

3. DAPHNE Linnaeus, Sp. Pl. 1: 356. 1753.

瑞香属 rui xiang shu

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Farrerria I. B. Balfour & W. W. Smith ex Farrer; *Pentathymelaea* Lecomte.

Shrubs or subshrubs, evergreen or deciduous. Branches glabrous or pubescent. Leaves mostly alternate, sometimes opposite; petiole short. Inflorescence usually terminal, sometimes axillary, capitate or shortly racemose, sometimes paniculate, racemose, or spicate, with or without involucre; peduncle short or absent. Flowers bisexual or unisexual (plants sometimes dioecious), 4- or 5-merous. Calyx tube white, pink, or yellow, rarely mauve, campanulate, cylindric, or slightly funnel-shaped, exterior glabrous or pubescent; lobes 4 or 5, erect or spreading, alternately longer and shorter. Petaloid appendages absent. Stamens twice as many as calyx lobes, in two series; filaments short or absent; anthers oblong, included; connectives indistinct. Disk absent or annular, cup-shaped, sometimes elongated on one side. Ovary usually sessile or slightly stipitate, ovoid, 1-loculed; style terminal, short; stigma capitate. Fruit a succulent berry or dry and leathery, sometimes enclosed by persistent calyx, sometimes naked, usually red or yellow. Seed testa crustaceous, endosperm scanty or absent; cotyledons fleshy.

About 95 species: Asia, Europe; 52 species (41 endemic) in China.

Species of *Daphne* have long been valued by gardeners for their extremely fragrant flowers.

See the comments made in the account of the previous genus, *Wikstroemia*, on the problems of distinguishing *Daphne* and *Wikstroemia*. Halda (Genus *Daphne*. 2001) also included *Eriosolena* and *Rhamnoneuron* within *Daphne*.

Daphne argyi H. Léveillé is a synonym of *Myrica rubra* Siebold & Zuccarini in the Myricaceae (see Fl. China 4: 276. 1999). *Daphne bodinieri* H. Léveillé (1914, not 1915) is a synonym of *Alyxia schlechteri* H. Léveillé in the Apocynaceae (see Fl. China 16: 162. 1995).

1a. Flowers 5-merous.

2a. Inflorescences always axillary; calyx white; hypogynal disk annular 1. *D. axillaris*

2b. Inflorescences mostly terminal, often on lateral branches, sometimes also axillary; calyx mostly yellow or golden-yellow; hypogynal disk lateral to ovary.

3a. Upper whorl of stamens inserted at or below middle of calyx tube.

4a. Primary branches strigose; leaf blade 1–1.8 × 0.2–0.4 cm; calyx tube exterior glabrous 2. *D. rosmarinifolia*

4b. Primary branches finely pubescent; leaf blade 2.5–8 × 0.6–2.2 cm; calyx tube exterior sericeous.

5a. Calyx tube 10–14 mm, slender, obliquely ascending; inflorescences shortly spicate, ebracteate 3. *D. gemmata*

5b. Calyx tube 8–9 mm, broad, erect; inflorescences capitate or fascicled, bracteate, bracts leaflike, caducous 4. *D. gracilis*

3b. Upper whorl of stamens inserted at or close to mouth of calyx tube.

6a. Calyx tube exterior glabrous.

7a. Leaf blade linear to linear-oblong, lateral veins obscure 7. *D. angustiloba*

7b. Leaf blade ovate to obovate or oblong-lanceolate to broadly elliptic, lateral veins visible.

8a. Inflorescence few- to several flowered, peduncle 1–3 cm; young stems glabrous 5. *D. esquirolii*

8b. Inflorescence 2- or 3-flowered, peduncle shorter than 0.3 cm; young stems densely appressed hirsute 11. *D. penicillata*

6b. Calyx tube exterior hairy.

9a. Calyx tube 9–12 mm.

10a. Branches short, rather stout; plant deciduous 8. *D. modesta*

10b. Branches long, slender; plant evergreen 12. *D. tenuiflora*

9b. Calyx tube 4–7 mm.

11a. Leaf blade 5–9.5 × 1.5–3 cm; pedicel 0.5–1 mm 6. *D. pedunculata*

11b. Leaf blade 0.8–3 × 0.15–1.6 cm; pedicel absent.

12a. Leaf blade linear or linear-oblong, 8–10 × 1.5–2.5 mm; calyx tube 4–5 mm, lobes ca. 2 mm 9. *D. holosericea*

12b. Leaf blade obovate or broadly elliptic, 10–30 × 5–16 mm; calyx tube 6–7 mm, lobes 4–5 mm 10. *D. myrtilloides*

1b. Calyx lobes 4.

13a. Calyx exterior glabrous (rarely with few scattered hairs), often caducous after anthesis.

14a. Leaves at least partly truly opposite; calyx deep yellow to orange; ovary glabrous 13. *D. aurantiaca*

14b. Leaves alternate, rarely subopposite; calyx usually white or pink to purplish red, rarely yellow or greenish yellow.

15a. Calyx lobes 0.2–2.5 mm; tube 3–6 mm, often urceolate (Taiwan).

16a. Leaf blade apically obtuse or obtuse-apiculate.

17a. Leaf blade 15–20 mm wide; petiole 3–9 mm; calyx tube campanulate 16. *D. arisanensis*

- 17b. Leaf blade 3–4 mm wide; petiole ± absent; calyx tube urceolate 17. *D. morrisonensis*
- 16b. Leaf blade apically emarginate or retuse.
- 18a. Plants ca. 0.2 m tall; stems brown; calyx tube urceolate; leaf blade 7–10(–14) mm wide 18. *D. nana*
- 18b. Plants to 2 m tall; stems yellowish green; calyx tube cylindrical; leaf blade 10–15 mm wide 19. *D. chingshuishaniana*
- 15b. Calyx lobes 2.5–12 mm; tube (5–)6–16 mm, cylindrical (mainland China).
- 19a. Calyx yellow, yellow-green, or green; inflorescence ebracteate.
- 20a. Petiole very short to absent; inflorescences terminal on long, slender branches; calyx yellow 20. *D. giraldii*
- 20b. Petiole 3–10 mm; inflorescences terminal on very short lateral branchlets, superficially apparently axillary; calyx yellowish green 21. *D. pseudomezereum*
- 19b. Calyx white or pink to purplish red; inflorescence bracteate.
- 21a. Calyx tube 5–8 mm, shorter than or equal to lobes.
- 22a. Bracts 1.5–3 cm; leaf blade 6–10 × 2.5–3.2 cm 22. *D. grueningiana*
- 22b. Bracts 0.5–0.8 cm; leaf blade 1.4–4(–7) × 0.6–1.4 cm 23. *D. retusa*
- 21b. Calyx tube (6–)9–13 mm, usually longer than lobes (ca. as long in *D. odora*).
- 23a. Branchlets glabrous; calyx lobes 6–12 mm, ca. as long as tube, base auriculate 24. *D. odora*
- 23b. Branchlets pubescent at least when young; calyx lobes 5–8(–10) mm, clearly shorter than tube, base not auriculate.
- 24a. Branchlets turning purplish red to purplish brown; calyx white, lobes acute or acuminate 25. *D. acutiloba*
- 24b. Branchlets turning yellowish brown or brownish gray to gray; calyx white or pale pink, exterior flushed purplish, lobes obtuse, rarely acuminate.
- 25a. Hypogynal disk shallowly cup-shaped, margin entire; ovary apically gray pubescent, stigma squamate 26. *D. limprichtii*
- 25b. Hypogynal disk annular, margin fringed; ovary glabrous, stigma not squamate 27. *D. tangutica*
- 13b. Calyx tube exterior hairy.
- 26a. Calyx bluish purple, lilac, or lavender, lobes 4–7(–10) mm, almost as long as tube; inflorescences mostly produced before leaves, sessile on very short lateral branches, less often pedunculate, terminal on long shoots and/or axillary 14. *D. genkwa*
- 26b. Calyx white, green, yellow, pink, or if purplish, then with lobes shorter than tube; inflorescences produced after leaves, terminal on normal stems or truly axillary.
- 27a. Leaves mostly opposite or subopposite, sometimes also alternate 15. *D. jinzhaiensis*
- 27b. Leaves mostly alternate, rarely also subopposite, very rarely a few opposite.
- 28a. Inflorescences axillary.
- 29a. Calyx white; leaf blade 1.5–4.5 × 0.6–1.8 cm; fruit apically rounded or subacute 28. *D. championii*
- 29b. Calyx purple-red; leaf blade 5–11 × 2–3 cm; fruit apically acuminate-apiculate 29. *D. rhynchocarpa*
- 28b. Inflorescences terminal, sometimes also axillary, sometimes on short lateral branches.
- 30a. Calyx lobes 12–13 mm; calyx white with yellow center; creeping shrublet to 30 cm 39. *D. macrantha*
- 30b. Calyx lobes 2.5–9(–11) mm; calyx not white or if white without yellow center; shrub 50–200 cm or taller.
- 31a. Leaf blade abaxially persistently hairy, sometimes only at apex.
- 32a. Calyx yellow, tube 8–15 mm; hypogynal disk square, lateral 31. *D. erosiloba*
- 32b. Calyx green, reddish, or purplish red, tube 3–8 mm; hypogynal disk cupular or annular, symmetric.
- 33a. Leaf blade linear or linear-oblong, 1.5–2.5 mm wide; calyx green, tube 3–6 mm 32. *D. wangiana*
- 33b. Leaf blade elliptic, oblong, oblong-lanceolate, or obovate-elliptic, 3–25 mm wide; calyx reddish or purplish red with paler purple-pink or white lobes.
- 34a. Calyx lobes 2.5–3 mm, much shorter than tube; leaf blade membranous, rarely thinly papery 23. *D. retusa*
- 34b. Calyx lobes 6–9 mm, ca. as long as or longer than tube; leaf blade leathery 30. *D. leishanensis*
- 31b. Leaf blade abaxially glabrous except sometimes when extremely immature.
- 35a. Inflorescences without involucre bracts.
- 36a. Calyx purplish red, tube ca. 4 mm 33. *D. purpurascens*
- 36b. Calyx white or cream, 8–12 mm.
- 37a. Leaf blade 5–13 × 1.6–3.5(–5) cm, apex long acuminate; calyx tube ca. 15 mm 38. *D. sureil*
- 37b. Leaf blade 1.5–6(–9) × 0.6–1.5(–2) cm, apex obtuse or acute, rarely apiculate or retuse; calyx tube 8–12(–14) mm.
- 38a. Peduncle very short to absent; plant deciduous; calyx tube 10–12 mm; lobes 6–8 × 4–5 mm, obtuse, apiculate 34. *D. altaica*
- 38b. Peduncle 3–10 mm; plant evergreen; calyx tube 8–10(–14) mm; lobes 2–2.5(–3.5) mm wide, acuminate.

- 39a. Leaf blade papery; peduncle 8–10 mm; drupe 8–12 mm 35. *D. longilobata*
 39b. Leaf blade leathery; peduncle ca. 3 mm; drupe ca. 5 mm 36. *D. depauperata*
- 35b. Inflorescences with involucre bracts.
- 40a. Hypogynal disk lobed or laciniate.
- 41a. Petiole 4–12 mm; inflorescences terminal and axillary.
- 42a. Calyx lobes 5–7 mm; leaf blade lateral veins 8–12 pairs; disk 2-lobed, each lobe 2-fid at apex 40. *D. yunnanensis*
 42b. Calyx lobes 3–4 mm; leaf blade lateral veins 12–16 pairs; disk cup-shaped, irregularly laciniate 41. *D. laciniata*
- 41b. Petiole 0.5–2 mm; inflorescences strictly terminal.
- 43a. Leaf blade 2–5 × 0.8–1.5 cm, lateral veins 5 or 6 pairs; calyx tube 10–11 mm 42. *D. tripartita*
 43b. Leaf blade 5–15 × 2–4 cm, lateral veins 6–10 pairs; calyx tube 6–8 mm 43. *D. jinyunensis*
- 40b. Hypogynal disk entire, sometimes very narrow, or margin undulate or undulate-serrate.
- 44a. Calyx at least partly purplish red or pink.
- 45a. Involucre bracts 14–18 mm; calyx lobes 5–7 mm 48. *D. bholua*
 45b. Involucre bracts 4–7 mm; calyx lobes 3–5 mm.
- 46a. Pedicel 3–4 mm; calyx lobes 2-colored, adaxially white, abaxially 2 purple or dark maroon 52. *D. taylorii*
 46b. Pedicel 1–2.5 mm; calyx lobes uniformly colored.
- 47a. Branches hispid; pedicel ca. 2.5 mm; calyx overall ca. 14 mm; fruit ca. 6 mm 49. *D. xichouensis*
 47b. Branches sparsely tomentose; pedicel 1–1.4 mm; calyx overall 10–11 mm; fruit ca. 4 mm 50. *D. emeiensis*
- 44b. Calyx white or creamy-white.
- 48a. Calyx tube urceolate, 3–5 mm; leaf blade 0.8–1.6 cm wide, apex obtuse or rounded, usually slightly retuse 37. *D. breviflora*
 48b. Calyx tube cylindrical, (5–)8–15(–18) mm; leaf blade (0.7–)1.4–3.5 cm, apex often acute.
- 49a. Young branches tomentose.
- 50a. Peduncle ca. 2 mm; flowers not fragrant; anthers 1–2 mm 44. *D. papyracea*
 50b. Peduncle 3–6 mm; flowers fragrant; anthers ca. 3 mm 46. *D. longituba*
- 49b. Young branches sparsely hairy to glabrous.
- 51a. Branches initially angular, grayish yellow, later turning purplish brown or bright purple, sometimes sparsely hairy 45. *D. feddei*
 51b. Branches not angular, dark gray, dark purplish red or purplish brown, or brown, usually glabrous.
- 52a. Margins of leaf blade and bracts ciliate with a tuft of hairs at apex 51. *D. pachyphylla*
 52b. Margins of leaf blade and bracts not ciliate and without apical tufts.
- 53a. Bracts sparsely hairy; inflorescence 3–10(–12)-flowered 44. *D. papyracea*
 53b. Bracts glabrous; inflorescence usually 9–12-flowered 47. *D. kiusiana*

1. *Daphne axillaris* (Merrill & Chun) Chun & C. F. Wei, Acta Phytotax. Sin. 8: 264. 1963.

腋花瑞香 ye hua rui xiang

Wikstroemia axillaris Merrill & Chun, Sunyatsenia 5: 139. 1940.

Shrubs 2–5 m tall. Branches pale yellowish green, turning grayish brown, sparsely brown appressed pubescent. Leaves alternate; petiole 4–7 mm, appressed pubescent; leaf blade shiny green adaxially, paler abaxially, oblong to elliptic, 5–12 × (1.5–)2–4.5 cm, papery or subleathery, both surfaces glabrous or midrib sometimes sparsely pubescent abaxially, base broadly cuneate, apex caudate-acuminate; veins 8–10 pairs. Inflorescences axillary, 2–4(–8)-flowered; peduncle 1–2 mm; bracts absent. Pedicel absent. Calyx white; tube cylindrical, 6–10 mm, exterior pubescent; lobes 5, ovate, 2.5–3 mm, apex obtuse. Stamens 10, lower whorl inserted at middle of calyx tube, upper whorl just below lobes; filaments short; anthers oblong, ca. 1.5 mm; upper ones partly exerted from calyx tube. Disk annular,

pubescent, entire. Ovary ovoid, ca. 2.5 mm, densely pilose; style short; stigma capitate or shallowly discoid. Drupe black or purple, narrowly ovoid, 8–10 mm, puberulous. Fl. May–Jun, fr. Aug–Oct.

- Dense forests; 600–900 m. Hainan.

2. *Daphne rosmarinifolia* Rehder in Sargent, Pl. Wilson. 2: 549. Mar 1916.

华瑞香 hua rui xiang

Daphne clivicola Handel-Mazzetti; *Stellera chinensis* Lecomte; *S. diffusa* Lecomte (Jun 1916); *Wikstroemia clivicola* (Handel-Mazzetti) Domke; *W. diffusa* (Lecomte) Domke; *W. lecomteana* Domke; *W. rosmarinifolia* (Rehder) Domke (1932), not H. Winkler (1922).

Shrubs, often procumbent, evergreen, 0.3–1 m tall, densely branched. Branches yellowish green, turning brownish, angular, densely gray- or yellowish strigose. Leaves alternate; petiole ca. 1 mm, glabrous; leaf blade linear-oblong to obovate-

lanceolate, 1–2 × 0.2–0.5 cm, papery, both surfaces glabrous or pilose when young, base cuneate, margin revolute, ciliate, apex rounded or truncate, usually aristate; veins obscure. Inflorescences terminal, fasciculate, 2–8-flowered; peduncle absent; bracts caducous, linear-oblong or spatulate-oblong, 4–6 mm. Pedicel absent. Calyx yellow; tube cylindric, ± curved, 8–10(–12) mm, exterior glabrous; lobes 5, ovate or ovate-oblong, 3–5 mm, apex obtuse or rounded. Stamens 10, both whorls inserted below middle of calyx tube; filaments short; anthers oblong, 1.3–1.7 mm. Disk annular, irregularly lateral to ovary. Ovary ovoid, 2–2.5 mm, glabrous; style short, ca. 0.5 mm; stigma subcapitate. Drupe brownish yellow, ovoid, 5–6 mm. Fl. Apr–May, fr. Jul.

Shrubby slopes; 2500–3800 m. SW Gansu, SE Qinghai, NW and W Sichuan, Yunnan [Myanmar].

3. *Daphne gemmata* E. Pritzl, Bot. Jahrb. Syst. 29: 481. 1900.

川西瑞香 chuan xi rui xiang

Daphne ambigua Matsuda; *Wikstroemia gemmata* (E. Pritzl) Domke.

Shrubs normally deciduous, 0.3–1 m tall, much branched. Branches erect, broomlike, pale yellowish green, turning yellowish brown to gray-brown, pubescent. Leaves alternate, clustered apically; petiole 1–2 mm, pubescent; leaf blade obovate-lanceolate, 2.5–8 × 0.6–2.2(–3) cm, membranous, both surfaces sparsely pubescent, with apical tuft of hairs, base cuneate, apex obtuse-rounded; veins 7–12 pairs. Inflorescences terminal, condensed-spicate, 5–10-flowered; peduncle ca. 2 mm, pubescent; bracts caducous, ovate-rhomboid, ca. 5 mm, pubescent. Pedicel almost absent. Calyx yellow; tube curved-cylindric, 10–15 mm, slender, exterior sericeous; lobes 5, oblong-ovate, 4–5 × 2–3 mm, obtuse-subtruncate, pubescent apically. Stamens 10, both whorls inserted below middle of calyx tube; filaments short; anthers oblong, ca. 1 mm. Disk subcylindric to ± square, lateral to ovary, sometimes 2-lobed. Ovary ovoid, 1–2.5 mm, shortly stipitate, sparsely pubescent; style very short; stigma capitate. Drupe red, ellipsoid, 4–5 mm, often enclosed in persistent calyx. Fl. Apr–Sep, fr. Aug–Dec.

• Cliffs, dry sunny banks; 400–1500(–1800) m. NW and W Sichuan, N Yunnan.

4. *Daphne gracilis* E. Pritzl, Bot. Jahrb. Syst. 29: 480. 1900.

小娃娃皮 xiao wa wa pi

Wikstroemia domkeana H. L. Li; *W. gracilis* (E. Pritzl) Domke (1932), not Hemsley (1894).

Shrubs evergreen, 0.3–1(–1.5) m tall. Branches dense, ascending, yellowish brown or purplish, slender, densely grayish yellow tomentose; buds ovoid. Leaves alternate; petiole 1–3 mm; leaf blade bright green adaxially, paler abaxially, obovate, obovate-lanceolate, or oblong-lanceolate, 2–8 × 0.6–1.6 cm, thinly leathery or papery, both surfaces ciliate when young, glabrescent, base cuneate, margin slightly revolute, apex obtuse, rarely acute; veins 6–10 pairs, usually raised abaxially and obscure adaxially. Inflorescences terminal, subcapitate or fascicled, 3–8-flowered; peduncle very short, densely yellowish

green hirsute; bracts caducous, leaflike, broadly ovate, abaxially densely yellowish green sericeous, adaxially glabrescent, base cuneate, apex obtuse. Calyx yellow, suffused purplish, erect; tube narrowly cylindric, 8–9(–12) × 1.5–2 mm, exterior sericeous; lobes 5, ovate or ovate-oblong, (3–)4–5 × 2–3 mm, rounded, margin usually erose. Stamens 10, both whorls inserted below middle of calyx tube; filaments very short; anthers oblong, ca. 1 mm. Disk with 2 lobes, lateral to ovary. Ovary ovoid, 2–2.5 mm, glabrous; style short; stigma globose. Drupe greenish yellow, conic-ovoid, ca. 5 mm, enclosed in persistent calyx. Fl. Apr–May, fr. Jun–Aug.

• Shrubby slopes; 1000–1300 m. Chongqing.

5. *Daphne esquirolii* H. Lévillé, Bull. Acad. Int. Géogr. Bot. 25: 42. 1915.

穗花瑞香 sui hua rui xiang

Daphne leuconeura Rehder; *D. leuconeura* var. *mairei* (Lecomte) Rehder & H. Lévillé; *Stellera mairei* Lecomte; *Wikstroemia leuconeura* (Rehder) Domke; *W. mairei* (Lecomte) Domke.

Shrubs deciduous, 0.5–1.5 m tall, branching dichotomous. Branches sparsely pilose, quickly glabrescent; buds axillary, conspicuous. Leaves alternate; petiole 1–3 mm; leaf blade obovate or obovate-oblong, 2.5–8 × 1.4–3.5 cm, membranous, both surfaces glabrous, base cuneate, margin revolute, apex rounded or rarely subacute; veins 6–12 pairs, anastomosing at margins. Inflorescences terminal and axillary, spicate, to ca. 6 cm, several- to many flowered; peduncle 1–4 cm, stout, glabrous. Pedicel very short, glabrous. Calyx bright to orange yellow; tube narrowly cylindric, 8–15 mm, exterior glabrous; lobes 5, broadly ovate or broadly oblong-ovate, 3–5 × 3–3.5 mm, apex obtuse. Stamens 10; lower whorl inserted at middle of calyx tube, filaments 0.5–0.75 mm; upper whorl slightly below throat, filaments 0.2–0.5 mm and anthers slightly exerted; anthers oblong, ca. 2 mm. Disk ± square, lateral to ovary, apex truncate to deeply 2-lobed. Ovary subcylindric, 3–5 mm, sparsely tomentose; style very short; stigma capitate, depressed at apex, margin slightly lobed. Fruit not seen. Fl. May.

• Valleys, slopes; 700–2000(–3400) m. SW Sichuan, NE Yunnan.

6. *Daphne pedunculata* H. F. Zhou ex C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 89. 1985.

长梗瑞香 chang geng rui xiang

Daphne esquirolii H. Lévillé subsp. *pedunculata* (H. F. Zhou ex C. Y. Chang) Halda.

Shrubs evergreen, to 0.7 m tall. Branches tomentose. Leaves alternate; petiole 2–3 mm; leaf blade lanceolate or oblanceolate, 5–9.5 × 1.5–3 cm, papery, abaxially sericeous when young, base narrowly cuneate, margin sometimes slightly revolute, apex acute, rarely obtuse, usually apiculate; veins 11–14 pairs, obliquely ascending, anastomosing at margins. Inflorescences terminal, many flowered; peduncle yellowish green, ca. 10 mm, sericeous; bracts absent. Pedicel 0.5–1 mm. Calyx yellow; tube narrowly cylindric, 5–7 mm, exterior sparsely sericeous; lobes 5, oblong, 2.5–3 × 1.5–2 mm, apex obtuse-rounded.

Stamens 10, lower whorl inserted just above middle of calyx tube, upper whorl in throat; filaments ca. 1 mm; anthers linear-oblong, ca. 1.2 mm; upper ones slightly exerted from calyx tube. Disk ± square, lateral to ovary, ca. 0.6 mm, 2-lobed. Ovary ca. 3.5 mm (including stipe ca. 2 mm), stipitate, densely pilose; style short; stigma globose, papillose. Fruit not seen. Fl. Nov–Dec.

- Dry valleys, sandy shrubby slopes; ca. 400 m. SE Yunnan.

7. *Daphne angustiloba* Rehder in Sargent, Pl. Wilson. 2: 547. 1916.

狭瓣瑞香 *xia ban rui xiang*

Wikstroemia angustiloba (Rehder) Domke.

Shrubs evergreen, to 0.5 m tall. Branches erect, pale yellowish green, turning brownish or purplish, slender, sparsely pubescent. Leaves alternate; petiole 1–2 mm, glabrous; leaf blade dull green adaxially, paler abaxially, linear-oblong, 1–2.5 × 0.15–0.4 cm, subpapery, both surfaces glabrous, base narrowly cuneate, margin slightly revolute, apex acute or acuminate, apiculate; veins obscure. Inflorescences terminal, fasciculate, 2–7-flowered. Pedicel ca. 1 mm, glabrescent. Calyx yellow; tube 10–11 mm, very slender, exterior glabrous; lobes 5, narrowly elliptic-oblong or oblong-lanceolate, 4–5(–7) × 1–2 mm. Stamens 10, lower whorl inserted at or slightly above middle of calyx tube, upper whorl in throat; filaments ca. 1 mm; anthers oblong, ca. 1.2 mm. Disk ± square, lateral to ovary. Ovary ca. 3 mm, apex tomentose; style very short; stigma slightly lobed. Drupe brownish yellow, ovoid, ca. 5 mm. Fl. Jun–Jul.

High mountain forests; 3000–5000 m. SW and W Sichuan [Myanmar].

8. *Daphne modesta* Rehder in Sargent, Pl. Wilson. 2: 541. 1916.

瘦叶瑞香 *shou ye rui xiang*

Wikstroemia modesta (Rehder) Domke.

Shrubs deciduous, 0.3–0.5(–1.2) m tall. Branches pale yellowish gray, turning grayish, short, rather stout, pubescent when young. Leaves alternate; petiole ca. 1 mm, glabrous or sparsely pubescent; leaf blade bright green adaxially, paler abaxially, linear-oblong or narrowly elliptic, 1.5–3.5 × 0.3–0.7 cm, thickly papery, both surfaces glabrous or sometimes midrib sparsely pubescent abaxially, base cuneate, margin revolute, apex obtuse, sometimes minutely apiculate; veins obscure. Inflorescences terminal, rarely also axillary, fasciculate, several flowered; bracts absent. Pedicel ca. 1 mm, pubescent. Calyx golden-yellow; tube (8–)9–11 mm, slender, exterior sparsely pubescent; lobes 5, ovate or ovate-oblong, 3–4 × 2–2.5 mm, sparsely strigose, apex obtuse. Stamens 10, lower whorl inserted just above middle of calyx tube, upper whorl just below throat; filaments short; anthers oblong, ca. 2 mm. Disk ± square, lateral to ovary, apex undulate. Ovary obovoid-ellipsoid, ca. 2.5 mm, apex pubescent; style very short; stigma capitate. Drupe greenish yellow, ovoid, ca. 6 mm. Fl. Apr–Jun.

- Open bushy hills, rocky slopes; 2100–2900 m. W Sichuan, Yunnan.

9. *Daphne holosericea* (Diels) Hamaya, Acta Horti Gothob. 26: 85. 1963.

丝毛瑞香 *si mao rui xiang*

Shrubs evergreen, 0.3–1 m tall. Branches slender, grayish green sericeous. Leaves alternate or opposite to whorled, usually clustered at apices of branches; petiole very short to absent; leaf blade linear or linear-oblong, 0.8–1 × 0.15–0.25 cm, leathery or subleathery, abaxially densely gray sericeous when young, adaxially sericeous or glabrous, base cuneate, margin strongly revolute, apex apiculate; veins obscure. Inflorescences terminal, many flowered; bracts absent. Pedicel absent. Calyx exterior white, interior yellow; tube cylindrical, 4–5 × ca. 2 mm, exterior gray sericeous; lobes 5, ovate or triangular-ovate, ca. 2 mm, apex acuminate or obtuse. Stamens 10, lower whorl inserted just above middle of calyx tube, upper whorl just below throat; filaments short; anthers triangular-oblong, ca. 0.7 mm. Disk obliquely shallowly discoid, lateral to ovary, and irregularly lobed or 1–3-lobed. Ovary narrowly ovoid-conic or ovoid, ca. 2.5 mm, apex sericeous or papillose; style short, ca. 0.5 mm; stigma globose. Drupe dry, conic, enclosed in persistent calyx. Fl. Jul–Aug, fr. Sep–Oct.

- Among shrubs and herbs on slopes in dry valleys; 3000–3600 m. Sichuan, SE Xizang, W Yunnan.

- 1a. Leaf blade adaxially densely grayish sericeous when young; ovary narrowly ovoid-conic, apex sericeous 9a. var. *holosericea*
- 1b. Leaf blade adaxially glabrous; ovary ovoid, apex papillose 9b. var. *thibetensis*

9a. *Daphne holosericea* var. *holosericea*

丝毛瑞香(原变种) *si mao rui xiang* (yuan bian zhong)

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

Leaf blade with both surfaces densely grayish sericeous when young. Disk obliquely shallowly discoid, lateral to ovary, irregularly lobed. Ovary narrowly ovoid-conic, apex sericeous.

- Among shrubs and herbs on slopes in dry valleys; 3000–3600 m. W Sichuan, SE Xizang, W Yunnan.

9b. *Daphne holosericea* var. *thibetensis* (Lecomte) Hamaya, Acta Horti Gothob. 26: 87. 1963.

五出瑞香 *wu chu rui xiang*

Pentathymelaea thibetensis Lecomte, Notul. Syst. (Paris) 3: 214. 1916; *Wikstroemia eriophylla* H. Winkler; *W. thibetensis* (Lecomte) Domke.

Leaf blade leathery, abaxially sericeous, adaxially glabrous. Disk 1–3-lobed, apex of lobes ± further lobed. Ovary ovoid, apex papillose.

- Among shrubs and herbs on slopes in dry valleys; 3000–3400 m. SW Sichuan, SE Xizang, NW Yunnan.

10. *Daphne myrtilloides* Nitsche, Beitr. *Daphne*, 29. 1907.

乌饭瑞香 *wu fan rui xiang*

Farreria pretiosa I. B. Balfour & W. W. Smith ex Farrer; *Wikstroemia myrtilloides* (Nitsche) Domke; *W. pretiosa* (I. B. Balfour & W. W. Smith ex Farrer) Domke.

Shrubs deciduous, 0.1–0.3 m tall. Primary root fusiform, stout. Branches all basal, yellowish green, turning brownish or grayish, slender, densely appressed pubescent. Leaves alternate, clustered apically on branches, appearing whorled; petiole 1–2 mm, glabrous; leaf blade obovate or broadly elliptic, 1–3 × 0.4–1.6 cm, thinly papery or membranous, abaxially sparsely pilose on midrib, adaxially glabrous, base cuneate, margin slightly revolute, apex obtuse; veins 3–5 pairs. Inflorescences terminal, fasciculate, 2–5-flowered; bracts absent. Pedicel absent. Calyx yellow; tube cylindrical, 6–7[–?15] mm, slender, exterior sparsely sericeous; lobes 5, oblong, 4–5 mm, glabrous, apex obtuse or rounded. Stamens 10, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments short; anthers linear-oblong, 1–1.5 mm. Disk obovate-angular, lateral to ovary. Ovary ca. 2 mm, apex pubescent; style ca. 0.5 mm; stigma globose. Drupe brownish yellow, ovoid, ca. 5 mm. Fl. May.

- Open subalpine forests, stony fields. Gansu, Shaanxi, Shanxi.

11. *Daphne penicillata* Rehder in Sargent, Pl. Wilson. 2: 542. 1916.

岷江瑞香 *min jiang rui xiang*

Daphne flaviflora H. Winkler; *Wikstroemia flaviflora* (H. Winkler) Domke.

Shrubs 0.2–0.5 m tall, densely branched. Branches turning yellowish or grayish brown, angular, densely appressed hirsute when young; leaf buds ovoid, 3–5 cm, densely gray pubescent. Leaves alternate; petiole ca. 1 mm, glabrous or sparsely sericeous; leaf blade broadly elliptic, oblong-elliptic, or obovate, 0.7–2.5(–3) × 0.5–1.2(–1.5) cm, membranous, both surfaces glabrous except for tuft of hairs at apex and sometimes midrib sparsely appressed pubescent abaxially, base cuneate or subrounded, margin sometimes slightly revolute, apex obtuse, retuse, or emarginate, markedly apiculate; veins 5–7 pairs. Inflorescences terminal, fasciculate, 2- or 3-flowered; peduncle shorter than 0.3 cm; bracts ovate, densely pubescent; Pedicel absent or very short. Calyx golden-yellow; tube cylindrical, 7–10 mm, slender, exterior glabrous; lobes 5, narrowly oblong, 4–5 mm. Stamens 10, lower whorl inserted at middle of calyx tube, upper whorl slightly below throat; filaments very short; anthers oblong, ca. 1.5 mm. Disk ± square, lateral to ovary, ca. 0.5 mm. Ovary ca. 2.5 mm, apex pubescent; style 0.5–1.5 mm; stigma capitate, sparsely puberulous. Drupe brownish yellow, ovoid, ca. 5 mm. Fl. May–Jun.

- Forests, arid slopes among rocks; 1200–1700(–2500) m. Sichuan.

12. *Daphne tenuiflora* Bureau & Franchet, J. Bot. (Morot) 5: 151. 1891.

细花瑞香 *xi hua rui xiang*

Shrubs evergreen, 0.3–0.7 m tall. Branches long, slender, pubescent. Leaves alternate; petiole 1–1.5 mm; leaf blade lanceolate or oblong-elliptic, 2–5 × 0.4–1.2 cm, papery or mem-

branous, both surfaces glabrous or sometimes young leaves sparsely sericeous abaxially, base narrowly cuneate, margin slightly revolute, apex obtuse or rounded, usually apiculate; veins 5–8 pairs. Inflorescences terminal, condensed-racemose, several flowered; bracts absent. Flowers fragrant; pedicel ca. 1.5 mm, sparsely pubescent. Calyx pale yellow; tube cylindrical, 10–12 mm, slender, exterior glabrous or sparsely appressed pubescent; lobes (4 or)5, ovate, ovate-lanceolate, or oblong, 3–5 mm, margin usually incised, apex obtuse. Stamens 10, lower whorl inserted just above middle of calyx tube, upper whorl just below throat; filaments short; anthers oblong, ca. 1.6 mm. Disk ± square, lateral to ovary, divided to half depth. Ovary narrowly ovoid, stipitate, apex tomentose; style ca. 0.7 mm; stigma capitate. Fruit not seen. Fl. May–Jun.

- Forests, shrubby slopes; 2700–3500 m. SW Sichuan, NW Yunnan.

1a. Calyx tube exterior glabrous 12a. var. *tenuiflora*
 1b. Calyx tube exterior sparsely appressed
 pubescent 12b. var. *legendrei*

12a. *Daphne tenuiflora* var. *tenuiflora*

细花瑞香(原变种) *xi hua rui xiang* (yuan bian zhong)

Stellera tenuiflora (Bureau & Franchet) Lecomte; *Wikstroemia tenuiflora* (Bureau & Franchet) Domke.

Calyx tube exterior glabrous.

- Forests, shrubby slopes; 2700–3500 m. SW Sichuan, NW Yunnan.

12b. *Daphne tenuiflora* var. *legendrei* (Lecomte) Hamaya, Acta Horti Gothob. 26: 83. 1963.

毛细花瑞香 *mao xi hua rui xiang*

Stellera tenuiflora var. *legendrei* Lecomte, Notul. Syst. (Paris) 3: 209. 1916; *Wikstroemia tenuiflora* var. *legendrei* (Lecomte) Domke.

Calyx tube exterior sparsely appressed pubescent.

- Forests, shrubby slopes; ca. 3300 m. SW Sichuan.

13. *Daphne aurantiaca* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 285. 1912.

橙黄瑞香 *cheng huang rui xiang*

Daphne aurantiaca var. *callicola* (W. W. Smith) Halda; *D. callicola* W. W. Smith; *Wikstroemia aurantiaca* (Diels) Domke; *W. aurantiaca* var. *pulvinata* Domke; *W. callicola* (W. W. Smith) Domke.

Shrubs evergreen, 0.6–1.2 m tall. Main branches often prostrate; branches reddish to dark brown, glabrous. Leaves opposite or subopposite; petiole 1–2 mm; leaf blade obovate, ovate, or elliptic, sometimes also linear to linear oblong, 0.8–2.3 × 0.2–1.2 cm, subleathery, both surfaces glabrous, base cuneate or subrounded, margin revolute, apex obtuse or acute; lateral veins obscure. Inflorescences terminal, often on reduced lateral shoots, 2–5-flowered, glabrous; bracts leaflike, ovate or ovate-lanceolate, 2–5 × 1–1.5 mm, glabrous or sometimes pubescent, apex acuminate. Flowers fragrant; pedicel short, ca. 1

mm. Calyx deep yellow to orange; tube funnellform-cylindric, 8–11 mm, exterior glabrous; lobes 4, broadly ovate or ovate-elliptic, 2.5–4(–5) × 2–3 mm, apex obtuse or rounded. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl slightly below throat; filaments ca. 1 mm; anthers oblong. Disk ± square, lateral to ovary, ca. 1.2 mm, usually 2-fid, sometimes reduced to distinct scales. Ovary ovoid-ellipsoid, 2–3 mm, glabrous; style ca. 0.7 mm; stigma capitate. Drupe brownish yellow, ellipsoid, 3–5 × 2–3 mm. Fl. May–Jun, fr. Aug.

• Forests, shrubby slopes, often on ledges and faces of limestone cliffs; 2600–3500 m. SW Sichuan, NW Yunnan.

14. *Daphne genkwa* Siebold & Zuccarini, Fl. Jap. 1: 137. 1835.

芫花 yuan hua

Daphne fortunei Lindley; *D. genkwa* var. *fortunei* (Lindley) Franchet; *D. genkwa* f. *taitoensis* Hamaya; *Wikstroemia genkwa* (Siebold & Zuccarini) Domke.

Shrubs deciduous, 0.3–1 m tall. Branches many, yellowish green or purplish brown, densely yellowish sericeous. Leaves opposite, subopposite, or alternate; petiole almost absent to 2 mm, gray pubescent; leaf blade ovate, ovate-lanceolate, or elliptic-oblong, 3–4(–6) × (0.5–)1–2 cm, papery, abaxially sericeous, base broadly cuneate or rounded, apex acute or shortly acuminate; lateral veins 5–7 pairs. Inflorescences mostly lateral, produced before leaves, less often terminal on long shoots or axillary, 3–7(–15)-flowered; peduncle usually very short, better developed on later inflorescences. Flowers not fragrant; pedicel short, grayish yellow pubescent. Calyx bluish purple, lilac, or lavender; tube cylindric, 6–11 mm, slender, exterior sericeous; lobes 4, ovate or oblong, 5–6(–10) × ca. 4 mm, abaxially puberulous, apex rounded. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl below throat; filaments short; anthers ovoid-ellipsoid, ca. 1 mm, upper ones partly exerted from calyx tube; disk annular. Ovary obovoid, ca. 2 mm, densely yellow pubescent; style short or absent; stigma capitate. Drupe white to reddish, black when dry, ellipsoid, ca. 4 mm, enclosed in persistent calyx. Fl. Mar–May, fr. Jun–Jul.

Forests, shrubby slopes; 300–1000 m. Anhui, Fujian, Gansu, Guizhou, Hebei, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Zhejiang [Korea].

Daphne genkwa is a popular garden plant that can usually be easily identified by the precocious inflorescences of distinctively colored flowers (the “lilac daphne”), produced on very reduced lateral shoots such that they superficially appear to be axillary. However, it seems that there is sometimes a second flush of flowers produced later in the season, after the leaves, when the inflorescences are often pedunculate and sometimes axillary as well as clearly terminal, sometimes on long shoots. The leaf arrangement is very variable. The species is valued horticulturally, while the dried flower buds are used medicinally.

15. *Daphne jinzhaiensis* D. C. Zhang & J. Z. Shao, Bull. Bot. Res., Harbin 9(3): 37. 1989.

金寨瑞香 jin zhai rui xiang

Daphne genkwa Siebold & Zuccarini subsp. *jinzhaiensis* (D. C. Zhang & J. Z. Shao) Halda.

Shrubs deciduous, to 1 m tall. Branches slender, at first densely yellow tomentose, later grayish brown, glabrescent. Leaves opposite, subopposite, or alternate; petiole 2–2.5 mm, yellow pilose; leaf blade narrowly elliptic or lanceolate, 3–4.5 × 0.8–1.3 cm, thickly papery, adaxially glabrous, base cuneate, margin slightly revolute, apex acute; lateral veins 4 or 5 pairs. Inflorescences terminal, 3–5-flowered; peduncle 0.6–0.8 cm, densely yellowish tomentose. Pedicel short. Calyx dull purple; tube cylindric, 10–12(–15) mm, exterior densely yellowish tomentose; lobes 4, narrowly elliptic, 5–7 mm, apex rounded. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl in throat; filaments ca. 0.6 mm; anthers yellow, oblong, ca. 1.3 mm. Disk cupular, margin entire. Ovary ellipsoid, ca. 2 mm, densely yellow pubescent; style ca. 0.2 mm; stigma capitate. Drupe not seen. Fl. Jul.

• Anhui.

16. *Daphne arisanensis* Hayata, Icon. Pl. Formosan. 2: 126. 1912.

台湾瑞香 tai wan rui xiang

Shrubs evergreen, 2–3 m tall. Branches laxly spreading, grayish, slender, tomentose when young. Leaves alternate or subopposite; petiole 3–10 mm; leaf blade lanceolate or elliptic, 4.5–7 × 0.5–1.3(–2) cm, (membranous or) papery, both surfaces glabrous, base cuneate, margin slightly revolute, apex acuminate to obtuse. Inflorescences terminal, rarely also axillary, 2–7-flowered; bracts caducous, lanceolate, ca. 5 mm, margin long ciliate. Pedicel ca. 2 mm, articulate, sparsely puberulous below articulation. Calyx yellow, rarely creamy-white; tube campanulate, 4–6 mm, exterior glabrous; lobes 4, ovate-triangular, 1.5–2.5 × 1–2 mm, apex obtuse. Stamens 8, lower whorl inserted just above middle of calyx tube, upper whorl slightly below throat; filaments ca. 0.3 mm; anthers linear, ca. 1 mm. Disk annular, margin crenulate. Ovary oblong-ovoid, ca. 2 mm, glabrous; style short to almost absent; stigma capitate. Drupe (yellow or) red, ovoid, ca. 7 × 4 mm, apiculate.

• Forests. Taiwan.

17. *Daphne morrisonensis* C. E. Chang, Fl. Taiwan, ed. 2, 3: 773. 1993 [*“morrisonensis”*].

玉山瑞香 yu shan rui xiang

Shrubs evergreen, 2–3 m tall. Branches glabrous. Leaves alternate; petiole ± absent, glabrous; leaf blade linear or linear-oblongate, 4–7 × 0.3–0.4 cm, thick, both surfaces glabrous, base attenuate, margin slightly revolute, apex acuminate-caudate. Inflorescences terminal and axillary, to 7-flowered; peduncle absent; bracts caducous, linear-lanceolate. Pedicel short, glabrous. Calyx whitish; tube urceolate, 3–4 mm, exterior glabrous; lobes 4, ovate, outer lobes ca. 1.5 mm. Stamens 8; filaments absent. Anthers linear. Disk annular, very narrow. Ovary ovoid, sessile, glabrous; style short; stigma tiny, 2-lobed. Fruit not seen.

• Rocky slopes in open montane forests. Taiwan (Jiayi).

18. *Daphne nana* Tagawa, Acta Phytotax. Geobot. 5: 265. 1936.

小芫花 xiao yuan hua

Shrublets, ca. 0.2 m tall, branching dichotomous, trichotomous, or whorled. Branches brown, ± glossy, slender, glabrous. Leaves alternate; petiole very short; leaf blade oblong or oblong-lanceolate, rarely obovate-oblong, 1.5–2.5 × 0.7–1(–1.4) cm, thickly papery, both surfaces glabrous, base cuneate, apex rounded-emarginate. Inflorescences terminal, capitate, 5–8-flowered; bracts soon caducous, ovate-oblong, ca. 1 mm, margin ciliate toward apex. Pedicel ca. 2 mm, glabrous. Calyx white; tube cylindrical-urceolate, ca. 3 × 1.5 mm, exterior glabrous; lobes 4, broadly ovate, ca. 2 × 1.5 mm, 2 lobes with apex obtuse, alternating with 2 others with apex mucronate. Stamens 8, lower whorl inserted below middle of calyx tube, upper whorl near middle; filament shorter than anther; anthers narrowly oblong, ca. 0.5 mm, base emarginate, apex mucronate. Disk annular, very narrow. Ovary cylindrical-ovoid, ca. 2 × 0.7 mm, glabrous; style absent; stigma flattened-globose, slightly lobed. Drupe ovoid-apiculate, ca. 4 × 2 mm. Fl. and fr. Sep.

- E Taiwan (Hualian).

19. *Daphne chingshuishaniana* S. S. Ying, Coloured Illustr. Fl. Taiwan 3: 531. 1988.

高山瑞香 gao shan rui xiang

Shrubs evergreen, ca. 2 m tall. Branches erect, yellowish green, glabrous. Leaves alternate; petiole 2–3 mm, glabrous; leaf blade yellowish green, ovate or ovate-oblong to oblong, 1.5–2.5 × 1–1.5 cm, leathery, both surfaces glabrous, base rounded or cuneate, margin slightly revolute, apex emarginate. Inflorescences terminal on branchlets, fasciculate, 6–9-flowered; peduncle absent. Pedicel 1–1.5 mm, pubescent. Calyx tube 3–4 × 1–1.5 mm, exterior glabrous; lobes 4, triangular, 0.2–0.4 mm, apex acute. Stamens 8, inserted near middle of calyx tube; filaments ca. 0.1 mm; anthers basifixed, oblong, 0.4–0.6 mm. Disk annular, margin irregularly toothed. Ovary globose or oblong, 0.7–0.9 × 0.3–0.5 mm, glabrous; style absent or short, to 0.1 mm; stigma globose or capitate. Fruit not seen. Fl. Jun.

- Slopes with shrubs near mountain summits; ca. 2200 m. E Taiwan (Hualian).

20. *Daphne giraldii* Nitsche, Beitr. *Daphne*, 7. 1907 [“*giraldi*”].

黄瑞香 huang rui xiang

Shrubs deciduous, 0.45–0.8 m tall. Branches glabrous. Leaves alternate; petiole very short to absent; leaf blade oblanceolate, 3–6(–8) × 0.7–1.2(–1.5) cm, membranous or papery, both surfaces glabrous, base narrowly cuneate, apex obtuse, often apiculate; veins 8–10 pairs. Inflorescences terminal, capitate, 3–8-flowered; peduncle very short to absent; bracts absent. Flowers slightly fragrant; pedicel shorter than 1 mm. Calyx golden-yellow; tube cylindrical, 6–8(–10) × 2–3 mm, exterior glabrous; lobes 4, ovate-triangular, 3–4(–5) mm, glabrous, apex acute or acuminate. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl in throat; filaments ca. 0.5 mm; anthers oblong, ca. 1.2 mm. Disk shallow, entire. Ovary ellipsoid, glabrous; style absent; stigma capitate. Drupe red, ovoid or subglobose, 5–6(–8) mm. Fl. Jun, fr. Jul–Aug.

- Forest margins, open slopes with bushes; 1600–3100 m. Gansu, Heilongjiang, Liaoning, Qinghai, Shanxi, Sichuan, Xinjiang.

This species is widely cultivated and sometimes used as a root-stock for grafting.

21. *Daphne pseudomezereum* A. Gray, Mem. Amer. Acad. Arts, n.s., 6: 404. 1859 [“*pseudo-mezereum*”].

东北瑞香 dong bei rui xiang

Daphne japonica Siebold & Zuccarini (1846), not Thunberg (1792).

Shrubs deciduous, 0.15–0.4 m tall. Older stems with leaf scars large and closely spaced; branches short, stout, smooth, irregularly striped, glabrous. Leaves alternate; petiole 3–10 mm; leaf blade lanceolate or oblong-lanceolate, (3–)4–10 × 0.8–2 cm, membranous, both surfaces glabrous, base cuneate, apex obtuse; veins 8–12 pairs, anastomosing near margins. Inflorescences terminal, mainly on very reduced lateral shoots, fasciculate, 2–10-flowered; peduncle absent; bracts absent. Pedicel very short. Calyx yellowish green; tube 6–8 mm, exterior glabrous; lobes 4, 2.5–5.5 mm. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat. Disk annular. Drupe red, ovoid, 5–8 mm. Fl. Feb–Apr, fr. Jul–Aug.

Forests; 800–1600 m. Jilin, Liaoning [Japan, Korea].

The identity of Chinese material so named needs confirmation. Japanese material is described as a shrub to 1.5 m tall with glaucous leaves and ellipsoidal fruit ca. 8 mm. Halda (Genus *Daphne*, 11. 2001) further stated that this species is dioecious.

22. *Daphne gruenigiana* H. Winkler, Repert. Spec. Nov. Regni Veg. Beih. 12: 443. 1922.

倒卵叶瑞香 dao luan ye rui xiang

Shrubs evergreen, 0.3–1 m tall. Branches dichotomous or whorled, grayish white or grayish brown, turning brownish gray, thinly pubescent when young. Leaves alternate, usually clustered at tips of branches; petiole absent; leaf blade obovate-lanceolate or obovate-elliptic, 6–10 × 2–3.5 cm, thinly leathery, base narrowly cuneate, margin slightly revolute, apex obtuse to rounded, slightly retuse; veins 6–11 pairs, anastomosing near margins. Inflorescences terminal, (6–)8–12(–15)-flowered; peduncle present, hirsute; bracts 5–8, ovate-elliptic, 1–1.2 × 0.25–0.4 cm, glabrous or ciliate at least at apex, apex obtuse, slightly retuse. Pedicel short to almost absent. Calyx white; tube cylindrical, 9–14 mm, exterior glabrous; lobes 4, ovate or oblong, 8–11 × 3–4 mm, almost as long as tube, glabrous, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl slightly below throat; filaments very short; anthers ca. 1 mm. Disk annular, margin rounded-serrate. Ovary broadly ellipsoid, glabrous; style almost absent; stigma minute, ± flat. Drupe red, ovoid, ca. 5 × 4 mm. Fl. Mar–Apr, fr. Jun–Jul.

- Valleys, forests; 300–400 m. Anhui, Zhejiang.

23. *Daphne retusa* Hemsley, J. Linn. Soc., Bot. 29: 318. 1892.

凹叶瑞香 ao ye rui xiang

Shrubs evergreen, 0.4–1.5 m tall, densely branched. Branches strigose. Leaves alternate, usually clustered at apices of branches; petiole absent to almost absent; leaf blade oblong, oblong-lanceolate, or obovate-elliptic, 1.4–4(–7) × 0.6–1.4 cm,

leathery, both surfaces glabrous. base cuneate, margin revolute, apex obtuse or retuse and apiculate. Inflorescences terminal, usually several flowered; peduncle ca. 2 mm, densely strigose; bracts caducous, oblong to ovate-oblong or obovate-oblong, 5–8 × 3–4 mm, glabrous, apex rounded. Flowers fragrant; pedicel absent or almost absent, glabrous. Calyx purplish red abaxially with paler purple-pink or white lobes; tube cylindrical, 6–8 mm, exterior pubescent; lobes 4, broadly ovate or ovate-elliptic, 6–9 mm, apex rounded to obtuse, rarely acuminate. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl just below throat; filaments ca. 0.5 mm; anthers oblong, ca. 1.5 mm. Disk annular, glabrous, undulate. Ovary cylindrical or obovoid, ca. 2 mm, glabrous; style very short; stigma capitate, densely tomentose. Drupe red, subglobose or ovoid, 6–8 mm. Fl. Apr–May, fr. Jun–Jul.

Shrubby or herbaceous slopes; 3000–3900 m. Gansu, Hubei, Qinghai, Shanxi, Sichuan, Xizang, Yunnan [Bhutan, N India (Assam, Punjab), Kashmir, Nepal].

24. *Daphne odora* Thunberg in Murray, Syst. Veg., ed. 14, 372. 1784.

瑞香 rui xiang

Daphne chinensis Sprengel; *D. hybrida* Lindley; *D. japonica* Thunberg (1792), not Siebold & Zuccarini (1846); *D. kiusiana* Miquel var. *odora* (Thunberg) Makino; *D. mazellii* Carrière; *D. odora* f. *alba* (Hemsley) H. Hara; *D. odora* var. *alba* Hemsley; *D. odora* var. *leucantha* Makino; *D. odora* f. *marginata* Makino; *D. odora* var. *marginata* Miquel; *D. odora* var. *mazellii* (Carrière) Hemsley; *D. odora* f. *rosacea* (Makino) H. Hara; *D. odora* var. *rosacea* Makino; *D. odora* var. *variegata* Bean; *D. sinensis* Lamarck; *D. speciosissima* Carrière; *D. triflora* Loureiro.

Shrubs evergreen, to 1.5 m tall. Branches purplish red to purplish brown, stout, glabrous. Leaves alternate; petiole 4–5 mm, glabrous or sparsely puberulous; leaf blade obovate or obovate-elliptic, 6–13 × 2.5–5 cm, leathery, both surfaces glabrous, base cuneate, apex subacute, often apiculate; veins 7–13 pairs. Inflorescences terminal, capitate, up to 12(–20)-flowered; bracts lanceolate or ovate-lanceolate, 5–12 × 2–4 mm, glabrous. Flowers fragrant. Calyx purplish red abaxially with pinkish red to white lobes; tube 6–10 mm, exterior glabrous; lobes 4, ovate or ovate-lanceolate, 6–12 mm, base auriculate, apex obtuse. Stamens 8, lower whorl inserted just above middle of calyx tube, upper whorl in throat; filaments ca. 0.7 mm; anthers oblong, ca. 2 mm; upper ones 1/2 exerted from calyx tube. Disk annular, very narrow. Ovary oblong, glabrous; style short; stigma capitate. Drupe scarlet-red, globose, ca. 8 mm. Fl. Mar–May, fr. Jul–Aug.

Widely cultivated in China [native origin obscure, probably China or Japan but now widely cultivated].

25. *Daphne acutiloba* Rehder in Sargent, Pl. Wilson. 2: 539. 1916.

尖瓣瑞香 jian ban rui xiang

Shrubs evergreen, 0.5–2 m tall. Branches few, yellowish green, turning purplish reddish brown, appressed tomentose, becoming glabrous. Leaves alternate; petiole almost absent to

8 mm, glabrous; leaf blade yellowish green, oblanceolate, elliptic-oblanceolate, or lanceolate, 4–10 × 1.2–3.6 cm, leathery, both surfaces glabrous, base cuneate, apex acuminate or obtuse, rarely retuse; veins 7–12 pairs. Inflorescences terminal, usually 5–7(–10)-flowered; bracts caducous, ovate-elliptic or oblong-lanceolate, 6–8 × 1–3 mm, pubescent, apex obtuse, acute, or rarely caudate; leaflike bracts several, usually persistent, oblong-lanceolate, 3–3.5 × 0.5–1 cm, glabrous. Flowers fragrant; pedicel 0.5–2 mm, sericeous. Calyx white, sometimes suffused with purple; tube cylindrical, 9–12(–14) mm, exterior glabrous; lobes 4, ovate or ovate-oblong, 5–7 × 4–5 mm, apex acuminate or acute. Stamens 8, lower whorl inserted well above middle of calyx tube, upper whorl in throat; filaments ca. 0.5 mm; anthers oblong, ca. 1.5 mm; upper ones partly exerted from calyx tube. Disk annular-cup-shaped, entire or variously lobed. Ovary ellipsoid, 3–4 mm, glabrous; style very short; stigma capitate. Drupe red, ellipsoid, ca. 8 mm. Fl. Apr–May, fr. Jul–Sep.

• Forests; 1400–3000 m. Hubei, Sichuan, Yunnan.

26. *Daphne limprichtii* H. Winkler, Repert. Spec. Nov. Regni Veg. Beih. 12: 444. 1922.

铁牛皮 tie niu pi

Shrubs evergreen, 0.2–0.8 m tall, much branched, sometimes cushionlike. Branches pale yellowish green, turning brownish gray or grayish, stout, pubescent. Leaves alternate; petiole very short to absent; leaf blade bright green adaxially, paler abaxially, lanceolate or oblong-oblanceolate to oblong-elliptic, 1.5–3.2 × 0.5–0.8 cm, thinly leathery, both surfaces glabrous, base narrowly cuneate, margin strongly revolute, apex rounded, sometimes retuse; veins 8–12 pairs. Inflorescences terminal, 5–7-flowered; peduncle very short, sparsely tomentose; bracts ovate, 4.5–6(–9) × 3–4(–5) mm, apex obtuse, ciliate. Flowers fragrant; pedicel ca. 1 mm. Calyx white or pale pink; tube cylindrical, 10–11(–14) mm, exterior glabrous; lobes 4, ovate-oblong, 5–8 × 3–5 mm, apex obtuse, often retuse. Stamens 8, lower whorl inserted above middle of calyx tube; upper whorl in throat. Disk shallowly cup-shaped, entire. Ovary ovoid-ellipsoid, glabrous or apex gray pubescent; style short, ca. 0.4 mm; stigma capitate. Drupe red, ovoid, ca. 7 mm. Fl. May.

• Among boulders and bushes on sunny slopes; 3000–4400 m. SW Gansu, W Sichuan.

27. *Daphne tangutica* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 27: 531. 1881.

唐古特瑞香 tang gu te rui xiang

Shrubs evergreen, 0.5–2.5 m tall. Branches yellowish green, turning grayish yellow or purplish red to grayish brown, sparsely pubescent, glabrescent. Leaves alternate; petiole ca. 1 mm, glabrous; leaf blade lustrous dark green, lanceolate to oblanceolate, 2–10 × 0.5–2.2(–3) cm, leathery, abaxially glabrous or sparsely puberulous, adaxially glabrous, base cuneate or decurrent, margin sometimes revolute, apex obtuse, rarely retuse or acute to acuminate. Inflorescences terminal, capitate, 3–12-flowered; peduncle 1–3 mm, pubescent; bracts caducous, ovate or ovate-lanceolate, 5–9 × 3–4 mm, glabrous, ciliate on margin, apex obtuse. Pedicel to ca. 1 mm, densely pubescent. Calyx pink to white flushed purplish red abaxially; tube cylindrical, 9–

13(–15) mm, exterior glabrous; lobes 4, ovate or ovate-elliptic, 5–8(–10) × (3–)4–5(–6) mm, apex obtuse. Stamens 8, lower whorl inserted slightly above middle of calyx tube, upper whorl in throat; filaments short; anthers oblong, 1–1.2 mm; upper ones slightly exerted from calyx tube. Disk annular, ca. 0.5 mm wide, irregularly lobed. Ovary oblong-obovoid, 2–3(–4) mm, glabrous; style short; stigma discoid-capitate, 4-lobed. Drupe red, subglobose or ovoid, 6–8(–10) mm. Fl. Apr–Jun, fr. May–Jul.

• Forests; 1000–3800 m. Chongqing, Gansu, Guizhou, W Hubei, Qinghai, Shaanxi, Shanxi, Sichuan, Xizang, Yunnan.

- 1a. Leaf blade margin sometimes revolute, apex obtuse; young branches grayish yellow 27a. var. *tangutica*
- 1b. Leaf blade margin not revolute, apex acute or acuminate; young branches purplish red or grayish brown 27b. var. *wilsonii*

27a. *Daphne tangutica* var. *tangutica*

唐古特瑞香(原变种) tang gu te rui xiang (yuan bian zhong)

Daphne bodinieri H. Léveillé (1915), not H. Léveillé (1914); *D. laciniata* Lecomte var. *duclouxii* Lecomte; *D. szechuanica* H. Winkler; *D. vaillantii* Danguy.

Young branches grayish yellow. Leaf blade lanceolate to oblong-lanceolate or oblanceolate, 2–8 × 0.5–1.7 cm, margin sometimes revolute, apex obtuse.

• Forests; 1000–3800 m. Gansu, Guizhou, Qinghai, Shaanxi, Shanxi, Sichuan, Xizang, Yunnan.

27b. *Daphne tangutica* var. *wilsonii* (Rehder) H. F. Zhou, Fl. Sichuan. 9: 272. 1989.

野梦花 ye meng hua

Daphne wilsonii Rehder in Sargent, Pl. Wilson. 2: 540. 1916.

Young branches purplish red or grayish brown. Leaf blade obovate-lanceolate or oblong-lanceolate, 3.5–10 × 1–2.2 cm, margin not revolute, apex acute or acuminate.

• Forests. Chongqing, W Hubei, S Shanxi, Sichuan.

28. *Daphne championii* Bentham, Fl. Hongk. 296. 1861 [“*championii*”].

长柱瑞香 chang zhu rui xiang

Shrubs evergreen, 0.3–1(–2) m tall, erect. Older branches with leaf scars; branches yellowish green or grayish green, turning blackish brown, slender. Leaves alternate; petiole 1–2 mm, densely white sericeous; leaf blade elliptic or ovate-elliptic, 1.5–4.5 × 0.6–1.8 cm, papery or membranous, abaxially white sericeous, adaxially more sparsely so, base broadly cuneate, apex obtuse or subacute, apiculate; veins 5 or 6 pairs. Inflorescences axillary, 3–7-flowered; peduncle very short to almost absent, bracts usually absent, sometimes small and leaflike. Pedicel absent. Calyx white; tube cylindrical, 5–9 mm, exterior appressed yellow- or white sericeous; lobes 4, broadly ovate, 1–3 × ca. 0.5 mm, abaxially densely white sericeous, apex obtuse.

Stamens 8, inserted above middle of calyx tube; filaments short; anthers oblong, ca. 0.6 mm. Disk acuminate, lateral to ovary. Ovary ellipsoid, sessile or with a short stipe, apex sericeous; style slender, ca. 4 mm; stigma capitate. Drupe semidry, ovoid, ca. 6 mm, densely pubescent. Fl. Feb–Apr.

• Forests at low elevations; 200–700 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangsu, Jiangxi.

This species was first misidentified (Bentham, Hooker’s J. Bot. Kew Gard. Misc. 5: 196. 1853) as *Daphne fortunei* (i.e., *D. genkwa* in this treatment).

29. *Daphne rhynchocarpa* C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 87. 1985.

喙果瑞香 hui guo rui xiang

Daphne axillaris (Merrill & Chun) Chun & Wei subsp. *rhynchocarpa* (C. Y. Chang) Halda.

Shrubs evergreen, to 3 m tall. Branches gray-brown or dull brown, sparsely pubescent. Leaves alternate; petiole 1–3 mm; leaf blade deep green adaxially, paler abaxially, elliptic or oblanceolate, 5–11 × 2–3 cm, papery or thinly leathery, both surfaces glabrous, base cuneate, margin slightly undulate and revolute, apex obtuse; lateral veins 12–14 pairs, anastomosing near margins. Inflorescences mostly axillary, occasionally also terminal, 1–3-flowered; peduncle 1–2 mm, sericeous; bracts ovate-oblong, ca. 4 × 1.8 mm, margin ciliate, apex obtuse. Pedicel 1–2 mm, sericeous. Calyx purple-red; tube cylindrical, 8–10 mm, exterior sericeous; lobes 4, ovate or ovate-oblong, ca. 4 mm. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments short; anthers oblong, ca. 1.7 mm; upper ones ca. 1/2 exerted from calyx tube. Disk cup-shaped, margin entire. Ovary glabrous; style very short; stigma capitate. Drupe ovoid, ca. 7 × 5 mm, apex acuminate or beaked. Fl. Nov–Dec, fr. Mar–Apr.

• Forests; ca. 2500 m. SW Yunnan.

30. *Daphne leishanensis* H. F. Zhou ex C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 90. 1985.

雷山瑞香 lei shan rui xiang

Daphne genkwa Siebold & Zuccarini subsp. *leishanensis* (H. F. Zhou ex C. Y. Chang) Halda.

Shrubs deciduous, to 0.5 m tall. Branches turning dark purple, long, slender. Leaves alternate; petiole 1.2–2.3 mm, grayish sericeous; leaf blade elliptic, rarely elliptic-lanceolate, 3.5–6.5 × 1.2–2.5 cm, membranous, rarely thinly papery, abaxially sparsely grayish sericeous when young, adaxially glabrous, base nearly rounded or broadly cuneate, apex acute or shortly acuminate; veins 6–8 pairs. Inflorescences terminal, umbellate, 3–5-flowered; peduncle ca. 2 mm, densely sericeous; bracts absent. Pedicel 1–2 mm, densely sericeous. Calyx reddish; tube cylindrical, 6–7 mm, exterior sparsely sericeous; lobes 4, broadly ovate, 2.5–3 × ca. 2 mm, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments ca. 0.5 mm; anthers oblong, ca. 1 mm, upper ones ca. 3/4 exerted from calyx tube. Disk irregularly serrate-lobed. Ovary ovoid or broadly ellipsoid, ca. 1.2 mm, apex densely pubescent; style short; stigma capitate, papillose. Fruit not seen. Fl. May–Jun.

- Rocky slopes with bushes; 900–1200 m. Guizhou.

31. *Daphne erosiloba* C. Y. Chang, *Guihaia* 6: 265. 1985.

啮蚀瓣瑞香 *nie shi ban rui xiang*

Shrubs deciduous, 0.5–1 m tall. Branches slender, densely sericeous. Leaves alternate; petiole 1–2 mm, densely sericeous; leaf blade oblong or oblong-lanceolate, 1–2.8 × 0.5–1.6 cm, membranous or thinly papery, both surfaces sericeous when young, glabrescent, base broadly cuneate or rounded, margin rarely slightly revolute, apex obtuse; lateral veins 4–7 pairs. Inflorescences terminal, usually 3–5-flowered; peduncle 0.5–1 mm, densely sericeous; bracts absent. Pedicel absent. Calyx yellow; tube slender, broader in upper part near throat, 8–10 mm, exterior densely sericeous; lobes 4, oblong, rarely subovate, 2–3 × 1.2–2 mm, sparsely sericeous, margin irregularly incised, apex obtuse or truncate. Stamens 8, lower whorl inserted just above middle of calyx tube, upper whorl in throat; filaments very short; anthers oblong, ca. 1.1 mm. Disk ± square, lateral to ovary. Ovary clavate or obovoid, ca. 2 mm, stipitate, densely sericeous; style short; stigma capitate, papillose. Fruit not seen. Fl. Jun.

- Sunny herbaceous slopes; 3200–3800 m. W Sichuan.

32. *Daphne wangiana* (Hamaya) Halda, *Acta Mus. Richnov.*, Sect. Nat. 7: 10. 2000 [*“wangeana”*].

少丝瑞香 *shao si rui xiang*

Daphne holosericea (Diels) Hamaya var. *wangiana* Hamaya, *Acta Horti Gothob.* 26: 90. 1963 [*“wangeana”*].

Shrubs to 0.3 m tall. Branches with very dense leaf scars. Leaves alternate; leaf blade linear or linear-oblong, 1.5–2.5 mm wide, glabrous except for midrib abaxially. Inflorescences terminal. Calyx green; tube 3–6 × ca. 1.5 mm, exterior sparsely pubescent; lobes 4, unequal, triangular-ovate, 1.4–3 × 1.5–2 mm, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube; anthers linear-oblong, included within calyx tube. Disk obliquely cupular, irregularly 2- or 3-lobed, margin minutely serrate. Ovary pubescent at apex; style short; stigma globose, tiny. Drupe semidry, yellowish green, obovoid, ca. 5 mm.

- SE Xizang.

The 4-merous flowers of *Daphne holosericea* var. *wangiana*, when coupled with other differences in calyx indumentum and anther shape, support Halda's elevation of this taxon to species rank.

33. *Daphne purpurascens* S. C. Huang, *Acta Bot. Yunnan.* 7: 280. 1985.

紫花瑞香 *zi hua rui xiang*

Daphne longilobata (Lecomte) Turrill subsp. *purpurascens* (S. C. Huang) Halda.

Shrubs evergreen, 1.5–2 m tall, erect. Branches densely pubescent. Leaves alternate; petiole ca. 2 mm, glabrous; leaf blade oblong-elliptic or oblong-lanceolate, 4–6.5 × 1–1.7 cm, papery, both surfaces glabrous, base broadly cuneate or subrounded, apex acuminate; veins 5–7 pairs. Inflorescences terminal, 5–9-

flowered; peduncle ca. 7 mm, densely strigose; bracts absent. Pedicel short, densely strigose. Calyx purplish red; tube cylindrical, ca. 4 mm, 8-ribbed, exterior sericeous; lobes 4, ovate-oblong, 4–5 × 2–2.5 mm, obtuse and slightly retuse. Stamens 8, lower whorl inserted below middle of calyx tube, upper whorl just below throat; filaments very short, ca. 0.25 mm; anthers oblong, ca. 1.3 mm; upper ones ca. 1/2 exerted from calyx tube. Disk annular. Ovary ovoid, ca. 1.5 mm, glabrous, sessile; style short; stigma depressed-globose, papillose. Fruit not seen. Fl. Aug–Oct.

- Shrubby slopes; 2600–3100 m. Xizang.

34. *Daphne altaica* Pallas, *Fl. Ross.* 1: 53. 1784.

阿尔泰瑞香 *a er tai rui xiang*

Daphne altaica subsp. *fasciculiflora* (T. Z. Hsu) Halda; *D. fasciculiflora* T. Z. Hsu.

Shrubs deciduous, 0.4–0.8 m tall, erect. Bark brown, turning dark gray; branches elongated, pubescent at first, becoming glabrous. Leaves alternate; petiole absent to almost absent; leaf blade oblong-elliptic or elliptic-lanceolate, 2.5–6 × 0.7–1.5 cm, membranous, abaxially glaucescent, both surfaces glabrous, base cuneate, margin sometimes slightly revolute, apex obtuse or acute, shortly apiculate; veins 5–7 pairs. Inflorescences terminal, 3–7-flowered; bracts absent. Pedicel absent or almost absent. Calyx white; tube cylindrical, 10–12 mm, slender, exterior sparsely pubescent; lobes 4, narrowly ovate or broadly elliptic, 6–8 × 4–5 mm, apex obtuse, apiculate. Stamens 8, lower whorl inserted at ca. middle of calyx tube; upper whorl in throat, upper ones ca. 1/2 exerted from calyx tube. Disk small. Ovary ovoid, glabrous; style very short; stigma capitate. Drupe purplish black, ovoid, 5–7 mm. Fl. May–Jun, fr. Jul–Sep.

Valleys, mountains, shrubby slopes; ca. 1000 m. Xinjiang [NW Mongolia, Russia (Siberia)].

35. *Daphne longilobata* (Lecomte) Turrill, *Bot. Mag.* 172: t. 344. 1959.

长瓣瑞香 *chang ban rui xiang*

Daphne altaica Pallas var. *longilobata* Lecomte, *Notul. Syst. (Paris)* 3: 217. 1916.

Shrubs evergreen, to 1.5 m tall, erect. Branches pale green, sometimes turning purplish brown, slender, pubescent. Leaves alternate; petiole 0.5–2(–3) mm, glabrous; leaf blade lanceolate or oblanceolate, 1.5–4.5(–9) × 0.6–1.1(–2) cm, papery, both surfaces glabrous except sometimes for apical tuft of hairs when young, base narrowly cuneate, margin sometimes slightly revolute, apex obtuse or obtuse-rounded, rarely apiculate or retuse; veins 6–9 pairs. Inflorescences terminal, 3–5(or 6)-flowered; peduncle 0.8–1 cm, pubescent; bracts absent. Pedicel 1(–3) mm, pubescent. Calyx pale green, with white or very pale cream lobes; tube cylindrical, 8–10(–14) mm, exterior pubescent; lobes 4, unequal, lanceolate, 5–7 × 2–2.5(–3.5) mm, abaxially glabrescent, apex long acuminate. Stamens 8, lower whorl inserted below middle of calyx tube, upper whorl between throat and middle of tube; filaments ca. 0.5 mm; anthers oblong, ca. 1.5 mm, pollen orange. Disk annular, margin shallowly undu-

late. Ovary ovoid, ca. 2 mm, glabrous; style short; stigma capitate. Drupe scarlet-red, ovoid-globose, 8–12 mm. Fl. Jun–Jul, fr. Aug–Dec.

• Forests, shrubby slopes, among rocks; 1600–3500 m. SW Sichuan, E Xizang, NW Yunnan.

Daphne longilobata is widely grown and is sometimes used as a stock for grafting.

36. *Daphne depauperata* H. F. Zhou ex C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 92. 1985.

少花瑞香 shao hua rui xiang

Shrubs evergreen, to 1.5 m tall. Branches brownish striate, densely yellowish hirsute. Leaves alternate, usually clustered at apices of branches; petiole 1.5–2 mm, glabrous; leaf blade dark glossy green, narrowly elliptic to lanceolate, rarely oblanceolate, 2–5.5 × 0.7–1.5 cm, leathery, both surfaces glabrous, base cuneate, margin slightly revolute, apex obtuse; veins 5–8 pairs. Inflorescences terminal, capitate, 2–4-flowered; peduncle ca. 3 mm, densely brownish tomentose; bracts absent. Pedicel ca. 1.5 mm, densely tomentose. Calyx white; tube cylindrical, 8–10 mm, exterior sparsely hirsute; lobes 4, ovate-lanceolate, ca. 6 mm, apex acuminate. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments very short; anthers oblong-conic, ca. 2.1 mm, upper ones exerted from calyx tube. Disk shallow. Ovary oblong-conic, ca. 2.5 mm, sessile or shortly stipitate, glabrous; style ca. 0.5 mm; stigma capitate. Drupe red, ovoid, ca. 5 mm. Fl. Aug, fr. Feb–Mar.

• Forests; 2000–3200 m. W Yunnan.

37. *Daphne brevituba* H. F. Zhou ex C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 101. 1985.

短管瑞香 duan guan rui xiang

Shrubs evergreen, to 1 m tall. Branches yellowish green, turning brownish or grayish, densely tomentose, glabrescent. Leaves alternate, usually clustered at apices of branches; petiole 1–2 mm, glabrous; leaf blade vivid green adaxially, paler abaxially, oblanceolate or obovate-lanceolate, 2.5–6 × 0.8–1.6 cm, thinly leathery or papery, both surfaces glabrous, base narrowly cuneate, apex obtuse or rounded, usually slightly retuse; veins 7–11 pairs. Inflorescences terminal, usually 3–5-flowered; bracts narrowly lanceolate or obovate-lanceolate, 8–12 × ca. 2.5 mm, pilose, apex rounded. Flowers fragrant; pedicel ca. 1 mm, densely brown tomentose. Calyx white; tube urceolate, 3–5 × ca. 2.5 mm, exterior sparsely tomentose or glabrescent; lobes 4, ovate or ovate-elliptic, 2.5–3.5 mm, apex obtuse or acuminate. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments short; anthers broadly ovoid-ellipsoid, ca. 1 mm. Disk annular, poorly developed, very narrow, margin fimbriate. Ovary oblong-conic, glabrous; style very short; stigma capitate. Drupe red, ovoid, ca. 7 × 5 mm. Fl. Mar–Apr, fr. Apr–May.

• Open forests, bushy slopes, among rocks; ca. 2000 m. C and NW Yunnan (Heqing, Yimen).

38. *Daphne sureil* W. W. Smith & Cave, Rec. Bot. Surv. India 6: 51. 1914.

头序瑞香 tou xu rui xiang

Daphne shillong Banerji.

Shrubs evergreen, to 2.5 m. Bark grayish brown; branches ascending, very finely white tomentose, quickly glabrescent. Leaves alternate; petiole to 10 mm; leaf blade glossy dark green adaxially, paler abaxially, lanceolate to oblong-lanceolate, 5–13 × 1.6–3.5(–5) cm, leathery, both surfaces glabrous or abaxially puberulous, soon glabrous, base cuneate, apex long acuminate; lateral veins 9–12 per side of midrib, very oblique. Inflorescences terminal, sometimes on short lateral branches, capitate, 12–20-flowered; peduncle very short. Pedicel to 3 mm, finely tomentose. Calyx white, with green base; tube ca. 15 × 3 mm, exterior pubescent; lobes 4, triangular-lanceolate, ca. 10 × 4 mm, margin slightly involute, apex acute to acuminate. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; anthers ca. 2 mm. Disk cup-shaped, ca. 1 mm, margin serrate. Ovary cylindrical-ovoid, ca. 4 × 2 mm, glabrous; style very short but distinct; stigma discoid, ca. 1.5 mm wide. Drupe orange-red, ovoid, ca. 15 × 10 mm. Fl. Oct–Nov.

Dense montane forests; 1800–2100(–2800) m. Xizang [Bangladesh, Bhutan, NE India, E Nepal].

This Chinese record is based on *Kingdon Ward 10930* (BM), the first record for the Flora area.

39. *Daphne macrantha* Ludlow, Bull. Brit. Mus. (Nat. Hist.), Bot. 11: 77. 1956.

大花瑞香 da hua rui xiang

Shrubs evergreen, to 0.3 m tall, creeping. Branches angular, with semilunate leaf scars, purplish red or brown, glabrous. Leaves alternate, usually clustered at apices of branches; petiole 1–2 mm; leaf blade narrowly obovate, 3–5.5 × 1.5–2.5 cm, leathery, both surfaces glabrous, base cuneate and decurrent to petiole, margin revolute, apex obtuse, sometimes retuse. Inflorescences terminal, capitate, 5–10-flowered; peduncle almost absent; bracts caducous, oblong or oblong-ovate, 10–15 × 5–7 mm. Flowers fragrant; pedicel 1–2 mm, pilose. Calyx white, with yellowish throat; tube cylindrical, 12–17 mm, exterior pubescent; lobes 4, ovate or broadly ovate, 12–13 × 7–10 mm, apex obtuse, sometimes retuse. Stamens 8, inserted above middle of calyx tube; filaments ca. 0.5 mm; anthers oblong, ca. 2 mm. Disk cup-shaped, 0.6–1 mm, entire. Ovary ca. 4.5 mm, shortly stipitate, glabrous; style short; stigma capitate. Drupe red, ovoid, ca. 8 mm. Fl. Jun.

• Among rocks on north-facing open hillsides; 4200–4300 m. NE Xizang.

40. *Daphne yunnanensis* H. F. Zhou ex C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 96. 1985.

云南瑞香 yun nan rui xiang

Daphne papyracea Wallich ex Steudel subsp. *yunnanensis* (H. F. Zhou ex C. Y. Chang) H. F. Zhou ex Halda.

Shrubs evergreen. Branches sparsely pubescent when young. Leaves alternate; petiole 4–12 mm, glabrous; leaf blade obovate-lanceolate, 8–20 × 2–4.2 cm, papery to submembranous, sometimes thinly leathery, both surfaces glabrous, base narrowly cuneate, apex caudate-acuminate, rarely obtuse-acu-

minate; veins 8–12 pairs, anastomosing near margins. Inflorescences terminal or axillary, capitate; peduncle 1–2 mm; bracts caducous, lanceolate or oblong-lanceolate, 8–10 × 2–3 mm, sericeous, apex acuminate. Pedicel 1–2 mm, densely sericeous. Calyx white; tube cylindric or slightly infundibuliform, 10–14 mm, exterior sparsely pubescent; lobes 4, ovate or oblong-lanceolate, 5–7 mm, glabrous, unequal, the 2 larger lobes acute with a tuft of hairs, the 2 smaller obtuse, glabrous. Stamens 8, lower whorl inserted just above middle of calyx tube, upper whorl slightly below throat; filaments short; anthers oblong, ca. 2 mm. Disk 2-lobed, lobes 2-fid. Ovary ellipsoid, ca. 2.2 mm, glabrous; style short, ca. 0.3 mm; stigma capitate. Drupe red.

- Montane forests, among boulders. SW Yunnan.

41. *Daphne laciniata* Lecomte, Notul. Syst. (Paris) 3: 215. 1916.

翼柄瑞香 *yi bing rui xiang*

Shrubs deciduous, 0.8–1.5 m tall. Branches glabrous or sometimes at first sparsely pubescent. Leaves alternate; petiole 8–15 mm, glabrous; leaf blade lanceolate or oblong-elliptic to elliptic, 12–17 × 2.5–5 cm, papery or leathery, both surfaces glabrous, base cuneate, margin sometimes slightly revolute, apex subacuminate; veins 12–16 pairs, anastomosing at margins. Inflorescences terminal and axillary, fasciculate; bracts leaflike, ovate-lanceolate or lanceolate, (6–)10–12 × 3–4 mm. Pedicel very short, pubescent or glabrescent. Calyx white or pinkish; tube cylindric, 9–11 mm, exterior sparsely appressed tomentose; lobes 4, triangular-ovate, 3–4 mm, apex acuminate. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments ca. 1 mm; anthers oblong, ca. 1.5 mm. Disk cup-shaped, lacinate. Ovary globose, ca. 3.5 mm, glabrous, sessile; style short; stigma globose or ovoid-globose. Fruit not seen.

- Forests; 1000–1500 m. Yunnan.

42. *Daphne tripartita* H. F. Zhou ex C. Y. Chang, Guihaia 6: 268. 1986.

九龙瑞香 *jiu long rui xiang*

Shrubs evergreen, small. Branches brownish or purplish brown, stout, shortly pubescent, glabrescent. Leaves alternate; petiole 1–2 mm, broadly winged; leaf blade lustrous dark green adaxially, paler abaxially, elliptic or oblong-lanceolate, 2–5 × 0.8–1.5 cm, papery or thinly leathery, both surfaces glabrous, base narrowly cuneate, margin sometimes revolute, apex obtuse, apiculate or retuse; veins 5 or 6 pairs. Inflorescences terminal, capitate, 2–8-flowered; bracts caducous, lanceolate, ca. 8 mm, mostly glabrous, margin and apex tomentose. Pedicel 1–2 mm, densely brown tomentose. Calyx white (or pink); tube narrowly cylindric, 10–11 mm, exterior brownish pubescent; lobes 4, broadly ovate or ovate-lanceolate, 2–3 mm, apex acute. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments short; anthers linear-oblong, ca. 1 mm. Disk annular, 3-lobed; lobes ± square, irregularly 1- or 2-fid. Ovary ellipsoid, ca. 3 mm, glabrous; style ca. 1.5 mm; stigma capitate, tiny. Drupe red, ovoid, ca. 8 mm. Fl. Jun, fr. Jul–Aug.

- Forests, among boulders; 2700–3000 m. SW Sichuan, NW Yunnan.

43. *Daphne jinyunensis* C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 94. 1985.

缙云瑞香 *jin yun rui xiang*

Shrubs evergreen, to 1.5 m tall. Branches sparsely pubescent. Leaves alternate, usually clustered at apices of branches; petiole 0.5–1 mm; leaf blade elliptic, elliptic-lanceolate, or obovate, 5–15 × 2–4 cm, thinly leathery or papery, both surfaces glabrous, base cuneate, margin slightly revolute, apex obtuse, acute, or caudate-acuminate, sometimes retuse; veins 6–10 pairs. Inflorescences terminal, several flowered; bracts caducous, lanceolate or oblong, ca. 6 × 1.8 mm, sparsely pubescent. Pedicel 1–1.5 mm, densely pubescent. Calyx purplish white; tube 6–8 mm, exterior densely pubescent; lobes 4, ovate or ovate-lanceolate, 3–4 × 1.5–2.5 mm, apex obtuse or acute. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments very short; anthers linear-oblong, ca. 1.4 mm. Disk annular, margin irregularly 4- or 5-lobed. Ovary ellipsoid, glabrous; style 0.7–1.2 mm, hairy or glabrous; stigma capitate. Drupe red, broadly ovoid. Fl. Aug–Sep, fr. Mar–Apr.

- Open forests on rocky slopes. Chongqing.

- 1a. Leaf blade thinly leathery, apex not retuse, style ca. 1.2 mm, glabrous 43a. var. *jinyunensis*
- 1b. Leaf blade papery, apex retuse, sometimes midrib forked at apex, style 0.7–1 mm, densely yellowish brown sericeous 43b. var. *ptilostyla*

43a. *Daphne jinyunensis* var. *jinyunensis*

缙云瑞香(原变种) *jin yun rui xiang* (yuan bian zhong)

Daphne papyracea Wallich ex Steudel subsp. *jinyunensis* (C. Y. Chang) Halda.

Leaf blade thinly leathery, apex not retuse. Style ca. 1.2 mm, glabrous.

- Chongqing.

43b. *Daphne jinyunensis* var. *ptilostyla* C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 95. 1985.

毛柱瑞香 *mao zhu rui xiang*

Daphne papyracea var. *ptilostyla* (C. Y. Chang) Halda.

Leaf blade papery, apex retuse; midrib sometimes forked into 2 at apex. Style 0.7–1 mm, densely yellowish brown sericeous.

- Open forests on rocky slopes. Chongqing.

44. *Daphne papyracea* Wallich ex Steudel, Nomencl. Bot., ed. 2, 1: 483. 1840.

白瑞香 *bai rui xiang*

Shrubs evergreen, to 1.5 m tall. Branches grayish brown or -black or purplish red or -brown, glabrous or tomentose. Leaves alternate; petiole 1–15 mm, glabrescent; leaf blade ovate, lan-

ceolate, elliptic, or oblanceolate, 6–16 × 1.5–4 cm, thinly leathery, membranous, or papery, both surfaces glabrous, base cuneate, apex acuminate or obtuse; veins 6–15 pairs. Inflorescences terminal, fasciculate, 3–10(–12)-flowered; peduncle ca. 2 mm, sericeous; bracts caducous, ovate, 7–15 × 3–4 mm, sparsely sericeous, apex acuminate. Flowers not fragrant; pedicel ca. 2 mm, densely sericeous. Calyx white or greenish white, sometimes flushed pink; tube narrowly funnel-shaped, (5–)10–15(–18) mm, exterior sericeous; lobes 4, ovate, 4–11 × 2–5 mm, apex acute or obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments short; anthers oblong, 1–2 mm; upper ones partly exerted from calyx tube. Disk cup-shaped, margin slightly undulate to obscurely serrate. Ovary cylindrical, 2–4 mm, glabrous; style very short; stigma capitate, papillose. Drupe red, ovoid-pyriform, 8–10 mm. Fl. Nov–Jan, fr. Apr–May.

Forests, shrubby and herbaceous slopes; 700–3100 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan [India, Nepal].

The separation of the varieties of *Daphne papyracea* from the following three species, *D. feddei*, *D. longituba*, and *D. kusei*, is difficult, and the status of all these taxa needs more detailed investigation.

- 1a. Branches grayish brown or grayish black, tomentose; leaf blade papery, membranous, or thinly leathery.
- 2a. Leaf blade membranous or papery, narrowly elliptic to oblong-lanceolate or oblanceolate, petiole 4–15 mm; calyx tube 10–12 mm, throat ca. 2.5 mm wide 44a. var. *papyracea*
- 2b. Leaf blade thinly leathery, lanceolate, petiole 1–3 mm; calyx tube 7–9 mm, throat ca. 2 mm wide 44b. var. *duclouxii*
- 1b. Branches purplish red or purplish brown, usually glabrous; leaf blade leathery or thickly papery.
- 3a. Leaf blade elliptic or lanceolate, leathery; calyx tube 5–6 mm, lobes ca. 4 mm 44c. var. *crassiuscula*
- 3b. Leaf blade ovate or broadly elliptic, thickly papery; calyx tube 14–15 mm, lobes 5–6 mm 44d. var. *grandiflora*

44a. *Daphne papyracea* var. *papyracea*

白瑞香(原变种) bai rui xiang (yuan bian zhong)

Daphne cannabina Wallich, *Asiat. Res.* 13: 385. 1820, not Loureiro (1790); *D. cavaleriei* H. Léveillé; *D. mairei* H. Léveillé.

Branches grayish brown or grayish black, tomentose. Petiole 4–15 mm; leaf blade elliptic to oblong-lanceolate or oblanceolate, membranous or papery. Calyx tube 10–12(–18) × 2.5–5 mm at throat.

Forests, shrubby slopes; 700–2000 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan [India, Nepal].

“*Daphne papyrifera* Buchanan-Hamilton,” an unpublished name

listed by D. Don (*Prodr. Fl. Nepal.* 68. 1825) in the synonymy of *D. odora*, belongs here (see Meisner in A. Candolle, *Prodr.* 14: 537. 1857).

44b. *Daphne papyracea* var. *duclouxii* Lecomte, *Notul. Syst. (Paris)* 3: 216. 1916.

短柄白瑞香 duan bing bai rui xiang

Branches grayish brown or grayish black, tomentose. Petiole 1–3 mm; leaf blade lanceolate, subleathery. Calyx tube 7–9 × ca. 2 mm at throat; lobes ovate-oblong, 4–6 mm.

• Forests; ca. 1200 m. NE Yunnan.

44c. *Daphne papyracea* var. *crassiuscula* Rehder in Sargent, *Pl. Wilson.* 2: 546. 1916.

山辣子皮 shan la zi pi

Branches purplish red or purplish brown, short, stout, usually glabrous. Leaf blade elliptic or lanceolate, leathery. Calyx tube 5–6 mm; lobes ovate, ca. 4 × 3–4 mm.

• Shrubby and herbaceous slopes; 1000–3100 m. Guizhou, Sichuan, Yunnan.

44d. *Daphne papyracea* var. *grandiflora* (Meisner ex Diels) C. Y. Chang, *Fl. Reipubl. Popularis Sin.* 52(1): 376. 1999.

大花白瑞香 da hua bai rui xiang

Daphne papyracea f. *grandiflora* Meisner ex Diels, *Notes Roy. Bot. Gard. Edinburgh* 7: 290. 1912.

Branches purplish red or purplish brown, usually glabrous. Leaf blade ovate or broadly elliptic, thickly papery. Calyx tube 14–15 mm; lobes ovate, 5–6 mm.

• Forests; ca. 2500 m. W Yunnan.

45. *Daphne feddei* H. Léveillé, *Repert. Spec. Nov. Regni Veg.* 9: 326. 1911.

滇瑞香 dian rui xiang

Shrubs evergreen, 0.6–2 m tall. Branches few, angular when young, pale yellowish green, turning purplish brown or bright purple, sparsely tomentose or glabrous. Leaves alternate; petiole 1–3 mm; leaf blade dark lustrous green adaxially, yellowish abaxially, oblanceolate or oblong-lanceolate to obovate-lanceolate or obovate, (3–)4.5–12 × (0.7–)1.4–3.5 cm, papery, both surfaces glabrous, base cuneate, margin revolute, apex acute or acuminate, rarely obtuse; veins 11–16 pairs, anastomosing near margins. Inflorescences terminal, usually 8–12-flowered; peduncle ca. 3 mm; bracts caducous, lanceolate or oblong, sericeous. Flowers fragrant; pedicel ca. 1 mm, sericeous. Calyx white; tube cylindrical, 8–12(–18) × 1.5–2.5 mm, exterior densely pubescent; lobes 4, ovate or ovate-lanceolate, 4.5–5.5(–8) × ca. 2.5 mm, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments ca. 0.5 mm; anthers oblong, ca. 1.3 mm; upper ones ca. 1/2 exerted from calyx tube. Disk cup-shaped, very narrow, margin fringed. Ovary ovoid or conic, glabrous; style short, ca. 0.5 mm; stigma capitate, papillose. Drupe orange-red, globose or ovoid, 4.5–8 mm. Fl. Feb–Apr, fr. May–Jun.

• Forests, shrubby slopes; 1800–2600 m. Guizhou, Sichuan, Yunnan.

- 1a. Young branches sparsely dark gray tomentose 45a. var. *feddei*
- 1b. Young branches glabrous 45b. var. *taliensis*

45a. *Daphne feddei* var. *feddei*

滇瑞香(原变种) dian rui xiang (yuan bian zhong)

Daphne martini H. Léveillé.

Young branches sparsely dark gray tomentose. Leaf blade oblanceolate or oblong-lanceolate to obovate-lanceolate, 5–12 × 1.4–3.5 cm, apex acute or acuminate.

• Forests, shrubby slopes; 1800–2600 m. Guizhou, Sichuan, Yunnan.

45b. *Daphne feddei* var. *taliensis* H. F. Zhou ex C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 99. 1985.

大理瑞香 da li rui xiang

Young branches glabrous. Leaf blade narrowly obovate, 4.5–9 × 1.8–3.2 cm, apex usually acute.

• Forests. Yunnan.

46. *Daphne longituba* C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 97. 1985.

长管瑞香 chang guan rui xiang

Daphne papyracea Wallich ex Steudel var. *longituba* (C. Y. Chang) Halda.

Shrubs evergreen, to 1 m tall. Branches purplish red or brown, tomentose. Leaves alternate; petiole 3–10 mm; leaf blade broadly elliptic, ovate, or obovate, 3.5–9.5 × 2–4.5 cm, papery or thinly leathery, both surfaces glabrous, base broadly cuneate, margin sometimes slightly revolute, apex obtuse or acute, sometimes retuse; veins 8–10 pairs. Inflorescences terminal, usually 3–8-flowered; peduncle 3–6 mm; bracts caducous, narrowly ovate-elliptic or narrowly elliptic, pubescent at apex, ciliate. Flowers fragrant; pedicel 2–3 mm, densely sericeous. Calyx white; tube cylindric or narrowly funnel-shaped, 10–14 mm, exterior sericeous; lobes 4, ovate, 3–4(–7) × ca. 2.5 mm, abaxially very sparsely sericeous, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl slightly below throat; filaments very short; anthers oblong, ca. 3 mm. Disk cup-shaped, margin erose. Ovary ovoid or oblong-cylindric, 1.5–3 mm, glabrous; style ca. 1 mm; stigma capitate. Fruit not seen. Fl. Oct–Nov(–Jan).

• Forests, valleys; 1000–1200 m. NE Guangxi.

47. *Daphne kiusiana* Miquel var. *atrocaulis* (Rehder) F. Maekawa, J. Jap. Bot. 21: 45. 1945.

毛瑞香 mao rui xiang

Daphne odora Thunberg var. *atrocaulis* Rehder in Sargent, Pl. Wilson. 2: 545. 1916; *D. odora* var. *taiwaniana* Masamune; *D. taiwaniana* (Masamune) Masamune.

Shrubs evergreen, 0.5–1.2(–2) m tall. Branches dark purplish red or brown, glabrous. Leaves alternate; petiole 6–8 mm;

leaf blade adaxially dark green, elliptic or lanceolate, (5–)6–12 × (1.5–)1.8–3 cm, leathery, both surfaces glabrous, base decurrent into petiole, margin slightly revolute, apex acuminate; veins 6 or 7 pairs. Inflorescences terminal, subcapitate, usually 9–12-flowered; peduncle almost absent; bracts caducous, oblong-lanceolate, outer ca. 15 × 4 mm, glabrous, apex caudate or acuminate, ciliate. Pedicel 1–2 mm, densely tomentose. Calyx white (or creamy); tube cylindric, 10–14 mm, exterior densely sericeous; lobes 4, ovate-triangular or ovate-oblong, ca. 5 mm, glabrous, apex obtuse. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments ca. 2 mm; anthers oblong, ca. 2.1 mm. Disk cup-shaped, margin entire or slightly undulate. Ovary obconic, ca. 2.2 mm, glabrous; style short; stigma capitate. Drupe broadly ellipsoid or ovoid-ellipsoid, ca. 10 mm. Fl. Nov–Feb, fr. Apr–May.

• Forests, moist places; 300–400 m. Anhui, Fujian, Guangdong, Guangxi, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Zhejiang.

This species has been misidentified as *Daphne odora* (e.g., by Hemsley, J. Linn. Soc., Bot. 26: 395. 1891). *Daphne kiusiana* var. *kiusiana* is found in Japan and S Korea. It has oblanceolate leaf blades and smaller flowers with calyx tubes 7–8 mm.

48. *Daphne bholua* Buchanan-Hamilton ex D. Don, Prodr. Fl. Nepal. 68. 1825.

藏东瑞香 zang dong rui xiang

Shrubs evergreen or deciduous, creeping or erect, 1–2.6 (–4) m tall. Branches brownish, becoming dark brown suffused with purple, sparsely hirsute, soon glabrescent. Leaves alternate, clustered at stem apex; petiole 1–5 mm; leaf blade dull dark green, narrowly elliptic or oblong-lanceolate, (3.5–)5–17 × (1–)1.7–3.2 cm, thinly leathery, both surfaces glabrous, base broadly cuneate, margin sometimes slightly revolute and/or undulate, apex acute, rarely acuminate or obtuse; veins 6–16 pairs. Inflorescences terminal or axillary, (5–)7–12(–15)-flowered; peduncle almost absent; bracts paired, caducous, broadly lanceolate or oblong-ovate, 14–18 × ca. 4 mm, sericeous, apex caudate. Flowers fragrant; pedicel absent or to 4 mm, articulate, densely sericeous. Calyx purplish red or red at least abaxially; tube cylindric, 7–10(–12) mm, exterior densely sericeous; lobes 4, ovate, 5–7 × 3–5 mm, abaxially pubescent, apex slightly retuse to subacute. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl reaching mouth; filaments ca. 0.5 mm; anthers ca. 2 mm. Disk cupular, ca. 1 mm wide, margin entire. Ovary cylindric-pyriform, ca. 4 mm, glabrous, shortly stipitate; style ca. 0.5 mm; stigma capitate. Drupe black, ovoid, 7–8 × ca. 5 mm. ?Fl. Jan–Mar, fr. Apr–May.

Forests; 1700–3500 m. Sichuan, Xizang, NW Yunnan [Bangladesh, Bhutan, India, Myanmar, Nepal].

- 1a. Shrubs erect, 1.5–2.6(–4) m tall, leaf scar semicircular, lateral veins 11–16 pairs 48a. var. *bholua*
- 1b. Shrubs creeping, 1–2 m tall, leaf scar subrhombic, lateral veins 6–11 pairs 48b. var. *glacialis*

48a. *Daphne bholua* var. *bholua*

藏东瑞香(原变种) zang dong rui xiang (yuan bian zhong)

Daphne cannabina Wallich var. *bholua* (Buchanan-Hamilton ex D. Don) Keissler, Bot. Jahrb. Syst. 25: 93. 1898.

Shrubs erect, 1.5–2.6 m tall. Leaf scars semicircular. Leaf blade with 11–16 pairs of lateral veins.

Forests. Sichuan, Xizang, NW Yunnan [Bangladesh, Bhutan, India, Myanmar, Nepal].

48b. *Daphne bholua* var. *glacialis* (W. W. Smith & Cave) B. L. Burtt, Bull. Misc. Inform. Kew 1936: 438. 1936.

落叶瑞香 *luo ye rui xiang*

Daphne cannabina var. *glacialis* W. W. Smith & Cave, Rec. Bot. Surv. India 6: 52. 1913.

Shrubs creeping, 1–2 m tall. Leaf scars subrhombic. Leaf blade with 6–11 pairs of lateral veins.

Forests. S Xizang (Dinggyé, Yadong), NW Yunnan [India, Nepal].

49. *Daphne xichouensis* H. F. Zhou ex C. Y. Chang, Bull. Bot. Res., Harbin 5(3): 99. 1985.

西畴瑞香 *xi chou rui xiang*

Daphne papyracea Wallich ex Steudel var. *xichouensis* (H. F. Zhou ex C. Y. Chang) Halda.

Shrubs evergreen, to 1 m tall. Branches sparsely tomentose. Leaves alternate; petiole 2–4 mm, glabrous; leaf blade oblong to lanceolate, 4.5–11 × 1.5–2.8 cm, thinly leathery or papery, both surfaces glabrous, base broadly cuneate, margin slightly revolute, apex obtuse, rarely acuminate; veins 7 or 8 pairs. Inflorescences terminal or axillary, usually 4–8-flowered; bracts caducous, ovate-lanceolate or lanceolate, 5–7 mm, apex acuminate, ciliate. Pedicel 1–1.4 mm, densely sericeous. Calyx reddish white; tube cylindrical, broader in throat, ca. 7 mm, exterior sparsely tomentose; lobes 4, broadly ovate, 3–4 mm, glabrous, apex obtuse. Stamens 8, lower whorl inserted slightly above middle of calyx tube, upper whorl in throat; filaments short; anthers oblong, ca. 1.6 mm. Disk shallow, margin slightly undulate. Ovary ovoid, glabrous; style short; stigma papillose. Drupe globose, ca. 6 mm. Fl. Jan–Feb, fr. Apr.

• Moist shrubby slopes; 1500–1800 m. SE Yunnan.

50. *Daphne emeiensis* C. Y. Chang, Guihaia 6: 267. 1985.

峨眉瑞香 *e mei rui xiang*

Daphne bholua Buchanan-Hamilton ex D. Don subsp. *emeiensis* (C. Y. Chang) Halda.

Shrubs evergreen, 0.5–1 m tall. Branches hispid. Leaves alternate, usually clustered at apices of branches; petiole 3–7 mm; leaf blade narrowly elliptic or subobovate, 4–8 × 1.1–2.5 cm, leathery or thinly so, both surfaces glabrous, base cuneate, apex obtuse, sometimes retuse; veins 6–9 pairs. Inflorescences terminal and axillary; peduncle very short to absent; bracts oblong, ca. 6 × 2–3 mm, ciliate. Pedicel ca. 2.5 mm, densely hispid-pilose. Calyx red; tube cylindrical, ca. 9 mm, exterior densely hispid; lobes 4, ovate-elliptic, ca. 5 mm, glabrous or sparsely hispid abaxially, apex obtuse. Stamens 8, lower whorl inserted ca. 5 mm below throat, upper whorl ca. 1.5 mm below throat; filaments ca. 0.8 mm; anthers linear-oblong, ca.

2.1 mm. Disk annular, margin undulate-serrate. Ovary ellipsoid, ca. 2.5 mm, glabrous; style ca. 0.35 mm; stigma capitate. Drupe globose, ca. 4 mm. Fl. Nov–Feb, fr. Apr–May.

• Forests, forest margins; 800–1100 m. Sichuan (Emei Shan, Pingshan).

51. *Daphne pachyphylla* D. Fang, Acta Phytotax. Sin. 39: 547. 2001.

厚叶瑞香 *hou ye rui xiang*

Shrubs evergreen, ca. 0.7 m tall. Branches dark gray, robust, at first sparsely appressed brownish pubescent; leaf scars reniform. Leaves alternate; petiole 2–5 mm, glabrous; leaf blade brownish green abaxially, narrowly oblong-elliptic, 5–11.2 × (1–)1.5–3.8 cm, thickly leathery, adaxially rugose, glabrous except for ciliate margins and apical tuft of hairs, base cuneate-decurrent, margin revolute, apex acute or subobtusate; lateral veins 5–9 per side of midrib. Inflorescences terminal on reduced lateral branches, 5–15-flowered; peduncle to 12 mm, densely rusty pubescent, or absent; bracts narrowly oblanceolate to elliptic, 10–16 × 2.5–3.5 mm, apex acute or rarely obtuse, with apical tuft of hairs. Pedicel absent. Calyx white; tube cylindrical, ca. 8 × 3 mm, exterior appressed brownish pubescent; lobes 4, narrowly ovate, ca. 4 × 1–2 mm, sparsely pubescent, apex slightly acuminate. Stamens 8, lower whorl inserted at middle of calyx tube, upper whorl in throat; filaments ca. 0.5 mm; anthers oblong, ca. 1.5 mm, upper ones ca. 1/2 exerted from calyx tube. Disk cupshaped, ca. 0.5 mm, margin entire. Ovary shortly stipitate, ellipsoid, ca. 1.5 × 0.7 mm, glabrous; style ca. 0.3 mm; stigma capitate. Fruit not seen.

• Forests on limestone hills; 1200–1300 m. W Guangxi (Napo).

Daphne pachyphylla is a member of the group of species closely allied to *D. bholua* and *D. papyracea*, including species nos. 44–50 in this treatment. It is known to us only from the protologue, which suggests that it can most easily be distinguished by the brownish undersides of the thickly leathery leaf blades and by the distinctive, ciliate margins and tufted apices of the leaf blades and bracts.

52. *Daphne taylorii* Halda, Acta Mus. Richnov., Sect. Nat. 7: 10. 2000.

西藏瑞香 *xi zang rui xiang*

Shrubs 0.3–0.5(–1) m tall, branching dichotomous. Branches reddish brown, densely pubescent. Leaves alternate; petiole short; leaf blade glossy dark green adaxially, dull pale green abaxially, oblanceolate, 2.5–5.5 × 0.9–2.2 cm, leathery, abaxially at first sparsely hairy but both surfaces glabrous well before leaf is fully expanded, base cuneate, margin narrowly revolute, apex obtuse or retuse; lateral veins 6–8 per side of midrib. Inflorescences terminal, fasciculate, 2–5(–8)-flowered; peduncle absent; bracts very soon caducous, ovate-elliptic, ciliate. Pedicel 3–4 mm. Calyx exterior purple or dark maroon except for 2 white lobes, interior white; tube cylindrical, 7–12 mm, exterior sericeous; lobes 4, ovate, 3–5 × 3–3.5 mm, apex acute. Stamens 8, lower whorl inserted above middle of calyx tube, upper whorl in throat; filaments almost absent; anthers 1.5–1.75 × 0.3–0.2 mm. Disk annular, very narrow, entire. Ovary pyriform, glabrous; style ca. 0.5 mm; stigma capitate, tiny. Drupe red, ovoid, 8–10 mm.

• Deep shade at base of cliffs; ca. 3500 m. Xizang.

