ovoid, apex sparsely pubescent; style short; stigma subglobose. Drupe ovoid, ca. 8 × 5 mm, usually glabrous, sometimes with apex sparsely hairy.

Forested slopes, thickets. Taiwan [Philippines].

Wikstroemia lanceolata is being investigated as a potential fiber crop in the Philippines.

17. Wikstroemia monnula Hance, J. Bot. 16: 13. 1878.

北江莢花 bei jiang rao hua

Shrubs 0.5–0.8 m tall. Branches yellowish green, turning dark purple, angular, pubescent. Leaves opposite to alternate; petiole short, 1–1.5 mm; leaf blade dark brown adaxially when dried, light brown abaxially, ovate-elliptic to elliptic or elliptic-lanceolate, 1–3.5 × 0.5–1.5 cm, papery or stiffly so, abaxially puberulous at least on veins, adaxially glabrous, base broadly cuneate or subrounded, apex acute; lateral veins 4 or 5 pairs, slender. Inflorescences terminal, often on short lateral branches, densely shortly racemose, (8–)12-flowered, pedunculate. Pedicel short. Calyx purplish red; tube 9–12 mm, slender, exterior white pubescent; lobes 4, ovate, 1–2 mm, apex slightly obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl at throat; upper anthers almost exerted from calyx tube. Disk scales 1–3, unequal, linear-oblong to broadly ovate, apex 3-lobed or -dentate. Ovary narrowly obovoid, ca. 4 mm, stipitate, apex puberulous; style very short; stigma depressed-globose. Drupe dry, ovoid-globose, enclosed by persistent calyx. Fl. and fr. Apr–Aug.

• Shrubby slopes, roadsides; 600–1100 m. S Anhui, Guangdong, Guangxi, Guizhou, Hunan, Zhejiang.

- 1a. Leaf blade abaxially puberulous only on veins; disk scales 1 or 2, linear-oblong or oblong 17a. var. *monnula*
- 1b. Leaf blade abaxially uniformly puberulous; disk scales 3, broadly ovate 17b. var. *xiuningensis*

17a. Wikstroemia monnula var. *monnula*

北江莢花(原变种) bei jiang rao hua (yuan bian zhong)

Daphne monnula (Hance) Halda; *D. stenantha* (Hemsley) Halda; *Wikstroemia stenantha* Hemsley.

Leaf blade abaxially with puberulous veins. Disk scales 1 or 2, linear-oblong or oblong.

• Shrubby slopes, roadsides; 600–1100 m. Guangdong, Guangxi, Guizhou, Hunan, Zhejiang.

This taxon was misidentified as *Wikstroemia nutans* by Cai (Bull. Zhongshan Univ. 5(2): 104. 1956).

17b. Wikstroemia monnula var. *xiuningensis* D. C. Zhang & J. Z. Shao in Y. J. Jin, Fl. Anhui 3: 646. Feb 1990.

休宁莢花 xiu ning rao hua

Daphne monnula var. *xiuningensis* (D. C. Zhang & J. Z. Shao) Halda.

Leaf blade abaxially uniformly puberulous. Disk scales 3, broadly ovate.

- 600–700 m. S Anhui (Xiuning).

The varietal epithet was misspelled “*xiningensis*” on p. 646 of the protologue. It was correctly spelled “*xiuningensis*,” corresponding with the transliteration of the type locality, Xiuning, on p. 453 (key), p. 457 (Chinese description), and p. 693 (index). The same name was published two months later by the same authors with the same type (Acta Phytotax. Sin. 28: 162. Apr 1990) and spelled “*xiuningensis*” throughout.

18. Wikstroemia capitata Rehder in Sargent, Pl. Wilson. 2: 530. 1916.

头序堇花 tou xu rao hua

Daphne capitata (Rehder) Halda.

Shrubs 0.5–1 m tall. Branches green, usually turning purple-brown in first year, terete, slender, glabrous. Leaves opposite or subopposite; petiole 0.5–1.5 mm; leaf blade dull yellowish green adaxially, paler abaxially, elliptic or obovate-elliptic, rarely obovate-oblong, 1–2 × 0.4–1 cm, membranous, both surfaces glabrous or sparsely strigose and glabrescent, base gradually narrowed, apex obtuse or slightly obtuse; lateral veins 5–7 pairs, oblique, slightly curved upward, raised abaxially. Inflorescences terminal, capitate, 3–7-flowered; peduncle 1–2 cm, very slender. Pedicel absent. Calyx yellow, 7–8 × ca. 1 mm, exterior sericeous-strigose; lobes 4, ovate or ovate-oblong, ca. 1.5 × 1 mm. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat; filaments short; anthers ovoid-oblong, 0.8–1 mm. Disk scale 1, linear, ca. 1 mm, apex 2- or 3-dentate. Ovary ca. 3 mm, strigose-pubescent; style very short, ca. 0.5 mm; stigma purple, capitate. Drupe yellow or orange, ovoid-globose, ca. 5 mm, slightly strigose, tapering at both ends, enclosed by persistent calyx. Fl. summer–autumn.

- Forests, exposed shrubby slopes; 300–1000 m. Guizhou, Hubei, Shanxi, Sichuan.

19. Wikstroemia retusa A. Gray, J. Bot. 3: 303. 1865.

倒卵叶堇花 dao luan ye rao hua

Daphne grayana Halda; *Wikstroemia obovata* Hemsley.

Shrubs, sometimes deciduous, 1–3 m tall. Branches red-brown, stout, densely appressed pubescent. Leaves opposite; petiole short, 1–2 mm, ± pubescent; leaf blade dark green adaxially, paler abaxially, obovate or oblong-obovate, 1.5–5 × 1–3.5 cm, thickly papery, both surfaces glabrous, base rounded to cuneate, apex rounded to rounded-obtuse, sometimes slightly retuse; lateral veins 8–10 pairs, slightly raised abaxially, obscure adaxially. Inflorescences terminal, spicate, 4–6(–20)-flowered; peduncle 0.7–3 cm, densely pubescent. Pedicel 1–3 mm. Calyx greenish yellow; tube 8–10 mm, exterior sparsely pubescent; lobes 4, ovate, ca. 3 mm. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl just below throat; filaments short. Disk scales 2 or 3, opposite, oblong, apex 2-lobed. Ovary pubescent at apex; style short; stigma globose. Drupe red, globose, ca. 6 mm. Fl. Jul–Sep.

Forest thickets, deforested slopes, grasslands. Taiwan [Japan, Philippines].

20. Wikstroemia haoi Domke, Notizbl. Bot. Gart. Berlin-Dahlem 13: 387. 1936 [“haoi”].

武都堇花 wu du rao hua

Daphne haoi (Domke) Halda.

Shrubs to 1 m tall, much branched. Branches black-purple, terete, ± densely white tomentose, glabrescent, irregularly rugose-lenticellate; leaf buds small, white sericeous. Leaves opposite or alternate, subopposite on flowering branches; petiole ca. 2 mm, puberulous; leaf blade dark green adaxially, whitish green abaxially, elliptic or ovate-elliptic, 0.8–1.5(–2.5) × 0.3–0.8(–1.5) cm, abaxially sparsely sericeous, adaxially less hairy, base tapering to petiole, margin ± revolute, apex acute or slightly obtuse; midrib conspicuously raised, lateral veins inconspicuous, concave or obscure. Inflorescences terminal and subterminal, ± spicate, sometimes grouped into a panicle, 3–20-flowered; peduncle 0.3–2.5 cm. Pedicel ca. 1 mm. Calyx purplish or brownish yellow; tube ± narrowly obconic, ca. 9 × 1 mm, exterior white or yellow sericeous, glabrescent; lobes 4, outer lobes ca. 2 × as long as inner, obovate or suborbicular-elliptic, ca. 2 × 1.5 mm, apex rounded. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat; filaments very slender; anthers oblong, ca. 1 × 0.5 mm; upper ones slightly exerted from calyx tube. Disk scale 1, linear, ca. 1.5 × 0.1 mm, finely dentate or irregularly crenulate, apex obtuse to truncate. Ovary cylindrical-clavate, ca. 3 mm, glabrous except for pilose tip; style very short, slender; stigma globose, papillose. Drupe brownish red, ovoid, ca. 6 mm. Fl. summer.

- Open woodlands, forest margins, rocky slopes, roadsides; 2500(–3000) m. S Gansu, N Sichuan.

21. Wikstroemia vaccinium (H. Léveillé) Rehder, J. Arnold Arbor. 15(2): 103. 1934.

平伐堇花 ping fa rao hua

Lonicera vaccinium H. Léveillé, Fl. Kouy-Tchéou 64. 1914; *Daphne monnula* (Hance) Halda var. *vaccinium* (H. Léveillé) Halda; *D. vaccinium* (H. Léveillé) Halda.

Shrubs, suckering from base, deciduous, 0.3–0.4 m tall. Bark blackish purple; branches sericeous-strigose, glabrous by second year. Leaves opposite; petiole ca. 1 mm, sericeous-strigose; leaf blade dark green, elliptic to ovate-elliptic, 0.5–1 cm, leathery, abaxially strigose, adaxially glabrous, base broadly cuneate, apex obtuse; lateral veins ca. 3 per side of midrib. Inflorescences terminal, capitate, becoming shortly spicate, 3–5(–8)-flowered; peduncle ca. 0.5 cm in fruit. Pedicel absent. Calyx pink; tube ca. 4 mm, exterior sericeous-strigose; lobes 4, ovate, 1–1.5 mm, glabrous, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; anthers linear, included within calyx tube. Disk scale 1, linear, ca. 0.7 mm, dentate. Ovary ovoid, ca. 2 mm, hairy; style short; stigma capitate. Drupe reddish, ellipsoid, ca. 4 mm, enclosed by persistent calyx.

- Bushy slopes, among rocks; 2400–3000 m. Guizhou.

22. Wikstroemia chamaedaphne (Bunge) Meisner in A. Candolle, Prodr. 14: 547. 1857.

河朔堇花 he shuo rao hua

Passerina chamaedaphne Bunge, Enum. Pl. China Bor. 58. 1833 [“1831”]; *Daphne chamaedaphne* (Bunge) Halda; *Diplomorpha chamaedaphne* (Bunge) C. A. Meyer.

Shrubs to 1(–1.5) m tall, much branched. Branches green, becoming brown, nearly 4-angled, slender, ± tomentose, soon glabrous. Leaves opposite; petiole very short to almost absent; leaf blade pale green adaxially, glaucous abaxially, lanceolate to oblong-lanceolate, 2–6 × 0.2–1 cm, thinly leathery, rugulose when dried, both surfaces glabrous, base cuneate, apex acute; lateral veins 7 or 8 pairs. Inflorescences terminal and axillary, spicate, often paniculate, axes lengthening in fruit, densely gray pubescent. Pedicel persistent, very short, articulate. Calyx greenish yellow or creamy-yellow, 8–10 mm; tube 5–8 mm, exterior gray sericeous-pubescent; lobes 4, in two pairs: one large, other one small, ovate to oblong, 1–2 mm, apex rounded. Stamens 8, inserted above middle of calyx tube; filaments short to absent; anthers oblong, ca. 1 mm. Disk scales 2(or 3), linear or oblong, ca. 0.8 mm, connate at base, apex obtuse. Ovary clavate, stipitate, apex minutely pubescent; style short; stigma globose, flattened. Drupe dry, brownish, ovoid, ca. 6 mm, enclosed by persistent calyx. Fl. Jun–Aug, fr. Sep.

• Open mixed forests, bushy slopes, among boulders, roadsides; 500–1900(–2400) m. Gansu, Hebei, Henan, Hubei, Jiangsu, Shaanxi, Shanxi, Sichuan.

23. *Wikstroemia stenophylla* E. Pritzel ex Diels, Bot. Jahrb. Syst. 29: 480. 1900.

轮叶蕤花 lun ye rao hua

Daphne stenophylla (E. Pritzel ex Diels) Halda; ?*D. stenophylla* var. *ziyangensis* (C. Y. Yu) Halda; *Wikstroemia rosmarinifolia* H. Winkler (1922), not (Rehder) Domke (1932); ?*W. stenophylla* var. *ziyangensis* C. Y. Yu.

Shrubs evergreen, 0.2–0.8(–1.3) m tall. Bark brown, much branched in upper part; branches green, turning brownish, 4-angled when young, pubescent. Leaves opposite, decussate or ternate, densely crowded on upper branches; petiole very short; leaf blade deep green adaxially, glaucous abaxially, linear, 0.5–2.5 × 0.15–0.25 cm, leathery, both surfaces at first pubescent, soon glabrous, base tapering to petiole, margin revolute, apex aristate; midrib conspicuously raised, lateral veins obscure. Inflorescences terminal, rarely axillary, a panicle of spikes, rarely reduced to a single spike; spikes 4–10-flowered; peduncle to 1 cm, gray sericeous. Pedicel almost absent. Calyx yellow; tube 5–8(–10) mm, exterior yellow sericeous; lobes 4, oblong, 1–1.5(–2) mm. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat; upper ones exerted from calyx tube. Disk scale 1(–4), lanceolate, apex 2-lobed. Ovary cylindrical, sparsely puberulous or pubescent only at apex; style very short; stigma globose. Drupe red, conic, ca. 5 mm, enclosed by persistent membranous calyx. Fl. summer–autumn.

• Sunny shrubby slopes, valleys, roadsides; 1600–2500 m. W Sichuan.

24. *Wikstroemia gracilis* Hemsley, J. Linn. Soc., Bot. 26: 397. 1894.

纤细蕤花 xian xi rao hua

Daphne rehderi Halda, nom. illeg. superfl.

Shrubs to 1 m tall. Branches very slender, turning brownish striate, long strigose; leaf buds ovoid, white pubescent or tomentose. Leaves opposite or subopposite, sometimes in whorls of 3; petiole ca. 1 mm; leaf blade green adaxially, grayish green abaxially, elliptic or ovate-orbicular to oblong, 1.5–5 × 0.8–2.8 cm, membranous, both surfaces sparsely strigose, glabrescent, base broadly cuneate to ± rounded, apex obtuse; lateral veins 5 or 6 pairs, slender. Inflorescences terminal, racemose, sometimes in small panicles; peduncle short. Calyx yellow; tube broadly cylindrical, ca. 10 mm, exterior appressed hairy; lobes 4, elliptic, ca. 2 mm, reticulate veins obvious. Stamens 8, inserted in calyx tube. Disk scales 2, one linear and one oblong. Ovary stipitate, apex pubescent; style short; stigma capitate. Fruit not seen. Fl. autumn.

• Forests, shaded places on slopes; ca. 1100 m. Hubei, Sichuan.

When Halda published the nomen novum *Daphne rehderi* for this species (blocking name: *D. gracilis* E. Pritzel), he included *D. rehderi* subsp. *techinensis* (S. C. Huang) Halda, based on *Wikstroemia techinensis* S. C. Huang. Because the epithet of *W. techinensis* was available at species rank in *Daphne* and should have been so used (with *W. gracilis* as a subspecies), the name *D. rehderi* was nomenclaturally superfluous when published and is therefore illegitimate.

25. *Wikstroemia reginaldi-farreri* (Halda) Yin Z. Wang & M. G. Gilbert, **comb. nov.**

甘肃蕤花 gan su rao hua

Basionym: *Daphne reginaldi-farreri* Halda, Acta Mus. Richnov., Sect. Nat. 8: 115. 2001.

Shrubs evergreen, to 1 m tall. Bark gray, soft; stems many; branches slender, glabrous. Leaves opposite; petiole 2–5 mm; leaf blade dark glossy green abaxially, narrowly oblanceolate to broadly linear, (1.5–)2.5–4 × 0.4–0.8 cm, thickly papery, both surfaces hirsute, base attenuate, apex abruptly acuminate, mucronulate; lateral veins obscure. Inflorescences terminal and subterminal, erect, racemose, ± paniculate, 6–10-flowered; peduncle to ca. 2 cm. Calyx yellow; tube ca. 10 mm, exterior puberulous at base; lobes 4, unequal, ovate, ca. 2 × 1 mm, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments ca. 0.4 mm; anthers linear, ca. 1 mm. Disk scale 1, obovate, ca. 0.5 mm, margin crenate. Fruit not seen.

• S Gansu (Zhugqu).

26. *Wikstroemia techinensis* S. C. Huang, Acta Bot. Yunnan. 7: 284. 1985.

德钦蕤花 de qin rao hua

Daphne rehderi Halda subsp. *techinensis* (S. C. Huang) Halda.

Shrubs to 1.5 m tall. Branches striped, brown, slender, scattered puberulous, glabrescent; leaf buds subglobose, white pubescent. Leaves alternate; petiole short, ca. 1 mm; leaf blade green adaxially, slightly grayish white abaxially, broadly elliptic to obovate, 2–5 × 1–2.5 cm, membranous, base cuneate, apex rounded, obtuse, or retuse; midrib conspicuous on both sur-

faces; lateral veins tenuous, slightly prominent abaxially. Inflorescences terminal on young branches, clustered, 2–4-flowered; peduncle ca. 0.5 cm. Calyx pale green, ca. 12 mm, 8-veined, exterior puberulous; lobes 4, oblong, margin slightly erose. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl at throat. Disk scales 2, linear, or one of them broader, ca. 1/2 as long as ovary. Ovary clavate, stipitate, appressed pubescent, more densely so at apex; style short, hidden by hairs; stigma globose. Fruit not seen. Fl. summer.

- Forests; ca. 3400 m. Yunnan.

27. *Wikstroemia baimashanensis* S. C. Huang, Acta Bot. Yunnan. 7: 286. 1985.

白马山堇花 bai ma shan rao hua

Daphne baimashanensis (S. C. Huang) Halda.

Shrubs 0.8–1 m tall. Young branches brown, turning black-brown in second year, sparsely pubescent, soon glabrous. Leaves alternate, larger toward stem apex; petiole ca. 1 mm; leaf blade elliptic to oblong, 0.8–2 × 0.5–1.2 cm, membranous, both surfaces glabrous, base broadly cuneate or subrounded, apex rounded or obtuse to slightly retuse; lateral veins 2 or 3 pairs, slender. Inflorescences terminal, fasciculate, 2–4-flowered. Pedicel ca. 1 mm. Calyx yellow; tube ca. 1.2 cm, slender, 8-ribbed inside, exterior sparsely pubescent; lobes 4, oblong, ca. 2 mm, margin erose, apex rounded; reticulate veins obvious. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; anthers narrowly ovoid-sagittate, ca. 1 mm; upper ones slightly exerted from calyx tube. Disk scale 1, narrowly oblong, ca. 0.4 mm, apex 3-lobed. Ovary ca. 1.8 mm, stipitate, pubescent; style short; stigma globose. Fruit not seen.

- Forests; ca. 2800 m. Yunnan.

28. *Wikstroemia sinoparviflora* Yin Z. Wang & M. G. Gilbert, nom. nov.

小花堇花 xiao hua rao hua

Replaced synonym: *Wikstroemia parviflora* S. C. Huang, Acta Bot. Yunnan. 7: 289. 1985, not *Wikstroemia parviflora* (Choisy) S. F. Blake, Contr. Gray Herb., n.s., 53: 40. 1918 [*Haemocharis parviflora* Choisy, Mém. Soc. Phys. Genève 14: 144. 1855, Theaceae]; *Daphne parviflora* Halda.

Shrubs 0.2–0.5 m tall, much branched. Branches gray, pubescent, glabrescent. Leaves alternate, densely crowded at branch apices; leaf blade lanceolate or linear-lanceolate, 0.4–1 × 0.1–0.2 cm, both surfaces pubescent, margin revolute. Inflorescences terminal, fasciculate, 1–4-flowered; peduncle absent. Calyx yellowish green, 3–5 mm; tube trumpet-shaped, exterior pubescent; lobes 4, apex rounded. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat; upper anthers slightly exerted from calyx tube. Disk scale 1, slender. Ovary obovoid, pubescent above middle; style short; stigma capitate. Drupe ovoid, ca. 3 × 1.5 mm, enclosed by persistent calyx.

- Dry shrubby slopes, roadsides; 1000(–2000) m. Gansu.

29. *Wikstroemia alternifolia* Batalin, Trudy Imp. S.-Peterburgsk. Bot. Sada 13: 9. 1893.

互生叶堇花 hu sheng ye rao hua

Daphne alternifolia (Batalin) Halda; *D. alternifolia* var. *multiflora* (Lecomte) Halda; *Wikstroemia alternifolia* var. *multiflora* Lecomte.

Shrubs. Branches pale white, terete, pubescent when young. Leaves mostly alternate, rarely some opposite; petiole short, ca. 1.5 mm, puberulous; leaf blade lanceolate to oblanceolate, (1.5–) 3–3.8 × 0.9–1.2(–1.8) cm, thinly papery, both surfaces sparsely pubescent, midrib slightly prominent abaxially, lateral veins obscure. Inflorescences terminal, 1–4(–15)-flowered; peduncle shorter than leaves. Pedicel absent. Calyx yellow, 10–11(–20) mm; tube slender, ca. 2 mm in diam., exterior appressed puberulous; lobes 4, 1/5–1/4 as long as tube, apex rounded and truncate (or acute), slightly premorse. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl in throat; upper ones slightly exerted from calyx tube. Disk scales 1(or 2), linear, 1/4–1/2 as long as ovary, apex 5-lobed. Ovary narrowly globose, densely pilose; stigma yellow, capitate. Fruit not seen.

- Open bushy slopes, rocks; below 2500 m. Gansu, N Sichuan.

30. *Wikstroemia lungtzeensis* S. C. Huang, Acta Bot. Yunnan. 7: 285. 1985.

隆子堇花 long zi rao hua

Daphne baimashanensis (S. C. Huang) Halda subsp. *lungtzeensis* (S. C. Huang) Halda.

Shrubs 1–1.5 m tall. Primary branches brown, turning grayish white, densely gray pubescent, glabrescent; leaf buds globose, white tomentose. Leaves alternate; petiole short; leaf blade suborbicular or oblong, 0.7–1.2 × 0.4–0.7 cm, both surfaces appressed pubescent, base broadly cuneate or subrounded, apex obtuse or apiculate; lateral veins 3–5 pairs, slender. Inflorescences terminal, 2–4 flowered. Calyx yellow, ca. 11 mm, exterior densely pilose; lobes 4, suborbicular, ca. 1.5 mm, apex erose; reticulate veins conspicuous inside. Stamens 8, lower whorl inserted slightly above middle of calyx tube, upper whorl at throat. Disk scales 1–3, apex 2-lobed or free. Ovary stipitate, densely pilose; style short; stigma capitate. Fruit not seen. Fl. Jun.

- Dry slopes; 3600–3800 m. Xizang.

31. *Wikstroemia pampaninii* Rehder in Sargent, Pl. Wilson. 2: 537. 1916.

鄂北堇花 e bei rao hua

Daphne pampaninii (Rehder) Halda.

Shrubs 0.5–0.7(–1.5) m tall. Branches erect, turning purplish brown in second year, terete, slender, smooth, densely white strigose; leaf buds subglobose, white pubescent. Leaves alternate; petiole ca. 1 mm, densely pubescent; leaf blade elliptic or obovate-elliptic or narrowly elliptic, 1–2 × 0.4–0.8 cm, membranous, both surfaces long strigose to tomentose, margin slightly revolute, apex acute; midrib conspicuously raised abaxially, lateral veins remote and obscure. Inflorescences terminal and subterminal, spicate, often paniculate, many flowered. Pedicel absent. Calyx yellow; tube 3–4(–5) mm, exterior densely

appressed puberulous; lobes 4, ovate, ca. 1.5 mm, outside puberulous. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat, subsessile; anthers oblong, ca. 0.8 mm; upper ones almost exerted from calyx tube. Disk scales 2, unequal, linear or lanceolate, ca. 1 mm, apex 2- or 3-toothed. Ovary ca. 3 mm, densely appressed hirsute; style short; stigma surrounded by hairs. Drupe reddish, ellipsoid, ca. 6 mm, pubescent. Fl. Jul–Aug, fr. Sep.

• Open mixed forests, shrubby slopes; 400–1100(–2800) m. Gansu, Henan, Hubei, Shaanxi, Shanxi.

32. Wikstroemia cochlearifolia S. C. Huang, Acta Bot. Yunnan. 7: 290. 1985.

匙叶堇花 chi ye rao hua

Daphne pampaninii (Rehder) Halda subsp. *cochlearifolia* (S. C. Huang) Halda.

Shrubs to 0.5 m tall. Young branches turning black in second year, densely gray pubescent, glabrescent. Leaves alternate, rarely subopposite; petiole short to almost absent; leaf blade elliptic to oblanceolate-spatulate, 1–2 × 0.2–0.5 cm, abaxially densely appressed puberulous, adaxially glabrous, base gradually narrowed, apex acuminate; lateral veins obscure. Inflorescences terminal, on short lateral shoots, or in axils of subterminal leaves, capitate, 1- to several flowered. Calyx pale yellow, ca. 8 mm, exterior pubescent; lobes 4, in two pairs: one larger than other, apex rounded. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat. Disk scales 4, linear, small. Ovary obconic, ca. 2 mm, pubescent; style short, hidden by hairs; stigma globose. Drupe ellipsoid, enclosed by persistent calyx. Fl. autumn.

• *Thuja* forests; ca. 1200 m. N Sichuan.

33. Wikstroemia capitatoracemosa S. C. Huang, Acta Bot. Yunnan. 7: 287. 1985 [“*capitato-racemosa*”].

短总序堇花 duan zong xu rao hua

Daphne canescens Wikström subsp. *capitatoracemosa* (S. C. Huang) Halda.

Shrubs 0.5–2 m tall, much branched. Primary branches grayish brown or dark brown in second year, densely grayish white pubescent, glabrescent; leaf buds subglobose, white pubescent. Leaves alternate; petiole 1–2 mm; leaf blade lanceolate or ovate-lanceolate to oblong-lanceolate, 1.5–3.5 × 0.5–1.5 cm, stiffly papery, both surfaces appressed grayish white sericeous-pubescent, glabrescent, base broadly cuneate or rounded, apex acute; lateral veins 4–7 pairs, conspicuous, raised abaxially, reticulate veins conspicuous and dense. Inflorescences terminal or subterminal, densely racemose, 5–10-flowered; peduncle 0.6–1.2 cm. Pedicel articulate at apex. Calyx yellow, 8–9 mm, exterior grayish white pubescent; lobes 4, oblong, 1–1.5 mm, apex obtuse. Stamens 8, lower whorl inserted slightly above middle of calyx tube, upper whorl at throat. Disk scale 1, linear-lanceolate, square, or oblong, apex irregularly dentate. Ovary ellipsoid, 1.5–2 mm, sessile, sericeous-pubescent; style short, hidden by hairs; stigma globose. Drupe dry. Fl. autumn.

• Dry hot valleys, shrubby slopes; 2200–4000 m. N and SW Si-

chuan, E Xizang, NW Yunnan.

34. Wikstroemia ligustrina Rehder in Sargent, Pl. Wilson. 2: 531. 1916.

白腊叶堇花 bai la ye rao hua

Daphne ligustrina (Rehder) Halda.

Shrubs erect, 0.5–1.5 m tall, broomlike. Young branches turning brownish, terete, slender, grayish white sericeous-strigose, glabrescent; leaf buds subglobose, white pubescent. Leaves alternate, rarely subopposite; petiole short, 1–1.5 mm, pubescent; leaf blade dull green adaxially, paler abaxially, elliptic or narrowly oblong to oblanceolate-oblong, 1–4 × 0.3–1.5 cm, papery, both surfaces grayish white pubescent, glabrescent, base broadly cuneate or subrounded, apex obtuse or slightly acute; midrib slightly raised abaxially, lateral veins 4–6 pairs, conspicuous abaxially as are reticulate veins, obscure adaxially. Inflorescences terminal, capitate or shortly spicate, 1- to few or many flowered; peduncle 0.1–0.5 cm, appressed sericeous. Pedicel very short or absent. Calyx yellow; tube 6–11 mm, exterior appressed sericeous; lobes 4, ovate, ca. 2.5 mm, apex obtuse, slightly erose. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl at throat; filaments very short; anthers oblong, 1–1.3 mm, included within calyx tube. Disk scale 1, ± square, apex irregularly dentate. Ovary narrowly ellipsoid, ca. 3.5 mm, densely appressed pubescent; style very short; stigma capitate. Drupe orange-red, ovoid, ca. 7 mm. Fl. autumn. $2n = 20^*$.

• Forest margins, shrubby slopes; 1900–2700(–3500) m. Hebei, Shaanxi, Shanxi, Sichuan, Yunnan.

35. Wikstroemia canescens Wallich ex Meisner, Denkschr. Regensburg. Bot. Ges. 3: 288. 1841.

堇花 rao hua

Diplomorpha canescens (Wallich ex Meisner) C. A. Meyer; *Wikstroemia inamoena* Meisner.

Shrubs 1.6–2 m tall, often much branched toward apex. Primary branches purple-black, turning grayish brown, pubescent; leaf buds subglobose, white pubescent. Leaves alternate; petiole short, 1.5–2.5 mm; leaf blade green adaxially, slightly whitish abaxially, lanceolate, 2.5–5.5 × 0.8–2.5 cm, abaxially villous, adaxially appressed sericeous, base broadly cuneate or rounded, apex acute; lateral veins 4–7 pairs, conspicuous, reticulate veins obvious abaxially. Inflorescences terminal and axillary, many, capitate, elongating into racemes after anthesis, 4–10-flowered; peduncle 1–2 cm, sometimes with 2 tiny leaflike bracts. Pedicel persistent, ca. 2 mm, articulate. Calyx yellow, ca. 15 mm, 8-ribbed inside, exterior gray villous, similar to abaxial leaf surface; lobes 4, oblong, ca. 2 × 1 mm, apex obtuse. Stamens 8, inserted above middle of calyx tube; filaments very short; anthers ca. 1.5 mm. Disk scales 1–4, unequal in size, margin incised. Ovary clavate, ca. 5 × 1 mm, stipitate, pubescent; style short, completely hidden by hairs; stigma capitate, papillose. Drupe dry. Fl. autumn. $2n = 12, 18, 20, 26$.

Shrubby slopes, among rocks; 1000–2800(–3500) m. Xizang [Afghanistan, Bangladesh, India, Japan, Nepal, Pakistan].

36. Wikstroemia lichiangensis W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 8: 136. 1913.

丽江堯花 li jiang rao hua

Daphne lichiangensis (W. W. Smith) Halda.

Shrubs 1.5–3 m tall, much branched. Young branches yellowish green, turning grayish black, terete, rugose-stripped, densely grayish white tomentose, glabrescent. Leaves alternate; leaf blade dull green adaxially, paler abaxially, oblanceolate or oblong, 1.5–3 × 0.5–1 cm, papery, both surfaces scattered grayish white pubescent, base broadly cuneate, margin slightly recurved, apex rounded or obtuse; lateral veins 4 or 5 pairs, conspicuous abaxially as are reticulate veins, obscure adaxially. Inflorescences terminal, capitate, 5–15-flowered; peduncle 0.5–1 cm, grayish white pubescent. Calyx yellowish green, exterior sometimes purplish; tube ca. 10 × 1 mm, exterior densely grayish white pubescent; lobes 4, suborbicular, ca. 2 mm, outside pubescent, inside glabrous. Stamens 8, lower whorl inserted slightly above middle of calyx tube, upper whorl in throat; anthers oblong-ovoid, ca. 1 mm; upper ones exerted from calyx tube. Disk scale 1, linear-lanceolate, ca. 0.7 mm, apex sometimes 3-lobed. Ovary obovoid, ca. 2 mm, stipitate, densely pilose; style short; stigma capitate, flattened. Drupe narrowly ellipsoid, shortly stipitate, enclosed by persistent calyx. Fl. summer–autumn.

• Forests; 2600–3500 m. SW Sichuan, NW Yunnan.

37. Wikstroemia subcyclolepidota L. P. Liu & Y. S. Lian, Acta Phytotax. Sin. 34: 440. 1996.

亚环鳞堯花 ya huan lin rao hua

Daphne pampaninii (Rehder) Halda subsp. *subcyclolepidota* (L. P. Liu & Y. S. Lian) Halda.

Shrubs to 1 m tall. Branches turning brownish purple in second year, terete, slender, densely white strigose; leaf buds subglobose, white pubescent. Leaves subopposite, rarely alternate or opposite; petiole ca. 1 mm, densely pubescent; leaf blade elliptic or ovate-elliptic, 1.5–3 × 1.2–2 cm, thinly papery, membranous when dried, both surfaces appressed pubescent, base broadly cuneate to ± rounded, apex acute; lateral veins 3 or 4 per side, slender. Inflorescences terminal and subterminal, fasciculate, forming a thyrse, fascicles 1–6-flowered. Pedicel ca. 0.3 mm. Calyx yellowish green; tube 5–7 mm, exterior densely appressed pilose; lobes 4, oblong-ovate, ca. 1.5 mm, outside pilose. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl at throat; filaments to 0.2 mm; anthers oblong. Disk scale very broadly ovate in outline, ± amplexicaul, irregularly deeply 7–10-lobed. Ovary narrowly ovoid, ca. 2.5 mm, densely appressed hirsute; style very short. Immature drupe pubescent. Fl. Aug.

• Woods on hillocks; ca. 1600 m. E Gansu (Zhengning).

Wikstroemia subcyclolepidota is known to us only from the protologue. The almost amplexicaul disk scale and relatively slender, thyrse-like inflorescence seem extremely distinctive, and Halda's inclusion of this species within *W. pampaninii* is therefore not accepted.

38. Wikstroemia paxiana H. Winkler, Repert. Spec. Nov. Regni

Veg. Beih. 12: 442. 1922.

懋功堯花 mao gong rao hua

Daphne paxiana (H. Winkler) Halda.

Shrubs 0.3–0.5 m tall, branching dichotomous. Branches slender, strigose, glabrescent. Leaves mostly alternate, sometimes also a few opposite; petiole ca. 1 mm; leaf blade lanceolate, 2.5–3.5 × 0.4–0.6 cm, leathery to thickly papery, sparsely appressed puberulous when young, base narrowly cuneate, margin narrowly revolute, apex obtuse, mucronulate. Inflorescences axillary, 1- or 2-flowered. Calyx yellow; tube narrow, ca. 11 × 1–1.5 mm, 10-ribbed, exterior appressed puberulous; lobes 5, oblong, 3–4 mm, margin erose. Stamens 10, upper whorl in throat; anthers oblong, ca. 1 mm; upper ones slightly exerted from calyx tube. Disk scale 1, obovate, ca. 1 mm, entire. Ovary clavate, ca. 4 mm, apex strigose-puberulous; style obvious; stigma globose. Drupe reddish, ovoid, ca. 6 mm, apex pubescent.

• Sichuan.

39. Wikstroemia dolichantha Diels, Notes Roy. Bot. Gard. Edinburgh 5: 286. 1912.

一把香 yi ba xiang

Daphne dolichantha (Diels) Halda; *D. dolichantha* var. *effusa* (Rehder) Halda; *Diplomorpha dolichantha* (Diels) Hamaya; *D. dolichantha* var. *effusa* (Rehder) Hamaya; *D. dolichantha* var. *pubescens* (Domke) Hamaya; *Stellera circinata* Lecomte; *S. circinata* var. *divaricata* Lecomte; *Wikstroemia circinata* (Lecomte) Domke; *W. circinata* var. *divaricata* (Lecomte) Domke; *W. dolichantha* var. *effusa* (Rehder) C. Y. Chang; *W. dolichantha* var. *pubescens* Domke; *W. effusa* Rehder.

Shrubs 0.5–1 m tall, much branched. Branches erect, turning purple-red, terete, slender, grayish sericeous when young. Leaves alternate; petiole 1–1.5 mm, shortly pubescent; leaf blade dark vivid green adaxially, slightly paler abaxially, oblong to lanceolate, 1.5–3 × 0.4–1 cm, papery, sparsely puberulous, base broadly cuneate, apex shortly acuminate; lateral veins very oblique, 3–5 pairs, conspicuous on both surfaces. Inflorescences terminal and subterminal, spicate, densely many flowered, pedunculate, sericeous-puberulous. Pedicel absent. Calyx yellow; tube narrowly cylindrical, 9–11 mm, exterior sericeous, rarely glabrous; lobes 5, oblong, asymmetric, 1–2 mm, sericeous-puberulous, apex obtuse. Stamens 10, lower whorl inserted above middle of calyx tube; filaments ca. 0.2 mm; anthers ca. 1 mm; upper ones slightly exerted from calyx tube. Disk scale 1, linear-lanceolate, margin incised. Ovary cylindrical, 3–4 mm, upper part pubescent; style short; stigma globose. Drupe fusiform, enclosed by persistent calyx. Fl. between summer and autumn, fr. end of autumn.

• Roadsides, shrubby slopes; 1300–2300 m. Sichuan, Yunnan.

40. Wikstroemia pilosa Cheng, Contr. Biol. Lab. Sci. Soc. China 8: 140. 1932.

多毛堯花 duo mao rao hua

Daphne kulingensis (Domke) Halda; *Wikstroemia kulingensis* Domke; *W. pilosa* var. *kulingensis* S. C. Huang; *W. sericea* Domke (1932), not Christopherson (1931).

Shrubs to 1 m tall. Primary branches turning yellow or brownish in second year, terete, slender, irregularly rugulose, pilose or sericeous, glabrescent. Leaves opposite or subopposite, rarely alternate; leaf blade dark green adaxially, paler abaxially, ovate, elliptic-ovate, or elliptic, 1.5–4 × 0.7–2 cm, membranous, abaxially sericeous, adaxially pilose, base broadly cuneate, rounded, or truncate, margin revolute, apex acute or shortly acuminate; lateral veins 3–5 pairs, raised. Inflorescences terminal and axillary, capitate becoming spicate, ca. as long as or longer than leaves, puberulous; peduncle 0.5–1 cm. Pedicel short. Calyx yellow; tube cylindrical, 8–10 mm, 10-ribbed, exterior densely pilose; lobes 5, ovate, 1–1.2 × ca. 0.4 mm, apex rounded. Stamens 10, lower whorl inserted above middle of calyx tube, upper whorl near throat, subsessile; anthers oblong, ca. 1 mm; upper ones almost exerted from calyx tube. Disk scale 1, linear, 1–2 mm. Ovary clavate, ca. 2.5 mm, pilose; style ca. 0.4 mm; stigma capitate. Drupe reddish, fusiform, ca. 8 mm, enclosed in persistent calyx. Fl. autumn, fr. winter.

• Open bushy slopes, rocks, roadsides. Anhui, Guangdong, Hunan, Jiangxi, Zhejiang.

Plants with a more sericeous indumentum have been separated as *Wikstroemia pilosa* var. *kulingensis*.

41. *Wikstroemia fargesii* (Lecomte) Domke, Notizbl. Bot. Gart. Berlin-Dahlem 11: 361. 1932.

城口堇花 cheng kou rao hua

Stellera fargesii Lecomte, Notul. Syst. (Paris) 3: 211. 1916; *Daphne fargesii* (Domke) Halda.

Shrubs. Branches slightly reddish or brownish gray, terete, glabrous. Leaves opposite to subopposite; petiole 0.5–1 mm; leaf blade dull green adaxially, slightly paler abaxially, elliptic, suborbicular, or oblong-lanceolate, 1–2.2 × 0.8–2 cm, papery, both surfaces glabrous, base broadly cuneate, apex rounded or obtuse; lateral veins 3 or 4 pairs, ± conspicuous. Inflorescences terminal on dichotomously much branched lateral branches, capitate, 7–10-flowered; peduncle 0.2–1 cm. Pedicel very short, obscure, articulate at base. Calyx yellow; tube trumpet-shaped, slightly swollen at base, 10–12 mm, exterior glabrous; lobes 5, ovate-oblong, 1.5–2 mm. Stamens 10; filaments ca. 0.3 mm; anthers subsagittate, ca. 1 mm, included within calyx tube. Disk scale 1, linear, apex entire or slightly retuse. Ovary obovoid-ellipsoid, apex strigose; style short; stigma red, globose. Drupe orange-red, ovoid-pyriform, ca. 8 mm, base rounded, apex acuminate.

• Dry bushy hills, calcareous rocks; 1200–1600(–2000) m. Chongqing (Chengkou).

42. *Wikstroemia fuminensis* Y. D. Qi & Yin Z. Wang, Novon 14: 324. 2004.

富民堇花 fu min rao hua

Shrubs 0.8–1.2 m tall. Branches pale green, turning dark purple-brown, glabrous. Leaves opposite or subopposite; petiole 1–2 mm; leaf blade ovate or broadly so, 1.7–3 × 0.7–1.4 cm,

papery, both surfaces glabrous, midrib impressed adaxially, elevated abaxially, base rounded or slightly attenuate, margin slightly revolute in dry state, apex acute, rarely obtuse; lateral veins 5–7 pairs, conspicuous abaxially. Inflorescences terminal, capitate, 6–10-flowered; peduncle absent. Pedicel ca. 1 mm. Calyx yellow; tube cylindrical, 11–13 mm, exterior glabrous; lobes 5, ovate to ovate-elliptic, 2–2.5 mm, apex obtuse. Stamens 10, lower whorl inserted slightly above middle of calyx tube, upper whorl in throat; anthers linear. Disk scale 1, ca. 2 mm, membranous, apex irregularly deeply or shallowly lobed. Ovary ellipsoid, glabrous; style ca. 0.2 mm; stigma globose, papillose. Fruit not seen.

• Shrubby slopes; ca. 2700 m. C Yunnan (Fumin).

This species needs careful comparison with the poorly known *Wikstroemia fargesii*. The original authors also compared it with *W. huidongensis*.

43. *Wikstroemia linearifolia* H. F. Zhou ex C. Y. Chang, Guihaia 6: 270. 1986.

线叶堇花 xian ye rao hua

Daphne zhouana Halda.

Shrubs 0.6–0.8 m tall, densely branched. Branches turning gray or grayish brown or pale yellow, angular, grayish pubescent, glabrous by second year. Leaves alternate, dense; petiole ca. 1 mm; leaf blade dark green adaxially, paler abaxially, linear, 0.6–1.5 × 0.1–0.15 cm, both surfaces glabrous, base tapering into petiole, margin revolute, apex acute or slightly obtuse; midrib raised abaxially, concave adaxially; lateral veins obscure. Inflorescences terminal, fascicled, 3(–5)-flowered; peduncle absent. Pedicel ca. 3 mm, grayish pubescent. Calyx yellow; tube narrowly tubular, ca. 10 mm, exterior glabrous; lobes 5, broadly ovate or oblong-lanceolate, 3–4 × 2–3 mm, conspicuously veined, apex slightly obtuse. Stamens 10, lower whorl inserted above middle of calyx tube, upper whorl in throat; filaments 1–1.2 mm; anthers linear-oblong; upper ones exerted from calyx tube. Disk scale 1, broadly oblong, apex erose. Ovary clavate, upper part hairy; style short; stigma swollen, globose. Drupe semidry, brownish yellow, ca. 5 mm.

• Rocky slopes; 2800–3300 m. Sichuan (Xinlong).

44. *Wikstroemia scytophylla* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 286. 1912.

革叶堇花 ge ye rao hua

Daphne scytophylla (Diels) Halda.

Shrubs evergreen, 0.5–3 m tall, densely branched. Branches pale yellowish green, turning purplish or grayish brown, nearly 4-angled, glabrous. Upper leaves usually opposite; petiole short, ca. 1 mm, glabrous; leaf blade whitish green abaxially, oblanceolate to oblong, 2–4 × 0.3–1.2 cm, leathery, both surfaces glabrous, base cuneate to broadly cuneate, apex apiculate; lateral veins at narrow angle to midrib, obscure abaxially, conspicuous adaxially. Inflorescences terminal or axillary, racemose, solitary, usually pendulous at anthesis; peduncle 2–4 cm, rachis elongated during anthesis, slightly thickened and succulent, stouter and stronger than peduncle, glabrous; rachis

conspicuously scarred after fruit shed. Pedicel ca. 1 mm, articulate, glabrous. Calyx yellow; tube narrowly cylindrical-trumpet-shaped, ca. 10×1 mm, exterior glabrous; lobes 5, ovate, ca. 1 mm, margin undulate, apex obtuse. Stamens 10, lower whorl inserted above middle of calyx tube, upper whorl in throat; filaments short; anthers oblong, 1–1.2 mm, included within calyx tube. Disk scale 1, oblong-ovate, ca. 0.5 mm. Ovary fusiform, ca. 4 mm, sparsely sericeous-pubescent; style short; stigma capitate. Drupe brownish purple, ovoid, ca. 5 mm, base narrowed, enclosed by persistent calyx. Fl. between summer and autumn, fr. winter.

• Dry shrubby slopes, on limestone; 1900–3000 m. Sichuan, Xizang, Yunnan.

45. Wikstroemia huidongensis C. Y. Chang, Bull. Bot. Res., Harbin 6(4): 145. 1986.

会东堇花 hui dong rao hua

Daphne huidongensis (C. Y. Chang) Halda.

Shrubs evergreen, 1–2 m tall. Branches yellowish green, turning purple-brown when older, terete, slender, glabrous, leaf scars closely spaced, prominent, suborbicular; leaf buds small, white pubescent when young. Leaves opposite; petiole ca. 1 mm, glabrous or glabrescent; leaf blade deep green adaxially, paler abaxially, broadly elliptic or suborbicular, $2-3 \times 1-2$ cm, thinly leathery, both surfaces glabrous, base rounded or broadly cuneate, margin revolute, apex rounded, rarely rounded-obtuse, often apiculate; lateral veins 6–12 pairs, conspicuous adaxially. Inflorescences terminal, spicate, 3–7-flowered; peduncle 0.7–1 cm, glabrous. Pedicel 0.5–1 mm. Calyx yellow; tube narrowly tubular, $8-10 \times$ ca. 1 mm, base slightly inflated, exterior glabrous; lobes 5, oblong, ca. 2 mm, margin slightly erose, apex rounded or truncate. Stamens 10, lower whorl inserted above middle of calyx tube, upper whorl in throat; filaments very short; anthers yellow, narrowly oblong, ca. 1.8 mm; upper ones slightly exerted from calyx tube. Disk scale 1, linear, ca. 1.8 mm, apex deeply 2-lobed. Ovary subterete, ca. 2 mm, sessile or obscurely stipitate, glabrous, or rarely apex sparsely pubescent; style short to almost absent; stigma globose. Drupe purplish brown, ovoid, ca. 8 mm.

• Bushy slopes, rocks; 2000(–3000) m. Sichuan (Huidong), Yunnan.

46. Wikstroemia anhuiensis D. C. Zhang & X. P. Zhang in Y. J. Jin, Fl. Anhui 3: 646. Feb 1990.

安徽堇花 an hui rao hua

Daphne anhuiensis (D. C. Zhang & X. P. Zhang) Halda.

Shrubs to 0.6 m tall. Branches deep purple, slender, sparsely pubescent, soon glabrous; leaf buds ovoid, ca. 2 mm in diam., densely grayish white pubescent. Leaves opposite; petiole ca. 1 mm, glabrous; leaf blade green adaxially, light green abaxially, elliptic to narrowly elliptic, $0.6-1.6 \times 0.3-0.8$ cm, membranous, both surfaces glabrous, base cuneate or broadly cuneate, apex acute or rounded-obtuse; lateral veins 4 or 5 pairs. Inflorescences terminal, racemose, sometimes paniculate, 2–14-flowered; peduncle 0.7–1.1 cm, glabrous. Pedicel 1–1.2 mm, glabrous. Calyx white; tube tubular, with slightly swollen

base, 8–10 mm, exterior glabrous; lobes 5, broadly ovate, ca. 2 mm, margin entire, apex rounded, obtuse, or slightly acute. Stamens 10, lower whorl inserted above middle of calyx tube, upper whorl at throat; filaments very short; anthers narrowly oblong, ca. 1 mm. Disk scale 1, linear, ca. 1.5 mm. Ovary pyriform, 2–3 mm, pubescent, stipitate, stipe ca. 1 mm; style very short; stigma subglobose, ca. 0.3 mm in diam. Drupe brownish yellow, ovoid, ca. 8 mm.

• Open hills, rocks; 500–900 m. S Anhui (Shexian).

The same name was published two months later by the same authors with the same type (Acta Phytotax. Sin. 28: 159. Apr 1990).

47. Wikstroemia lamatsoensis Hamaya, Acta Horti Gothob. 26: 96. 1963.

金丝桃堇花 jin si tao rao hua

Wikstroemia androsaemifolia Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 60: 135. 1924, not Decaisne (1844); *Daphne lamatsoensis* (Hamaya) Halda.

Shrubs 0.4–0.8 m tall, densely branched. Branches brownish, stout and strong, 4-angled when young, glabrous; leaf buds white hirsute. Leaves opposite-decussate, closely spaced; petiole absent; leaf blade oblong to elliptic, $2-4.5 \times 1-2$ cm, leathery, both surfaces glabrous and glossy, base rounded or slightly cordate, apex obtuse to acuminate; veins white and raised on both surfaces; lateral veins 5–8 pairs, oblique, much branched. Inflorescences terminal, spicate, rarely branched, erect and strong, 5–8 cm, many flowered; peduncle 1–3 cm; rachis 2–5 cm. Pedicel 0.5–1 mm. Calyx yellow; tube narrow, ca. 13×1.5 mm, exterior glabrous or puberulous; lobes 5, oblong, 1.5–2 mm, apex rounded. Stamens 10, lower whorl inserted slightly above middle of calyx tube, upper whorl in throat; filaments ca. 0.7 mm; anthers oblong-elliptic, ca. 1.5 mm; upper ones exerted from calyx tube. Disk scale 1, linear, 1–2 mm, membranous, apex truncate or slightly retuse. Ovary obconic, ca. 4 mm, hirsute; style very short; stigma globose. Drupe red, globose, ca. 6 mm in diam. Fl. autumn.

• Valleys or sunny shrubby slopes in limestone areas; 2600–3200 m. NW Yunnan.

48. Wikstroemia trichotoma (Thunberg) Makino, Bot. Mag. (Tokyo) 11: 71. 1897.

白花堇花 bai hua rao hua

Shrubs evergreen, 0.5–2.5 m tall. Bark brown, rugose; main stem stout, strong, much branched; branches erect, glossy, slightly yellow, turning purple-red or reddish, extended, slender, glabrous. Leaves opposite; petiole ca. 0.2 cm; leaf blade brown adaxially when dried, light brown to whitish abaxially, ovate to ovate-lanceolate, $(0.8-1.2-3.5(-8) \times (0.5-1-2.2(-4))$ cm, thinly papery, both surfaces glabrous, base broadly cuneate, rounded, or truncate, apex acute; lateral veins 6–8(–11) pairs, slender, more conspicuous abaxially. Inflorescences terminal, erect, a panicle of spikes, rachis 0.2–1.5(–3.5) cm, few to 10(–26)-flowered, sparsely puberulous; peduncle 1–2.5 cm, often branched, glabrous. Pedicel 0.5–1 mm or obscure. Calyx yellow or white; tube 6.5–20 mm, exterior glabrous; lobes 5, broadly elliptic, 1.7–2 mm, margin undulate, apex obtuse. Stamens 10,

lower whorl inserted above ca. 1/3 way up calyx tube, upper whorl at throat; anthers linear, ca. 1 mm. Disk scale 1, linear or linear-oblong, ca. 1/2 as long as ovary, membranous, lobed or truncate. Ovary obovoid, 2–3 mm, stipitate, glabrous or apex sparsely puberulous; style short, ca. 0.5 mm; stigma globose, large. Drupe dry, ovoid, ca. 5 mm, usually glabrous, enclosed in persistent calyx. Fl. summer.

Open forests, among shrubs on limestone hills, shaded places, roadsides; ca. 600 m. Anhui, Guangdong, NC Guangxi, Hunan, Jiangxi, Zhejiang [Japan, S Korea].

This species has been misidentified by some authors as *Wikstroemia nutans*. There seem to be discrepancies between evergreen Chinese plants with white flowers and a single linear hypogynal scale and deciduous Japanese plants with larger leaves (to 8 × 3.5 cm), yellow flowers, and up to 3 dissected scales. We therefore recommend more detailed investigations.

- 1a. Calyx tube 6.5–7.5 mm; inflorescence rachis 0.2–1.5 cm, up to 10-flowered; ovary apex sparsely puberulous 48a. var. *trichotoma*
- 1b. Calyx tube to 20 mm; inflorescence rachis 0.8–3.5 cm, 8–26-flowered; ovary glabrous 48b. var. *flavianthera*

48a. Wikstroemia trichotoma var. trichotoma

白花堯花(原变种) bai hua rao hua (yuan bian zhong)

Queria trichotoma Thunberg, Trans. Linn. Soc. London 2: 329. 1794; *Daphne alba* (Handel-Mazzetti) Halda; *D. trichotoma* (Thunberg) Halda; *Diplomorpha dolichantha* (Diels) Hamaya var. *pilosa* (Hamaya) Hamaya; *D. ellipsocarpa* (Maximowicz) Nakai; *D. japonica* (Siebold & Zuccarini) Endlicher; *D. trichotoma* (Thunberg) Nakai; *D. trichotoma* f. *pilosa* Hamaya; *Passerina japonica* Siebold & Zuccarini; *Stellera japonica* (Siebold & Zuccarini) Meisner; *Wikstroemia alba* Handel-Mazzetti; *W. ellipsocarpa* Maximowicz; *W. japonica* (Siebold & Zuccarini) Miquel.

Leaf blade with 6–8 pairs of lateral veins. Inflorescence rachis 0.2–1.5 cm, up to 10-flowered. Calyx tube 6.5–7.5 mm. Disk scale linear, lobed. Ovary ca. 3 mm, apex sparsely puberulous.

Open forests, shaded places, roadsides; ca. 600 m. Anhui, Guangdong, Hunan, Jiangxi, Zhejiang [Japan, S Korea].

48b. Wikstroemia trichotoma var. flavianthera S. Y. Liou, Acta Phytotax. Sin. 42: 265. 2004.

黄药白花堯花 huang yao bai hua rao hua

Leaf blade with 6–11 pairs of lateral veins. Inflorescence rachis 0.8–3.5 cm, 8–26-flowered. Calyx tube to 20 mm. Disk scale linear-oblong, apex truncate or slightly emarginate. Ovary ca. 2 mm, glabrous.

- Among shrubs on limestone hills. NC Guangxi (Luocheng).

The protologue of this variety emphasized the presence of yellow anthers but there is rather little information on anther color within the genus, including *Wikstroemia trichotoma*, and available images of Korean material also show flowers with yellow anthers. However, the apparently much larger calyx and isolated distribution do suggest that this taxon is worth maintaining.

49. Wikstroemia leptophylla W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 12: 229. 1920.

细叶堯花 xi ye rao hua

Shrubs 0.5–1.5 m tall, densely branched. Branches green, becoming grayish or brownish with age, 4-angled, slender, glabrous. Leaves opposite or alternate; petiole almost absent; leaf blade green or black-purple adaxially, slightly paler abaxially, linear or linear-lanceolate, 2–6 × 0.3–0.6 cm, stiffly papery, abaxially smooth, adaxially rugose when dried, both surfaces glabrous, base gradually narrowed, margin revolute in dry conditions, apex ± acute; midrib raised abaxially, lateral veins obscure or conspicuous, 5 or 6 pairs. Inflorescences terminal and subterminal, racemose, 3–7 cm, often 10–20-flowered; peduncle 2–3 cm. Pedicel ca. 1 mm, articulate. Calyx yellowish green, exterior sometimes very dark; tube narrowly cylindrical, 10–13 × ca. 2 mm, exterior glabrous; lobes 5, ovate-oblong, ca. 1.5 mm, apex obtuse-rounded. Stamens 10, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments much shorter than anthers; anthers ca. 1 mm; upper ones exerted from calyx tube. Disk scale 1, linear, apex acute. Ovary oblong, 3–4.5 mm, base slightly narrowed, apex pubescent; style ca. 0.5 mm; stigma globose, papillose. Drupe reddish, ovoid, ca. 8 mm. Fl. and fr. winter.

- Forests, shaded places, shrubby slopes, on limestone; 1700–2900(–3400) m. Sichuan, Yunnan.

- 1a. Leaves opposite, lateral veins obscure; inflorescence less branched; calyx yellowish green 49a. var. *leptophylla*
- 1b. Leaves usually alternate, lateral veins conspicuous; inflorescences much branched; calyx exterior deep brown-purple to almost black 49b. var. *atroviolacea*

49a. Wikstroemia leptophylla var. leptophylla

细叶堯花(原变种) xi ye rao hua (yuan bian zhong)

Daphne leptophylla (W. W. Smith) Halda.

Leaves opposite; leaf blade adaxially green when dried, lateral veins obscure. Inflorescences less branched. Calyx yellowish green; tube 10–13 mm.

- Forests, shaded places, shrubby slopes; 1700–2900(–3400) m. Sichuan, Yunnan.

49b. Wikstroemia leptophylla var. atrovioleacea Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 60: 135. 1924.

黑紫堯花 hei zi rao hua

Daphne leptophylla (W. W. Smith) Halda var. *atroviolacea* (Handel-Mazzetti) Halda.

Leaves usually alternate; leaf blade firm, adaxially black-purple when dried, lateral veins conspicuous. Inflorescences much branched. Calyx exterior deep brown-purple to almost black, interior yellowish green; tube ca. 10 mm.

- Shrubby slopes, on limestone; below 2400 m. Yunnan.

