AQUIFOLIACEAE

冬青科 dong qing ke

Chen Shukun (陈书坤)¹, Ma Haiying (马海英)², Feng Yuxing (俸宇星)³; Gabrielle Barriera⁴, Pierre-André Loizeau⁴

Trees or shrubs, evergreen or deciduous. Leaves alternate, rarely opposite; leaf blade leathery, papery, or membranous, margin entire, serrate, or spinose; stipules minute, persistent or caducous, scar callose; petiole present, rarely absent. Inflorescence a cyme usually of order 1, 2, or 3(–5), respectively composed of a maximum of 1, 3, or 7(–31) developed flowers, axillary, solitary on current year’s branchlets or fasciculate on second year’s branchlets. Plants dioecious. Flowers hypogynous, regular, small, unisexual, by stamens or ovary abortive, 4–6(–23)-merous; calyx persistent; corolla often white or cream, rarely green, yellow, pink, or red; petals imbricate, mostly conuate at base up to half of their length. Male flowers: calyx 4–8-lobed; petals 4–8; stamens isomerous, alternating with petals, epipetalous; anthers oblong-ovoid, introrse, longitudinally dehiscent; rudimentary ovary subglobose or pulvinate, rostrate. Female flowers: calyx 4–8-lobed; petals 4–8; staminodes sagittate or cordate, isomerous, alternating with petals, epipetalous; ovary superior, ovoid, 4–8(–10)-loculed, rarely pubescent; style rarely developed; stigma capitate, discoid, or columnar. Fruit a drupe, red, brown, or black (or green in *Ilex chapaensis*), usually globose; exocarp membranous or papery; mesocarp fleshy. Pyrenes (1–)4–6(–23); endocarp smooth, leathery, woody, or stony, striate, striate-sulcate, or rugose, and/or pitted.

One genus and 500–600 species: tropical and subtropical to temperate regions of both the N and S Hemispheres, mainly in the tropical regions of Central and South America and Asia; 204 species (149 endemic) in China, distributed in regions south of the Chang Jiang and Qinling Mountains, mainly in S and SW China.


*Ilex emarginata* Thunberg (in Murray, Syst. Veg., ed. 14, 168. 1784) is the basionym of *Eurya emarginata* (Thunberg) Makino in the Theaceae (see Fl. China 12: 460. 2007).

*Ilex kingiana* Cockerell (Torreya 11: 264. 1911) is a synonym of *I. insignis* J. D. Hooker (1875), not Heer (1869), but the occurrence of this species in China (Yunnan, 1933, *Comber*) requires confirmation.


*Ilex racemosa* Oliver is the basionym of *Perrottettia racemosa* (Oliver) Loesener in the Dipentodontaceae (see p. 495).

*Ilex rarasanensis* Sasaki (Trans. Nat. Hist. Soc. Formosa 21: 154. 1931), described from Taiwan, could not be treated here because we did not see the type material.


冬青属 dong qing shu

Morphological characters and geographic distribution are the same as those of the family.

The genus is classified into three subgenera. *Ilex* subg. *Byronia* (Endlicher) Loesener has only one species, *I. polypyrnea*, and *I. subg. Prinos* includes 12 species. All other species belong to *I. subg. Ilex* and they are grouped into six sections.

1a. Deciduous trees or shrubs, often with spur branchlets, current year’s branchlets often with conspicuous lenticels; leaf blade membranous, papery, or thinly leathery, rarely subleathery (*I. subg. Prinos*) .................................................. 1. *Ilex polypyrnea*

1b. Evergreen trees or shrubs, without spur branchlets, lenticels mostly absent on current year’s branchlets, and usually equally absent on second and third year’s branchlets, if present, usually on older branchlets; leaf blade leathery or thickly leathery, rarely papery.

2a. Inflorescences: 6-fruited cymes; pyrenes 14 or 15; plant fruiting in July, endemic to Guangxi (*I. subg. Byronia*) ............................................................. 1. *Ilex polypyrnea*

2b. Plants without the above combination of characters (*I. subg. Ilex*).

3a. Female inflorescences: cymes solitary, rarely fasciculate (*I. triflora*), axillary; pyrenes abaxially usually sulcate, smooth, or striate, sometimes concave, or flat, or sulcate, or 2- or 3-striate and 1- or 2-sulcate, rarely convex, never rugose or pitted, endocarp usually leathery, sometimes subwoody, woody, or stony, rarely bony, subbony, or subleathery.

---

¹ Kunming Institute of Botany, Chinese Academy of Sciences, Heilongtian, Kunming, Yunnan 650204, People’s Republic of China.
² School of Life Sciences, Yunnan University, 2 North Green Lake Road, Kunming, Yunnan 650091, People’s Republic of China.
³ Institute of Botany, Chinese Academy of Sciences, 20 Nanxincun, Xiangshan, Beijing 100093, People’s Republic of China.
⁴ Conservatoire et Jardin botaniques de la Ville de Genève, Case postale 60, CH-1292 Chambésy/Genève, Switzerland.
4a. Male inflorescences: cymes solitary, axillary on current year’s branchlets; pyrenes abaxially usually sulcate, sometimes concave, or flat, or 2- or 3-striate and 1- or 2-sulcate, rarely smooth, or 2- or 3-striate and not sulcate, endocarp usually leathery, sometimes subwoody, woody, or stony, rarely bony, subbony, or subleathery (I. sect. Lioprinus) .......................................................... Key 1

4b. Male inflorescences: cymes fasciculate, axillary on current to third year’s branchlets, or solitary on current year’s branchlets; pyrenes abaxially smooth, or striate, rarely convex, 1-sulcate, or 3-striate and sulcate, endocarp leathery, rarely bony (I. sect. Paltoria) ............................................................................................................. Key 2

3b. Male and female inflorescences: usually cymes fasciculate, axillary on current to third year’s branchlets, sometimes solitary, rarely pseudoracemose or pseudopanicle; pyrenes abaxially usually striate and sulcate, or striate only, rarely smooth, sulcate or ridged only, sometimes rugose and/or pitted abaxially and/or laterally, endocarp usually leathery, woody, or stony, rarely subwoody or bony.

5a. Female cymes 1(--3)-flowered; pyrenes usually 4, rarely 1–3 or 6, endocarp usually stoney or woody, rarely leathery or bony (I. sect. Ilex) ............................................................................................................. Key 3

5b. Female cymes 1(--5)-flowered, rarely compound cymes; pyrenes usually 4–6, sometimes 7, rarely 2 or 8, endocarp usually leathery, rarely woody or subwoody.

6a. Male and female inflorescences: cymes fasciculate or pseudopanicle, or compound cymes pseudopanicle; leaf blade 7–20 × 3–7 cm (I. sect. Lauroilex) .......................................................... Key 4

6b. Male and/or female inflorescences: usually cymes fasciculate, sometimes solitary, rarely pseudopanicle or pseudoracemose; leaf blade (1--)4--9(--25) × (0.5--)1.5--3.5(--7) cm (I. sect. Pseudosalix) ............................................. Key 5

**Key 1** (Ilex sect. Lioprinus (Loesener) S. Y. Hu)

1a. Margin of leaf blade entire; pyrenes abaxially 2- or 3-striate and 1- or 2-sulcate, or smooth, or 2- or 3-striate and not sulcate, or 1-sulcate.

2a. Pyrenes abaxially smooth, or 2- or 3-striate and not sulcate, endocarp leathery ................................................. 32. I. excelsa

2b. Pyrenes 2- or 3-striate and 1- or 2-sulcate, rarely 1-sulcate (I. suichangensis), endocarp woody or subwoody.

3a. Male flowers: peduncle 3–13 mm; calyx not ciliate.

4a. Leaf blade 4–9 × 1.8–4 cm .................................................................................................................. 33. I. rotunda

4b. Leaf blade 3.5–5 × 1.5–2 cm ............................................................................................................. 34. I. angulata

3b. Male flowers (not seen in I. suichangensis): peduncle 14–25 mm; calyx ciliate.

5a. Pyrenes 6–10 ........................................................................................................................................ 35. I. umbellulata

5b. Pyrenes 5 or 6.

6a. Fruit ca. 10 mm in diam., pyrenes narrowly ellipsoidal, 9–10 mm, abaxially 1-sulcate; branchlets, peduncles, and pedicels glabrous ........................................................................................................ 36. I. suichangensis

6b. Fruit ca. 4 mm in diam., pyrenes ellipsoidal, 2–2.5 mm, abaxially 3-striate and 2-sulcate; branchlets, peduncles, and pedicels pubescent .................................................................................. 37. I. godajam

1b. Margin of leaf blade usually entire, rarely serrate, crenate, crenate-serrate, or serrulate; pyrenes abaxially usually sulcate, sometimes concave or flat.

7a. Margin of leaf blade entire, leathery or thickly leathery, rarely thinly leathery.

8a. Inflorescence: a compound cyme, secondary axis well developed; leaf blade 9–19 × 3.5–8.5 cm .......... 2. I. maclurei

8b. Female inflorescence or inflorescence: a simple cyme, secondary axis not developed; leaf blade (2--)3--17 × 1–8.5 cm.

9a. Leaf blade linear-lanceolate, lanceolate, or narrowly obovate, 9–16 × 1.1–5 cm.

10a. Current year’s branchlets purple-black, glabrous; leaf blade reticulate veins adaxially obscure .... 3. I. jiuhanshanensis

10b. Current year’s branchlets sulfur-colored curved pubescent; leaf blade reticulate veins adaxially evident .................................................................................................................. 4. I. lancilimba

9b. Leaf blade not above-mentioned shapes, (2--)3--17 × 1–8.5 cm.

11a. Fruiting pedicels 0.5–1 mm, much shorter than peduncles ................................................................. 5. I. tugitakayamensis

11b. Female flowers: pedicels or fruiting pedicels 3–8 mm.

12a. Plant densely pubescent.

13a. Leaf blade leathery, 3–11 × 1–3.2 cm ............................................................................................. 6. I. dasyphylla

13b. Leaf blade thinly leathery, 4–11 × 2–4.5 cm .................................................................................. 7. I. loniceraefolia

12b. Plant glabrous.

14a. Peduncle 1.2–3.3 cm ....................................................................................................................... 8. I. sterophylla

14b. Peduncle shorter than 2 cm.

15a. Fruit (6--)9--10(--12) mm in diam. ................................................................................................. 9. I. editicostata

15b. Fruit 5–7 mm in diam.

16a. Branchlets and petioles stout; fruit with persistent calyx not ciliate ........................................... 10. I. robusta

16b. Branchlets and petioles slender; fruit with persistent calyx ciliate.
Key 2 (Ilex sect. Paltoria (Ruiz & Pavon) Maximowicz)

1a. Leaf blade abaxially punctate; pyrenes 4, 3–5 mm in diam., abaxially usually smooth, striate, not sulcate.... 11. I. litseifolia

1b. Leaf blade midvein adaxially glabrous, reticulate veins evident on both surfaces, petiole pubescent; pyrenes smooth when dry, abaxially shallowly sulcate ......................................................... 12. I. lineata

7b. Margin of leaf blade entire, serrate, crenate, crenate-serrate, or serrulate, leathery or subleathery, rarely papery, or papery to leathery.

18a. Branchlets glabrous throughout, sometimes current year’s branchlets and terminal bud puberulent or glabrescent.

19a. Leaf blade 12–18 × 4–7 cm.

20a. Leaf blade midvein abaxially densely yellow tomentose or glabrous .................................................... 13. I. atrata

20b. Leaf blade midvein abaxially glabrous.

21a. Branchlets brown-yellow; leaf blade thinly leathery to papery, margin entire ...................... 14. I. machilifolia

21b. Branchlets purple-black; leaf blade papery, margin sparsely and shallowly serrulate ............ 15. I. pseudomachilifolia

19b. Leaf blade 2.5–11.7 × 1–5.5 cm.

22a. Inflorescences: often cymes umbelliform, rarely 1-flowered cymes; fruiting peduncles and pedicels
   1.5–2.8 cm.

22b. Inflorescences: cymes usually not umbelliform; fruiting peduncles and pedicels 0.5–3.5 cm.

24a. Leaf blade broadly elliptic, similar to pear leaves, margin serrulate or serrate; pyrenes oblong,
   endocarp stony ................................................................. 18. I. pyrifolia

24b. Leaf blade elliptic, oblong-elliptic, lanceolate, or oblong, rarely ovate, margin crenate, sometimes
   serrate (when young), entire or sparsely serrulate; peduncles with endocarp leathery, thickly
   leathery, or substone.

25a. Fruit narrowly globose or subglobose; leaf blade deep brown when dry.

26a. Leaf blade glabrous throughout, rarely adaxially pilose on midvein when young ................... 19. I. chinensis

26b. Leaf blade of all young leaves and midvein of mature leaves adaxially puberulent ................... 20. I. pubigera

25b. Fruit globose; leaf blade purple-brown or yellowish brown when dry.

27a. Leaf blade 6–11.5 × 3–6 cm ........................................................ 21. I. melanophylla

27b. Leaf blade 4–11.7 × 1.5–4.3 cm .................................................... 22. I. ficifolia

18b. Branchlets densely pubescent, hirsute, or at least puberulent.

28a. Leaf blade oblong, obovate, lanceolate, or ovate-elliptic, 5–22 × 3.5–10 cm; inflorescences 3- or more
   flowered cymes; fruit 7–10 mm in diam.

29a. Leaf blade with midvein flat adaxially ................................................................. 25. I. dehongensis

29b. Leaf blade with midvein impressed adaxially.

30a. Male inflorescences with peduncles 1.5–2.8 cm ................................................................. 24. I. latifrons

30b. Male inflorescences with peduncles 0.9–1.2 cm ................................................................. 23. I. kwangtungensis

28b. Leaf blade ovate, ovate-elliptic, elliptic, oblong-elliptic, or elliptic-lanceolate, 2–12 × 1.5–5(–7.5)
   cm; female inflorescences usually 1–3-flowered, rarely 3–6-flowered cymes; fruit 5–10 mm in diam.

31a. Leaf blade margin sparsely serrate, undulate, or indistinctly serrulate, blade elliptic, glabrous except
   midvein puberulent adaxially.

32a. Leaf blade 9–11 × 4–5 cm .................................................................................... 26. I. cheniana

32b. Leaf blade 5–9 × 2.5–3.5(–7.5) cm .................................................................................... 27. I. qianlingshanensis

31b. Leaf blade margin sparsely crenate-serrate, sometimes entire or undulate-crenulate, both
   surfaces hirsute or adaxially only midvein pubescent.

33a. Leaf blade leathery, ovate or ovate-elliptic, 2–7 × 1.5–3.5 cm, both surfaces ferruginous villous ...... 28. I. ferruginea

33b. Leaf blade papery, leathery, or thinly leathery, elliptic, oblong-elliptic, or elliptic-lanceolate,
   6–12 × 2–4 cm, both surfaces densely hirsute, yellow tomentose, or rarely adaxially only on midvein.

34a. Leaf blade 8–12 cm, margin entire ........................................................................... 29. I. manneiensis

34b. Leaf blade 6–9 cm, margin sparsely crenate-serrate or undulate-crenulate.

35a. Fruiting peduncles ca. 15 mm .................................................................................... 30. I. hirsuta

35b. Fruiting peduncles 3–5 mm ..................................................................................... 31. I. longzhouensis
3a. Flowers 4- or 5-merous; leaf blade ovate, ovate-lanceolate, ovate-elliptic, elliptic, or ovate-oblong, (2–3–8 × (1–)2–4 cm; male cymes 1–7-flowered, solitary on current year’s branchlets, rarely fasciculate ........................................... 39. I. szechwanensis

3b. Flowers 4-merous; leaf blade usually obovate or elliptic, rarely obovate-elliptic or oblong-elliptic, 0.5–7 × 0.4–3 cm; male cymes fasciculate on current year’s branchlets or solitary.

4a. Leaf blade elliptic or broadly elliptic, 0.5–3 × 0.4–1.5 cm, petiole 2–4 mm.

4b. Leaf blade obovate, elliptic, obovate-elliptic, or oblong-elliptic, 1–7 × 0.5–3 cm, petiole usually longer than 4 mm.

6a. Leaf blade 1–3.5 × 0.5–1.5 cm; fruiting pedicel 4–6 mm; persistent stigma thickly discoid; pyrenes oblong-ellipsoidal, abaxially smooth, striate, not sulcate ........................................... 42. I. crenata

6b. Leaf blade 2–7 × 1–3 cm; fruiting pedicel longer than 7 mm; pyrenes abaxially convex, striate, and slightly rugose or smooth and 5-striate.

7a. Petioles 4–6 mm, lateral veins evident on both surfaces of leaves; fruit 9–11 mm in diam., persistent stigma discoid-mammilliform; pyrenes ellipsoidal, abaxially convex, striate, and slightly rugose .................. 43. I. viridis

7b. Petioles 5–10 mm, lateral veins indistinct on both surfaces of leaves; fruit 7–8 mm in diam., persistent stigma thinly discoid; pyrenes ovoid-ellipsoidal, abaxially smooth, 5-striate .................. 44. I. maximowicziana

1b. Leaf blade abaxially not punctate; pyrenes 4 or 5(5 or 6), 1–3 mm in diam., abaxially usually smooth, neither striate nor sulcate, rarely 1-striate, or 1-sulcate, or 3-striate and sulcate.

8a. Pyrenes abaxially smooth, longitudinally 1-striate; pedicel of female flower 4–4.5 cm; leaf blade 4–12.5 cm, petiole 1.5–2.5 cm ........................................................................... 45. I. pedunculosa

8b. Pyrenes abaxially smooth, neither striate nor sulcate, rarely 3-striate and sulcate, or 1-sulcate; pedicel of female flower 0.2–1.5 cm; leaf blade 1–5.7 cm, petiole 2–8 mm.

9a. Pyrenes 3-striate and sulcate, or 1-sulcate.

10a. Pyrenes 4, ellipsoidal, ca. 2 mm, ca. 1 mm in diam., abaxially longitudinally 1-sulcate; leaf blade ovate-oblong, apex long acuminate, base cuneate ........................................ 52. I. nanchuanensis

10b. Pyrenes 4 or 5, oblong, 4–5 mm, 2.5–3 mm in diam., abaxially thickly 3-striate; leaf blade elliptic-ovate, apex acute or slightly obtuse, base gradually shortly attenuate or truncate to briefly cuneate .......................................... 53. I. shennongjiaensis

9b. Pyrenes smooth, neither striate nor sulcate.

11a. Branchlets pubescent, puberulent, glabrescent, or glabrous; leaf blade elliptic or ovate-elliptic.

12a. Fruit 7–8 mm in diam., persistent stigma discoid; fruiting pedicel 13–15 mm ........................................... 48. I. sugerokii

12b. Fruit 4–5 mm in diam., persistent stigma mamilloform; fruiting pedicel 7–12 mm.

13a. Leaf blade thickly leathery, elliptic, 5–5.7 × 3–3.3 cm, apex acute or shortly acuminate; fruiting pedicel ca. 7 mm, fruit ca. 5 mm in diam. ......................................................... 46. I. reticulata

13b. Leaf blade subleathery, elliptic or ovate-elliptic, 3–3.5 × 2–3 cm, apex acuminate or caudate-acuminate; fruiting pedicel 8–12 mm, fruit 4–5 mm in diam. ......................................................... 47. I. subcoriacea

11b. Branchlets densely tomentose, densely villous, or densely pubescent; leaf blade ovate, ovate-lanceolate, ovate-elliptic, elliptic, oblong, oblong-lanceolate, or obovate-oblong.

14a. Leaf blade obovate-oblong or oblong, 1–3 × 0.6–1.4 cm, apex rounded or obtuse, lower half of margin entire, upper half of margin crenulate-serrate; old branchlets gray-brown or smoky pubescent; fruiting pedicel ca. 6 mm ......................................................... 49. I. rockii

14b. Leaf blade ovate, ovate-elliptic, ovate-lanceolate, elliptic, or oblong-lanceolate, 2–4.5 × 1–2.5 cm, apex shortly acuminate or acute and mucronate, margin crenulate-serrate, crenate-serrate, entire, or spinulose-serrate; branchlets densely tomentose, or densely golden yellow villous, older branchlets densely ferruginous tomentose; fruiting pedicel 5–15 mm.

15a. Branchlets, leaf blades, petioles, and fruiting pedicels densely tomentose; leaf blade ovate or ovate-elliptic, apex shortly acuminate, lateral veins 7 or 8 pairs, evident on both surfaces; fruiting pedicel 12–15 mm, nodose at middle; fruit 7–8 mm in diam.; pyrenes 5 ......................................................... 50. I. ludianensis

15b. Branchlets, petioles, and leaf midvein abaxially densely pubescent, villous, or tomentose; leaf blade ovate, ovate-lanceolate, oblong, oblong-lanceolate, or elliptic, apex acute and mucronate, lateral veins obscure on both surfaces; fruiting pedicel 5–15 mm, without node; fruit 5–6 mm in diam.; pyrenes 4 .............................................................. 51. I. yunnanensis

Key 3 (Ilex sect. Ilex)

1a. Margin of leaf blade usually spinose, if not, then with 1 spine at apex.
2a. Pyrenes 4, abaxially sulcate or ridged, irregularly rugose and pitted, endocarp bony, rarely stony, or woody.
3a. Leaf blade thickly leathery, quadrangular-oblong, margin with 1 or 2 spines per side, apex with 1 strong spine; fruiting pedicel 1.3–1.4 cm


54. I. cornuta

3b. Leaf blade thinly to thickly leathery, not quadrangular, margin 3–10 spines per side; fruiting pedicel 2–8 mm.
4a. Leaf blade thinly to thickly leathery, elliptic or oblong-elliptic, lanceolate, oblanceolate, or ovate-lanceolate, 6–12.5 cm, margin sharply serrate; male cymes 3-flowered; fruit 8–12 mm in diam., persistent stigma thickly discoid or nearly mammilliform


55. I. hylonoma

4b. Leaf blade leathery, ovate-elliptic, or elliptic-lanceolate, 3–9 cm, margin spinose-dentate or spinulose-serrate in 3–10 pairs; male cymes 1-flowered; fruit 6–8 mm in diam., persistent stigma navel-shaped or thinly discoid.
5a. Leaf blade elliptic-lanceolate, 4–9 × 1.5–2.8 cm, apex acuminate, spinose, margin spinose-dentate in 3–10 pairs; fruiting pedicel ca. 2 mm, fruit globose, 6–7 mm in diam., persistent stigma thinly discoid; pyrenes abaxially longitudinally 1-ridged


56. I. centrochinesis

5b. Leaf blade ovate-elliptic or elliptic, 3–6 × 1.5–3 cm, apex acute, without spine, margin sparsely spinulose-serrate in 4–7 pairs; fruiting pedicel 4–8 mm, fruit globose, 7–8 mm in diam., persistent stigma navel-shaped or discoid; pyrenes abaxially not longitudinally 1-ridged


57. I. zhejiangensis

2b. Pyrenes 2 or 4, rarely 1 or 3, abaxially striate and sulcate, rarely only striate, endocarp woody, rarely stony or leathery.
6a. Prostrate shrubs, 20–30 cm tall; leaf blade hexangular-subrhombic, 1–3.2 × 0.7–1.5 cm, shiny, rugose adaxially; pyrene 1, abaxially palmately striate, not sulcate


58. I. perryana

6b. Erect shrubs or trees; leaf blade not hexangular-subrhombic, not rugose adaxially; pyrenes 2 or 4, rarely 1 or 3, abaxially striate and sulcate, rarely only striate.
7a. Trees, rarely shrubs.
8a. Pyrenes (1 or)2(–4), oblong-ellipsoidal or subglobose; leaf blade elliptic-oblong, elliptic, or ovate-elliptic, 4–10 cm, margin with 3–14 pairs of spines


68. I. dipyrena

8b. Pyrenes 3 or 4, ovoid-ellipsoidal, oblong, or ovoid; leaf blade oblong, ovate-oblong, ovate, or elliptic, 3.5–8 cm, margin with 2–8 pairs of spines.
9a. Pyrenes 3, ovoid-ellipsoidal, ca. 5 mm, ca. 3 mm in diam.; leaf blade ovate-oblong, ovate, or elliptic, 5.5–8 cm, base subrounded or obtuse, margin with 4–8 pairs of spines, petiole 5–8 mm ...


69. I. dabieshanensis

9b. Pyrenes 4, oblong or ovoid, 6–8 mm, 4–5 mm in diam.; leaf blade oblong or ovate-oblong, 3.5–7 cm, base truncate or subcordate, margin with 2–5 pairs of large spines, petiole ca. 2 mm ...


70. I. chengkouensis

7b. Shrubs or small trees.
10a. Pyrenes 1 or 2.
11a. Leaf blade oblong-elliptic, 7–8 × 2–2.5 cm, margin entire; fruit globose, 8–12 mm in diam., pyrenes 1 or 2, oblong, ca. 8 mm, ca. 5.5 mm in diam., striate and sulcate


64. I. synpyrena

11b. Leaf blade lanceolate, ovate-lanceolate, or ovate to rhombic, elliptic, or ovate-elliptic, 1.8–5.5 × 0.7–2.5 cm, apex and margin spinose-serrate; fruit obvoid-ellipsoidal or ellipsoidal, 3–7 mm in diam., pyrenes often 2, abaxially palmately striate and sulcate.
12a. Leaf blade lanceolate or ovate-lanceolate; fruit obvoid-ellipsoidal


65. I. georgei

12b. Leaf blade ovate to rhombic, or elliptic or ovate-elliptic; fruit ellipsoidal.
13a. Leaf blade ovate to rhombic, apex acuminate, with spine ca. 3 mm, margin with 3 or 4 pairs of strong spines; pyrenes 2, ovoid or subglobose, 5–6 mm, 4–5 mm in diam. ...


66. I. bioritsensis

13b. Leaf blade elliptic or ovate-elliptic, apex shortly acuminate or acute, with a weak spine, margin with 4–6 pairs of thin spines; pyrenes (1 or)2(–3), obvoid, ca. 5 mm, ca. 3.5 mm in diam. ...


67. I. ciliospinosa

10b. Pyrenes 4.
14a. Leaf blade thinly leathery, oblong-lanceolate, oblong-ovate, or narrowly oblong, 4.5–6 × 2–2.5 cm, petiole 3–9 mm; endocarp stony


59. I. wagongshanensis

14b. Leaf blade leathery, elliptic, or ovate-ovate, 1.5–6.5 × 0.5–3 cm, petiole 1–4 mm; endocarp woody.
15a. Leaf blade elliptic, 1.5–3 × 0.7–1.5 cm, base acute, lateral veins adaxially impressed; branchlets and petioles glabrous; pyrenes abaxially palmately striate, not sulcate


60. I. migliensis

15b. Leaf blade ovate or ovate-lanceolate, base truncate, rounded, or obtuse, lateral veins adaxially not impressed; branchlets and petioles pubescent; pyrenes abaxially striate and sulcate, or striate but not sulcate.
16a. Leaf blade basally obtuse, lateral veins 6 or 7 pairs, adaxially obscure, petiole 3–4 mm; fruit globose, 5–5.5 mm in diam., persistent stigma mammilliform


61. I. euryoides

16b. Leaf blade basally truncate or rounded, lateral veins 1–5 pairs, adaxially evident or obscure, petiole 1–2 mm; fruit depressed globose or globose, 7–8 mm in diam., persistent stigma discoid or navel-shaped.
17a. Leaf blade ovate or ovate-lanceolate, 1.5–3 cm, margin with 1–3 pairs of spines, lateral veins 1–3 pairs, adaxially obscure; pyrenes obvoid or oblong, abaxially palmately striate and sulcate ... 62. *I. pernyi*

17b. Leaf blade ovate, 3–6.5 cm, margin with 3–7 pairs of spines, lateral veins 4 or 5 pairs, adaxially evident; pyrenes subglobose, abaxially palmately striate, not sulcate .................. 63. *I. wenkowensis*

1b. Margin of mature leaf blade never spineose.

18a. Fruit (3–)6–12(–26) mm in diam., persistent stigma thinly discoid or discoid, rarely thickly discoid, sometimes navel-shaped; pyrenes irregularly rugose and/or pitted, rarely not rugose or pitted, usually abaxially striate and sulcate, rarely only striate or only sulcate, endocarp stony or woody, rarely bony, leathery or subwoody.

18b. Ovary and/or fruit glabrous.

19a. Ovary and/or fruit pubescent.

20a. Fruit ovoid-globose, ca. 10 mm, ca. 8 mm in diam., persistent stigma thickly discoid; leaf blade ovate-oblong or oblong-lanceolate, 7.5–10 cm, apex abruptly acuminate, base cuneate .......... 71. *I. trichocarpa*

20b. Fruit globose or depressed globose, 5–11 mm, 7–12 mm in diam., persistent stigma navel-shaped or thinly discoid; leaf blade oblong to oblong-elliptic or elliptic, apex acute or shortly acuminate, base cuneate, obtuse, or rounded.

21a. Fruit globose, 9–12 mm in diam., persistent stigma navel-shaped; leaf blade oblong to oblong-elliptic, 10–18 × 4.5–7.5 cm, lateral veins 14 or 15 pairs, and reticulate veins evident on both surfaces, petiole 2–2.2 cm ................................................................. 72. *I. kaushue*

21b. Fruit depressed globose, 7–8 mm in diam., persistent stigma thinly discoid; leaf blade elliptic, rarely ovate-elliptic or lanceolate, 3–7 × 1.5–2.5 cm, lateral veins 6–8 pairs, and reticulate veins indistinct on both surfaces, petiole 3–6 mm ........................................................................................................ 73. *I. pubilimba*

19b. Ovary and/or fruit glabrous.

22a. Leaf blade 8–36 × 4.5–13 cm.

22b. Leaf blade usually shorter than 11 cm, sometimes longer than 11 cm, usually less than 5 cm wide, rarely to 7.5 cm wide.

23a. Large trees, to 20 m tall; leaf blade oblong or ovate-oblong, 8–19(–28) × 4.5–7.5(–9) cm, apex obtuse or shortly acuminate, base rounded or broadly cuneate; flowers yellowish green; fruit globose, ca. 7 mm in diam., pyrenes oblong-ellipsoidal, ca. 5 mm, abaxially longitudinally ridged ...................... 74. *I. latifolia*

23b. Shrub or small trees; leaf blade elliptic or oblong, (20–)30–36 × (8–)9–13 cm, apex acuminate or falcate-acuminate, base obtuse or broadly cuneate; flowers purple-red; fruit subglobose, ca. 8 mm in diam., pyrenes ellipsoidal, ca. 6 mm, abaxially longitudinally deeply sulcate ................................. 75. *I. perlata*

24a. Branchlets, petioles, and fruiting pedicels glabrous, rarely fruiting pedicels puberulent, pubescent, or glabrescent or petioles puberulent (*I. chingiana var. puberula)*.

25a. Fruit likely more than 12 mm in diam.; leaf blade thickly leathery, oblong, elliptic, oblong-elliptic, or oblanceolate, 11–15 × 4–5.2 cm ........................................................................................................ 76. *I. chingiana*

25b. Fruit rarely more than 12 mm in diam.; leaf blade usually leathery, rarely thickly leathery, or subleathery, ovate, obovate, ovate-elliptic, elliptic, or oblong-, obovate-, or lanceolate-elliptic, usually shorter than 11 cm and less than 4 cm wide.

26a. Shrub or small trees.

26b. Medium-sized trees, 7–20 m tall.

27a. Shrubs; leaf blade oblong-elliptic, 7–8.5 × 2–2.5 cm, margin sparsely crenate-serrate ........ 77. *I. yangchunensis*

27b. Small trees; leaf blade elliptic, obovate, or obovate-elliptic, margin entire.

27a. Leaf blade elliptic, apex shortly acuminate or obtuse, lateral veins 5 or 6 pairs, petiole 4–7 mm; fruit ca. 5 mm in diam., pyrenes oblong-obovoid, ca. 3 mm, ca. 2 mm in diam., abaxially palmately striate, not sulcate ......................................................... 78. *I. suzuki*

27b. Leaf blade obovate or obovate-elliptic, rarely oblanceolate, apex obtuse-rounded, lateral veins 6–9 pairs, petiole 10–15 mm; fruit 10–12 mm in diam., pyrenes broadly ellipsoidal, ca. 7 mm, ca. 4 mm in diam., abaxially irregularly rugose, pitted and striate ........................................ 79. *I. integra*

29a. Fruit globose, 10–15 mm in diam., densely tuberculate, or glandular punctate.

30a. Leaf blade lanceolate-elliptic, base acute to attenuate, lateral veins 7–9 pairs; fruit 1.2–1.5 cm in diam., pyrenes 6 ................................................................. 82. *I. chenghuensis*

30b. Leaf blade ovate or obovate to elliptic, base obtuse or cuneate, rarely rounded, lateral veins 6–8, 10, or 11 pairs; fruit 1–1.2 cm in diam., pyrenes 4.

31a. Leaf blade oblong-elliptic, abaxially brown glandular punctate; fruit glandular punctate, pyrenes oblong, abaxially broadly sulcate, irregularly rugose and pitted ........................................... 80. *I. tenius*

31b. Leaf blade ovate or oblong-elliptic, abaxially not glandular punctate; fruit densely tuberculate, pyrenes ovoid-ellipsoidal, irregularly rugose and pitted, not sulcate abaxially ............................................................. 81. *I. subficoidea*

29b. Fruit oblong, obovoid-oblong, depressed globose, or globose, less than 9 mm in diam., not tuberculate or punctate.
32a. Fruit oblong or obovoid-oblong, 4–4.5 mm, ca. 3 mm in diam., pyrenes oblong-ellipsoidal, ca. 3.5 mm, ca. 2 mm in diam. ................................................................. 83. *I. oblonga*

32b. Fruit globose or depressed globose, 3–8 mm in diam., pyrenes ellipsoid, ovoid-globose, oblong, obovoid, or oblong-ellipsoidal, 3–6 mm.

33a. Fruit globose or depressed globose, 6–7 mm in diam., persistent stigma navel-shaped, pyrenes oblong or ellipsoid .................................................................................. 84. *I. denticulata*

33b. Fruit globose, persistent stigma discoid, pyrenes oblong-ellipsoid, ovoid-globose, or obovoid.

34a. Fruit 6–8 mm in diam., pyrenes oblong-ellipsoid or ovoid-globose, 5–6 mm, abaxially striate and sulcate; current year’s branchlets stout, longitudinally sharply angular; leaf blade narrowly elliptic or elliptic, 7.5–20 × 3–7.5 cm ......................................................... 85. *I. pentagona*

34b. Fruit 3–6 mm in diam., pyrenes obovoid, 3–4 mm, throughout striate and irregularly rugose and sulcate, or abaxially 1-sulcate, nearly smooth and laterally striate-rugose; branchlets slender, longitudinally ridged; leaf blade ovate-elliptic or elliptic, 2.5–8 × 1–3 cm .................................................................................. 86. *I. tsangii*

24b. Current year’s branchlets pubescent to glabrescent, not glabrous; petiole rarely glabrous; female flowers or fruit pedicle pubescent to glabrescent.

35a. Shrubs, ca. 2 m tall; leaf blade abaxially glandular punctate, lateral veins obscure on both surfaces ...... 87. *I. occulta*

35b. Trees, 6–25 m tall; branchlets not tuberculate; leaf blade subleathery, rarely thinly or thickly leathery, leathery, or papery, lateral veins adaxially bony or leathery.

36a. Trees, 20–25 m tall; leaf blade elliptic or obovate-elliptic; male inflorescences 1-flowered cymes, fasciculate.

37a. Branchlets densely pubescent; leaf blade elliptic, rarely lanceolate or ovate-elliptic, apex shortly acuminate, lateral veins 7 or 8 pairs and reticulate veins obscure adaxially; fruit subglobose, persistent stigma discoid, endocarp woody ................................................................. 88. *I. nanningensis*

37b. Young branchlets puberulent or glabrescent; leaf blade elliptic or obovate-elliptic, apex abruptly shortly acuminate, lateral veins 8 or 9 pairs and reticulate veins raised on both surfaces; fruit globose, persistent stigma navel-shaped, endocarp stony ................................. 89. *I. uraiensis*

36b. Small trees, 6–9 m tall; leaf blade obovate-elliptic, elliptic, obovate, obovate-lanceolate, oblong-elliptic, lanceolate, oblong, or narrowly elliptic; male inflorescences 3-flowered cymes, fasciculate.

38a. Branchlets and petioles densely puberulent, leaf midvein puberulent adaxially ................................. 90. *I. ningdeensis*

38b. Young branchlets pubescent to glabrescent, leaf midvein adaxially slightly pubescent or glabrous, petioles glabrous or minutely or sparsely puberulent.

39a. Fruit ca. 10 mm in diam., persistent stigma navel-shaped, pyrenes broadly ellipsoidal, 6–7 mm, abaxially palmately striate and sulcate; leaf blade 8–13.5 × 3–4.5 cm, apex shortly acuminate, margin undulate-crenulate ................................................................. 91. *I. mucilicava*

39b. Fruit 5–6 mm in diam., persistent stigma thinly discoid, flat, pyrenes subglobose, ca. 4 mm, rugose and irregularly striate and sulcate; leaf blade 2–7.5 × 1.5–3.5 cm, apex retuse, margin subentire or sparsely minutely serrate .................................................. 92. *I. graciliflora*

18b. Fruit (3–)4–6–(8–8) mm in diam., persistent stigma thinly to thickly discoid, rarely capitate, navel-shaped, or mammilliform; pyrenes sometimes irregularly rugose and/or pitted, usually not rugose or pitted, usually abaxially striate and sulcate, sometimes only striate, endocarp usually stony, sometimes woody, rarely bony or leathery.

40a. Leaf blade usually subleathery, rarely thinly or thickly leathery, leathery, or papery, lateral veins adaxially usually impressed, rarely raised or flat; fruiting pedicel (2–)4–7(–10) mm.

41a. Branchlets verrucose, verruculose, corky verruculose, or tuberculate; leaf blade 0.5–5 cm, rarely 7.5–9 cm.

42a. Prostrate shrubs; leaf blade obovate-elliptic, 0.5–2 × 0.3–0.9 cm, petiole 1–2 mm ........................................... 93. *I. intricata*

42b. Erect shrubs or trees; leaf blade usually broadly elliptic, oblong-ovate, or ovate, rarely elliptic-lanceolate, oblong-elliptic, linear-lanceolate, elliptic, oblong, or oblong-elliptic, petiole 4–20 mm.

43a. Fruit 3–3.5 mm in diam.; leaf blade papery, broadly elliptic, rarely broadly obovate or broadly ovate, 0.5–1.7 × 0.5–1.2 cm, lateral veins 3 or 4 pairs, petiole 4–5 mm ................................................................................. 94. *I. nothofagifolia*

43b. Fruit 4–5 mm in diam.; leaf blade leathery or subleathery, ovate-oblong, ovate, elliptic-lanceolate, obovate-elliptic, linear-lanceolate, elliptic, oblong, or oblong-elliptic, (2–)4–9 × (0.7–)1–5.5 cm, lateral veins 5–18 pairs, petiole (0.5–)1–2 cm.

44a. Pyrenes puberulent, fruit ca. 4 mm in diam.; leaf blade leathery, ovate-oblong or ovate, 7.5–9 × 4–5.5 cm, lateral veins 17 or 18 pairs, petiole 1.5–2 cm ......................................................... 95. *I. liana*

44b. Pyrenes glabrous, fruit ca. 5 mm in diam.; leaf blade subleathery, elliptic-lanceolate, obovate-elliptic, linear-lanceolate, elliptic, oblong, or oblong-elliptic, (2–)4–5–(8–8) × (0.7–)1–2–(2–2.5) cm, lateral veins 5–7 pairs, petiole (0.5–)1–1.5 cm ................................................................. 96. *I. delavayi*

41b. Branchlets not tuberculate; leaf blade 5–15.5 cm, rarely only 2–3 cm.
45a. Small shrubs, ca. 1 m tall; leaf blade 2–3 × 0.7–1 cm, lateral veins 4 pairs, petiole 2–3 mm ................. 97. *I. xizangensis*
45b. Trees, rarely shrubs, (2–)3–18 m tall; leaf blade 5–15 × 1.5–5.5 cm, lateral veins 8–15 pairs, petiole 0.8–5 cm.

46a. Terminal buds 1.5–2.5 cm; leaf blade elliptic, obovate-elliptic, or oblanceolate.

47a. Terminal buds ellipsoid-conical, ca. 1.5 cm, bud scales glabrous, margin serrate; leaf blade narrowly elliptic or obovate-elliptic, 5–14 × 2–4.5 cm; male inflorescences 1–3-flowered cymes, fasciculate; pyrenes pilose ........................................................................................................ 98. *I. hookeri*

47b. Terminal buds ovoid, 1.5–2.5 cm, bud scales abaxially densely puberulent, margin entire; leaf blade elliptic, obovate-elliptic, or obovate-lanceolate, 10–15.5 × 3–5.5 cm; male inflorescences 3–7-flowered cymes, fasciculate; pyrenes glabrous or sparsely pubescent ................................................................. 99. *I. sikkimensis*

46b. Terminal buds shorter than 1 cm; leaf blade obovate-lanceolate, linear-oblong-lanceolate, oblanceolate, or oblanceolate, rarely obovate, linear-lanceolate, linear, or elliptic to elliptic-lanceolate.

48a. Infructescence a 1-fruited cyme, pseudoracemose, fruiting pedicel equaling diam. of fruit, puberulent ...................................................................................................................................... 100. *I. melanotricha*

48b. Infructescence a 1-fruited cyme, fasciculate, fruiting pedicel shorter to longer than diam. of fruit, glabrous.

49a. Male flowers: petals oblong, not ciliate; leaf blade usually oblong-lanceolate or obovate-elliptic, 6–12.5 × 2–4.2 cm, margin serrulate ................................................................. 101. *I. franchetiana*

49b. Male flowers: petals obovate-oblong, ciliate; leaf blade usually obovate-oblong or linear-oblong-lanceolate, 5–13 × 1.5–2.5 cm, margin proximally entire, distally sparsely serrulate .................................. 102. *I. fargesii*

40b. Leaf blade usually leathery, sometimes thinly leathery or papery, rarely thickly leathery, or subleathery, lateral veins adaxially obscure, flat (including evident ones), or slightly raised to raised, rarely slightly impressed; fruiting pedicel (1–)2–4–(8) mm.

50a. Young branchlets and petioles pubescent or puberulent, rarely young branchlets glabrescent or glabrous.

51a. Ovary and fruit pubescent or puberulent.

52a. Small trees; leaf blade elliptic or oblong-elliptic, apex abruptly caudate-acuminate, acumen 1–1.5 cm ............................................................................................................................................... 103. *I. gracilis*

52b. Shrubs; leaf blade oblong, oblong-elliptic, or ovate-elliptic, apex acuminate or shortly acuminate.

53a. Infructescences: 1-fruited cymes, pseudoracemose, axillary on current year’s branchlets, axis 2–5 mm; fruiting pedicels ca. 2 mm; bracteoles ovate; leaf blade papery, oblong or oblong-elliptic, 5–9 cm ................................................................. 104. *I. dasyclada*

53b. Infructescences: 1-fruited cymes, fasciculate, axillary on second year’s branchlets; fruiting pedicels 2–3 mm; bracteoles lanceolate; leaf blade leathery, ovate-elliptic, 4–7 cm ................. 105. *I. wangiana*

51b. Ovary and fruit glabrous, rarely puberulent.

54a. Leaf blade papery, rarely thinly leathery.

55a. Leaf blade papery or thinly leathery, apex abruptly acuminate, lateral veins 7 or 8 pairs, petiole 10–15 mm ............................................................................................................................................... 108. *I. chartaceaefolia*

55b. Leaf blade papery, apex shortly to long acuminate, lateral veins 9 or 10 pairs, petiole 6–10 mm.

56a. Leaf blade oblong or elliptic, 8–10 × 3–4 cm, abaxially minutely glandular punctate, margin minutely crenulate-serrate .............................................................................................. 106. *I. dicarpa*

56b. Leaf blade broadly lanceolate, narrowly elliptic, or oblong, 7–9 × 2–3.2 cm, abaxially not glandular punctate, margin sparsely undulate-serrulate ........................................................................ 107. *I. nubicola*

54b. Leaf blade leathery, rarely thinly leathery or subleathery.

57a. Ovary or fruit tuberculate.

58a. Fruiting pedicel ca. 2.5 mm, fruit globose or subglobose, persistent stigma discoid; leaf blade ovate, ovate-lanceolate, or oblong, 4–8 cm, margin irregularly sparsely and shallowly serrate .... 109. *I. buergeri*

58b. Fruiting pedicel 3–6 mm, fruit ellipsoidal or subglobose-ellipsoidal, persistent stigma thickly discoid; leaf blade oblong, oblong-elliptic, ovate-elliptic, or lanceolate, margin sparsely crenulate, coarsely sharply serrate, sparsely serrulate, or subentire.

59a. Male inflorescences 1–3-flowered cymes, fasciculate; leaf blade oblong-elliptic or lanceolate, midvein impressed adaxially, lateral veins 5–8 pairs, margin sparsely crenulate or coarsely sharply serrate ........................................................................................................ 110. *I. subrugosa*

59b. Male inflorescences 1–3-flowered cymes, fasciculate; leaf blade oblong, elliptic-elliptic, or ovate-elliptic, midvein raised or subflat adaxially, lateral veins 7–9 pairs, margin sparsely serrulate or subentire ............................................ 111. *I. austrosinensis*

57b. Ovary and fruit not tuberculate.

60a. Leaf blade usually lanceolate, 9–15 mm wide, margin bluntly crenulate-serrate; pyrenes abaxially palmately striate, endocarp woody ........................................................................ 112. *I. chuniana*
60b. Leaf blade oblong or oblong-elliptic, 1.3–3.2 cm wide, margin entire or inconspicuously serrulate or crenulate-serrate; pyrenes stony or woody.

61a. Fruit globose, ca. 6 mm in diam., pyrenes oblong, 4–4.5 mm, 2–2.5 mm in diam., abaxially longitudinally 1-sulcate, palmately striate and sulcate, laterally rugose and pitted, endocarp stony ................................................................. 113. *I. pingnanensis*

61b. Fruit subglobose, ca. 4 mm, ca. 3 mm in diam., pyrenes ellipsoidal, ca. 3 mm, ca. 1.5 mm in diam., abaxially laterally striate and sulcate, endocarp woody ................................................. 114. *I. fengqingensis*

50b. Young branchlets glabrous, rarely puberulent or glabrescent, petiole glabrous, rarely puberulent or pubescent.

62a. Shrubs or trees.

62b. Trees, rarely shrubs.

63a. Shrubs, 1–3(–4) m tall.

63b. Shrubs or trees, (2–)3–5(–15) m tall.

64a. Leaf blade obovate-oblong or obovate-lanceolate, rarely elliptic, 4.5–7.5 cm; pyrenes ovoid, ca. 2 mm, ca. 1.5 mm in diam., abaxially smooth, nearly not or inconspicuously striate and sulcate ................................................................. 115. *I. kunmingensis*

64b. Leaf blade lanceolate, oblong-lanceolate, elliptic-lanceolate, or oblong-elliptic; pyrenes subglobose or ellipsoidal, abaxially striate and sulcate.

65a. Leaf blade lanceolate, abaxially punctate ................................................................. 116. *I. peiradena*

65b. Leaf blade oblong-lanceolate, oblong-elliptic, or elliptic-lanceolate, abaxially not punctate.

66a. Infructescences: cymes pseudoracemose; leaf blade 7–12 × 2.2–4 cm, lateral veins 8–10 pairs, adaxially evident, slightly raised or ± flat, petiole 8–13 mm .................. 117. *I. micropyrena*

66b. Female inflorescences: cymes fasciculate; leaf blade 3.5–8.5 × 1.5–2.5 cm, lateral veins 5–9 pairs, petiole 4–8 mm.

67a. Ovary oblong, stigma discoid; leaf blade thickly leathery, margin slightly or deeply undulate, sparsely black serrulate, lateral veins 5–7 pairs, abaxially evident .................. 118. *I. pingheensis*

67b. Ovary ovoid, stigma trapezoid-conical; leaf blade thinly leathery, margin not undulate, sparsely and shallowly serrate, lateral veins 8 or 9 pairs, raised on both surfaces, or adaxially flat .................. 119. *I. macrostigma*

68b. Apex of leaf blade usually abruptly acuminate.

69a. Leaf blade elliptic or obovate-lanceolate, 4–6 × 1.5–2.5 cm, base attenuate and decurrent, lateral veins slightly raised on both surfaces, reticulate veins evident .......................... 120. *I. dianguiensis*

69b. Leaf blade oblong-ovate, oblanceolate, oblong, elliptic, or obovate-oblong, base rounded or obtuse, lateral veins slightly impressed or obscure adaxially, reticulate veins indistinct or slightly evident.

70a. Male inflorescences 1(–3)-flowered cymes, fasciculate; rudimentary ovary globose, ca. 1 mm in diam., apex densely puberulent; leaf blade oblong-ovate, abaxially not punctate .... 121. *I. brachyphylla*

70b. Male inflorescences 3-flowered cymes, fasciculate; rudimentary ovary subglobose, ca. 0.5 mm in diam., glabrous; leaf blade oblanceolate, elliptic, oblong, or obovate-oblong, abaxially sparsely glandular punctate ................................................................. 122. *I. confertiflora*

68b. Apex of leaf blade acute or acuminate, not abruptly acuminate.

71a. Male inflorescence: cyme pseudopaniculate, rachis stout, inflated, purple-black; leaf blade oblong-lanceolate, 6–9.5 × 2.5–3 cm, abaxially minutely glandular punctate ..................... 123. *I. punctatilimba*

71b. Male inflorescence: cyme pseudopaniculate, not pseudopaniculate; leaf blade oblong-ob lanceolate, ovate-oblong, or oblong, 7–15 × 2–7 cm, abaxially glandular punctate or not.

72a. Male inflorescences 1–3-flowered cymes, fasciculate; leaf blade ovate-oblong or oblong, 11–14 × 5–7 cm, abaxially minutely punctate, petiole 10–15 mm .................. 124. *I. robustinervosa*

72b. Male inflorescences 3–9-flowered cymes, fasciculate; leaf blade oblong-ob lanceolate, 7–15 × 2–4 cm, abaxially not punctate, petiole 2–4 mm ................................................. 125. *I. cinerea*

62b. Trees, rarely shrubs.

73a. Female inflorescence and infructescence: cymes pseudoracemose, sometimes fasciculate.

74a. Branchlets conspicuously lenticellate.

74b. Branchlets not lenticellate.

75a. Fruit subglobose, ca. 9 mm, ca. 8 mm in diam.; pyrenes trigonous-ellipsoid, 6–7 mm, ca. 3 mm in diam., abaxially longitudinally striate and sulcate; leaf blade papery, margin sparsely and shallowly crenulate ................................................................. 126. *I. venosa*

75b. Fruit depressed globose, 4–5 mm in diam., tuberculate; pyrenes ovoid-trigonal, ca. 2.5 mm, ca. 2 mm in diam., abaxially irregularly reticulate-striate, rugose; leaf blade thickly leathery, margin densely and sharply serrate .............................................. 127. *I. dunniana*
76a. Fruit tuberculate (under lens), persistent stigma thickly discoid, endocarp stony; apex of leaf blade obtuse, acute, shortly acuminate, or nearly caudate-acuminate .............................................. 128. *I. intermedia*

76b. Fruit not tuberculate, persistent stigma navell-shaped, mammilliform, capitate, thinly discoid, or thickly discoid, endocarp leathery or stony; apex of leaf blade acumenate to caudate-acuminate, rarely abruptly acute.

77a. Fruiting pedicel densely puberulent, ca. 1 mm, persistent stigma mammilliform or thickly discoid, endocarp leathery; petiole (8–)10–15 mm ......................................................... 129. *I. medogensis*

77b. Fruiting pedicel puberulent or sparsely puberulent, 2–5.5 mm, persistent stigma navell-shaped, thinly discoid, or capitate, endocarp stony; petiole 4–13 mm.

78a. Male flower: corolla ca. 10 mm in diam.; pyrenes palately striate and sulcate throughout; leaf blade papery ................................................................. 130. *I. gintungensis*

78b. Male flower: corolla 5–6 mm in diam.; pyrenes abaxially palamently striate and sulcate, laterally longitudinally striate and sulcate; leaf blade leathery or thickly papery.

79a. Persistent stigma capitate; pyrenes ovoid-oblong or oblong, 3–4 mm; male flower: calyx puberulent, petals oblong, ca. 3 mm, ciliate; leaf blade margin usually crenulate-serrate, petiole 5–13 mm ..................................................... 131. *I. formosana*

79b. Persistent stigma navell-shaped, pyrenes oblong, ca. 4 mm; male flower: calyx glabrous and ciliate, petals obosilate-oblong, ca. 2 mm, not ciliate; leaf blade margin subentire or minutely crenulate, petiole 4–7 mm ............................................................................................................ 132. *I. tetramera*

73b. Female inflorescence and infructescence 1-flowered or 1-fruited cymes, fasciculate, not pseudoracemose.

80a. Pyrenes abaxially longitudinally striate and sulcate; fruiting pedicel 1–2 mm; third year’s and older branchlets with raised elliptic lenticels ........................................... 133. *I. cupreoniensis*

80b. Pyrenes abaxially usually striate and sulcate, rarely only striate; fruiting pedicel (1–)2–3(–6) mm; third year’s and older branchlets not lenticellate, rarely minutely or sparsely lenticellate.

81a. Leaf blade ovate, ovate-elliptic, oblong, or ovate-lanceolate, apex acuminate or acute, margin undulate crenate-serrate; fruit 3–5 mm in diam., pyrenes 2–2.5(–5) mm, ca. 1.5(–2) mm in diam., ellipsoidal-trigonous ................................................................. 134. *I. corallina*

81b. Leaf blade usually not above-mentioned shapes, but sometimes oblong and rarely ovate, margin rarely undulate; fruit (3–)5–7(–8) mm in diam., pyrenes 3–4.5(–7) mm, (1.5–)2–3(–5) mm in diam., ellipsoidal or subglobose, rarely obovoid, obovoid-oblong, ovoid, or oblong.

82a. Fruiting pedicel equaling or longer than diam. of fruit.

83a. Fruit globose, ca. 6 mm in diam., fruiting pedicel 5–6 mm ..................................................... 137. *I. cyrtura*

83b. Fruit ellipsoidal or globose, 3–5 mm in diam., fruiting pedicel 3–3.5 mm.

84a. Fruit globose, 3–5 mm in diam., fruiting pedicel ca. 3.5 mm, pyrenes obovoid; leaf blade papery, lanceolate or narrowly elliptic, 5–8 × 1.5–2.5 cm, acumen 1.8–2 cm ........................................... 135. *I. arisanensis*

84b. Fruit ellipsoidal, 3.5–4 mm in diam., fruiting pedicel ca. 3 mm, pyrenes ellipsoidal; leaf blade thinly leathery, usually oblong-elliptic, 6.5–11.5 × 3.5–4 cm, acumen 1–1.5 cm ................................................................. 136. *I. marlipoensis*

82b. Fruiting pedicel much shorter than diam. of fruit, ca. less than 1/2 in diam.

85a. Peduncles of male cymes very short to nearly absent; pyrenes laterally striate and sulcate or inconspicuously striate, not rugose or pitted.

86a. Fruit subglobose, persistent stigma discoid or navell-shaped, pyrenes obovoid-oblong; leaf blade papery to thinly leathery, elliptic, oblong, or oblong-elliptic, 6–12 cm, reticulate veins slightly raised on both surfaces ................................................................. 138. *I. wattii*

86b. Fruit globose, persistent stigma thickly discoid, pyrenes ellipsoidal; leaf blade leathery, oblong-elliptic or obovate-oblong, 4–8 cm, reticulate veins evident only abaxially ... 139. *I. guangnanensis*

85b. Peduncles of male cymes 1–2 mm; pyrenes laterally rugose and/or pitted.

87a. Stamens longer than petals; petals ovate-oblong, apically ciliate; fruit tuberculate (under lens) ........................................................................ 140. *I. ficoidea*

87b. Stamens equaling or shorter than petals; petals oblong, not ciliate; fruit not tuberculate.

88a. Fruit globose, 7–8 mm in diam., pyrenes oblong or subglobose, 5.5–7 mm, 4–5 mm in diam.; leaf blade subleathery, oblong or oblong-elliptic, 6–12 × 2–4 cm, margin serrate ........................................... 141. *I. glomerata*

88b. Fruit depressed globose, ca. 4 mm, ca. 5 mm in diam., pyrenes subglobose, ca. 3 mm, ca. 2.5 mm in diam.; leaf blade leathery, elliptic-lanceolate or oblanceolate, 6–9 × 2–3 cm, margin strongly serrate, teeth black and apiculate .................................................. 142. *I. subodorata*
Key 4 (*Ilex* sect. *Lauroilex* S. Y. Hu)

1a. Leaf blade elliptic, 7–10 cm, midvein adaxially proximally slightly raised, flattened or subimpressed toward distal half; male inflorescence: cyme fasciculate; fruit ca. 5 mm in diam., pyrenes 5, ca. 3 mm, ca. 2 mm in diam. .......... 143. *I. syzygiophylla*

1b. Leaf blade broadly elliptic, oblong-elliptic, or ovate, 8–20 cm, midvein impressed adaxially; male inflorescence: cyme fasciculate or pseudopaniculate, or compound cyme pseudopaniculate; fruit 3–4 mm in diam., pyrenes 5–7, ca. 2 mm, ca. 1 mm in diam.

2a. Leaf blade thickly leathery, broadly elliptic or oblong-elliptic, apex shortly acuminated, lateral veins 6–8 pairs, slightly raised on both surfaces; male inflorescence: cyme of order 3, fasciculate; persistent stigma thickly discoid .......................................................... 144. *I. omeiensis*

2b. Leaf blade leathery, oblong-elliptic, or ovate, apex caudate-acuminate, lateral veins 15–22 pairs, raised on both surfaces; male inflorescence: cyme of order 4, or compound cyme with cymules of order 3, pseudopaniculate; persistent stigma navel-shaped or thinly discoid .......................................................... 145. *I. venulosa*

Key 5 (*Ilex* sect. *Pseudoaquifolium* S. Y. Hu)

1a. Pyrenes abaxially 3-striate and sulcate or not, or rarely sulcate only, endocarp leathery, rarely woody, or subwoody; branchlets usually subquadrangular, rarely angular, subterete, or terete.

2a. Female inflorescence: 1–5-flowered cyme, fasciculate or pseudopaniculate ........................................................ 146. *I. stewardii*

2b. Female inflorescence: (1–)3-flowered cyme, fasciculate, rarely solitary, or pseudopaniculate.

3a. Leaf blade papery or thinly leathery, rarely membranous; persistent stigma capitate or thickly discoid.

4a. Branchlets, leaf blades, petioles, and inflorescences densely hisrate; leaf blade thickly papery, papery, or membranous, elliptic, oblong, obovate, or narrowly ovate, margin sparsely and sharply serrulate or subentire .......................................................... 147. *I. pubescens*

4b. Branchlets, petioles, and inflorescences sparsely puberulent; leaf blade thinly leathery or papery, elliptic, or obovate-oblong to ovo-oblong, margin entire or undulate and shallowly serrate distally ...... 148. *I. hainanensis*

3b. Leaf blade leathery; persistent stigma mammilliform, cylindric, or discoid.

5a. Persistent stigma mammilliform or cylindric.

6a. Branchlets densely lenticellate; leaf blade margin entire, abaxially inconspicuously minutely glandular punctate; persistent calyx 4- or 5-lobed; pyrenes 5 .......................................................... 149. *I. mamilata*

6b. Branchlets not lenticellate; leaf blade margin entire or inconspicuously serrate apically, not glandular punctate abaxially; persistent calyx 6-lobed; pyrenes 6 .......................................................... 150. *I. wuana*

5b. Persistent stigma discoid.

7a. Shrubs, 1–2 m tall; leaf blade leathery, linear or narrowly lanceolate, 6–9 × ca. 0.8 cm, margin minutely obtusely serrate, lateral veins obscure; fruit 1 or 2 per fascicle .......................................................... 151. *I. xiaojinensis*

7b. Trees, ca. 18 m tall; leaf blade thickly leathery, broadly ovate or ovate-elliptic, 5–10 × 2.5–5 cm, margin entire, lateral veins 10–13 pairs, adaxially obscure, abaxially conspicuous; fruit 4–6 per fascicle .......................................................... 152. *I. qingyuanensis*

1b. Pyrenes abaxially usually striate and not sulcate, rarely striate and sulcate, or not striate or sulcate and smooth, or ridged, endocarp leathery, rarely woody; current year’s branchlets usually longitudinally angular and sulcate, or angular and ridged, second to third year’s terete.

8a. Fruiting pedicel 1–2.5 mm and shorter than diameter of fruit, or 6–9 mm and longer than diam. of fruit; female inflorescence: cyme solitary or few fascicled.

9a. Fruiting pedicel 6–9 mm, fruit compressed globose, ca. 3 mm in diam. and longer. .......... 192. *I. lihuaensis*

9b. Fruiting pedicel 1–2.5 mm, shorter of fruit.

10a. Leaf blade papery or thinly leathery, oblong or elliptic, rarely obovate or rhomboid, 1–2.5 cm, base cuneate; branchlets, leaves adaxially on midvein, and petioles densely pubescent .......................... 187. *I. lohfaunensis*

10b. Leaf blade leathery or thickly leathery, obovate, obovate-oblong, or ovate, base obtuse or broadly cuneate; branchlets, leaves adaxially on midvein, and petioles puberulent.

11a. Leaf blade apically truncate-rounded, retuse, or emarginate, with triangular acumen, margin entire except for 1 (or 2) pair of teeth at apex .......................................................... 188. *I. bidens*

11b. Leaf blade apically cordate, emarginate, retuse, rounded, obtuse, or shortly acuminate, margin entire.

12a. Leaf blade 1–1.8 × 0.6–1.2 cm, apex cordate, retuse; peduncles of male inflorescence longer than pedicels; rudimentary ovary globose, apex flat .......................................................... 189. *I. chamaebuxus*

12b. Leaf blade 2–4 × 1–2.5 cm, apex shortly acuminate, rounded, obtuse, retuse, or emarginate; peduncles of male inflorescence nearly equaling pedicels; rudimentary ovary apically rostellate or depressed.

13a. Leaf blade abaxially deeply colored punctate; rudimentary ovary pulvinate, rostellate; fruit compressed globose, 3–4 mm in diam., persistent stigma discoid, convex .......................................................... 190. *I. championii*

13b. Leaf blade abaxially not punctate; rudimentary ovary conical, center depressed; fruit globose, ca. 5 mm in diam., persistent stigma thinly discoid, shallowly 4- or 5-lobed ........................ 191. *I. hanceana*
8b. Fruiting pedicel (2–)3–8(–20) mm, usually longer than or equaling diam. of fruit, rarely shorter; female
inflorescence: cyme usually fasciculate, rarely solitary, or few fascicled.
14a. Fruit 4–6(–8) mm in diam., persistent stigma capitate or mammilliform, rarely columnar, style usually evident.
15a. Leaf blade not punctate, apex usually acuminate, sometimes acute, or obtuse, never retuse.
16a. Shrubs or trees.
17a. Leaf blade subleathery, lanceolate or oblanceolate, 3–6 × 0.5–1.4 cm, margin subentire, usually
1- or 2-serrulate near apex; male inflorescences: 3-flowered cymes, fasciculate, flowers 5- or
6-merous, calyx cupular, rudimentary ovary pulvinate or subglobose; pyrenes abaxially and
lateral veins longitudinally striate and sulcate ................................................................. 153. *I. metabaptista*
17b. Leaf blade thickly leathery, elliptic or oblong-elliptic, 5–9 × 2–3.5 cm, margin entire; male
inflorescences: 1-flowered cymes, fasciculate, flowers 5–8-merous, calyx patelliform,
rudimentary ovary conical; pyrenes smooth, with a single slender ridge abaxially ................. 154. *I. elmerrilliana*
16b. Trees.
18a. Branchlets, petioles, and fruiting pedicels glabrous, puberulent, or glabrescent.
19a. Leaf blade thickly leathery, oblong or obovate-oblong, 15–25 × 5–7 cm, lateral veins 12–15
pairs; fruit densely yellow punctate, pyrenes 5 or 6, ellipsoidal .................................................. 155. *I. dolichopoda*
19b. Leaf blade leathery, elliptic or broadly elliptic, 7.5–10 × 3.5–5.5 cm, lateral veins 6–8 pairs;
fruit not punctate, pyrenes 4 or 5, or, leaf blade leathery, lateral
veins adaxially evident, abaxially slightly raised, reticulate veins obscure ............................................. 156. *I. shimeica*
18b. Branchlets, petioles, and pedicels puberulent or pubescent.
20a. Ovary densely pubescent; leaf blade narrowly elliptic or elliptic-lanceolate, 4.5–6 ×
1.4–2.1 cm .............................................................................................................................. 157. *I. jiaolingensis*
20b. Ovary glabrous; leaf blade oblong, oblong-elliptic, ovate-oblong, or obovate.
21a. Leaf blade leathery to thickly leathery, ovate-oblong or obovate, 4–8.5 × 1.2–3.3 cm,
lateral veins 5 or 6 pairs, indistinct on both surfaces; pyrenes 4 or 5 ...................... 158. *I. memecylifolia*
21b. Leaf blade leathery, oblong or oblong-elliptic, 5–11 × 2.3–4 cm, lateral veins 10–14 pairs,
obscure on both surfaces; pyrenes 6 ................................................................................. 159. *I. sinica*
15b. Leaf blade abaxially punctate, apex usually acuminate, sometimes rounded or retuse.
22a. Leaf blade obcordate or obovate, apex rounded and/or retuse.
23a. Pyrenes 5 or 6 or 7, persistent stigma capitate; fruiting pedicel 8–10 mm, puberulent; leaf blade
thickly leathery, lateral veins and reticulate veins indistinct on both surfaces ...................... 160. *I. tutcheri*
23b. Pyrenes 4, persistent stigma papillate; fruiting pedicel ca. 5 mm, glabrous; leaf blade leathery, lateral
veins adaxially evident, abaxially slightly raised, reticulate veins obscure ............................................. 161. *I. tamii*
22b. Leaf blade not obcordate or obovate, apex shortly to long acuminate, rarely retuse.
24a. Leaf blade linear-lanceolate, 0.8–2.2 cm wide; style ca. 1 mm, stigma pubescent ................. 162. *I. salicina*
24b. Leaf blade not linear-lanceolate, 1.5–4.5 cm wide; persistent stigma glabrous.
25a. Fruiting pedicel 12–17 mm, fruit ca. 5 mm in diam., minutely punctate, persistent stigma
mammilliform or capitate; pyrenes 6, abaxially leathery striate and sulcate ................................. 163. *I. verisimilis*
25b. Fruiting pedicel 4–13 mm, fruit 4–7 mm in diam., not punctate, persistent stigma navel-shaped
or mammilliform; pyrenes 4–6, smooth or striate and not sulcate, but not feathery (fruit and
pyrenes not seen in *I. retusifolia*).
26a. Peduncles of male flowers 6–10 mm; persistent stigma mammilliform; leaf blade elliptic,
oblong-elliptic, oblong-lanceolate, or oblate, acumen not retuse ................... 164. *I. cochinichinensis*
26b. Peduncles of male flowers 1.5–3 mm; stigma discoid or persistent stigma navel-shaped;
leaf blade broadly elliptic, elliptic, ovate, or oblong, acumen usually retuse.
27a. Branchlets puberulent; female flowers 4-merous; leaf blade broadly elliptic, 5–7 × 2–3 cm ... 165. *I. retusifolia*
27b. Branchlets glabrous; female flowers 6–8-merous; leaf blade ovate, elliptic, or oblong,
6–9 × 1.5–4.5 cm .............................................................................................................. 166. *I. kobuskiana*
14b. Fruit (1.5–)3–5 mm in diam., style usually absent, persistent stigma usually thinly to thickly discoid,
sometimes capitate, rarely mammilliform, or crested.
28a. Margin of leaf blade serrate, serrulate, or crenulate, rarely entire; pyrenes 4–6, rarely 7.
29a. Infructescence a 1( or 3)-fruited cyme, pseudoracemose, or fasciculate.
30a. Infructescence a 1( or 3)-fruited cyme, pseudoracemose, rarely pseudopaniculate, axis 5–8 mm;
pyrenes 5–7, ellipsoidal, smooth, neither striate nor sulcate abaxially; leaf blade leathery, oblong,
oblong-oblong-elliptic, elliptic, or obovate-elliptic, margin serrulate or serrate on distal 1/2–2/3 .......... 182. *I. forrestii*
30b. Infructescence a 1-fruited cyme, fasciculate, axis ca. 2 mm; pyrenes 4, 4- or 5-striate, not sulcate
abaxially; leaf blade thinly leathery or thickly papery, elliptic or oblong-elliptic, margin crenulate .. 183. *I. caudiflora*
29b. Infructescence a 1-fruited cyme, fasciculate.
31a. Apex of leaf blade shortly acuminate; pyrenes ellipsoidal-oblong ........................................ 186. *I. tsiangiana*
31b. Apex of leaf blade caudate-acuminate, acumen 1–1.5 cm; pyrenes oblong.
32a. Persistent stigma mammilliform; pyrenes 5 or 6, smooth, abaxially and laterally longitudinally
1-striate; leaf blade leathery ................................................................. 184. *I. wardii*
32b. Persistent stigma thickly discoid or discoid; pyrenes 4, abaxially smooth, not striate or sulcate;
leaf blade papery .................................................................................. 185. *I. estriata*
28b. Margin of leaf blade usually entire, rarely subentire, or with 1 or 2 bristly teeth at distal end, or serrulate;
pyrenes 4, rarely 2 or 5.
33a. Leaf blade abaxially glandular punctate.
34a. Terminal buds, branchlets, petioles, and fruit densely gray-white puberulent-strigose .............. 167. *I. strigillosa*
34b. Branchlets, terminal buds, and petioles puberulent, rarely pubescent or glabrous; fruit glabrous,
rarely pubescent.
35a. Leaf blade elliptic or ovate-elliptic, apex long acuminate or caudate-acuminate, not retuse.
36a. Female inflorescences: 1-flowered cymes, fasciculate or pseudoracemose, flowers 4- or
5(or 6)-merous; pyrenes 4 or 5, abaxially 3-striate; leaf blade leathery or thickly leathery,
apex caudate-acuminate ........................................................................ 168. *I. longecaudata*
36b. Female inflorescences: 1–5-flowered cymes, fasciculate, flowers 4-merous; pyrenes 4,
abaxially 5- or 6-striate; leaf blade thinly leathery, apex long acuminate ........................................ 169. *I. kengii*
37b. Male inflorescences 3–7-flowered cymes, fasciculate; leaf blade broadly elliptic or subhombic-elliptic,
3–5 × 1.5–2.5 cm, apex abruptly short acuminate, acumen retuse ....................... 170. *I. goshiensis*
38b. Branchlets, terminal buds, and petioles pubescent; leaf blade elliptic, obovate-elliptic, or
obovate-elliptic, apex obtuse, rounded, or shortly acuminate, rarely retuse, acumen retuse.
39a. Leaf blade broadly elliptic, apex obtuse or rounded; pyrenes abaxially palmately striate and
sulcate ........................................................................................................ 171. *I. buxoides*
39b. Leaf blade not broadly elliptic, apex acuminate; pyrenes abaxially longitudinally 3- or 4-striate,
rarely reticulately striate, palmately striate, or not striate.
40a. Fruiting pedicel 2–3 mm, shorter than diam. of fruit; pyrenes abaxially palmately striate and
slightly sulcate; leaf blade papery .......................................................... 174. *I. guizhouensis*
40b. Fruiting pedicel equaling or longer than diam. of fruit; pyrenes abaxially longitudinally 3- or
4-striate, rarely reticulately striate, or not striate; leaf blade leathery, rarely thickly leathery.
41a. Margin of leaf blade subentire, or entire, or with 1 or 2 bristly teeth at distal end, or serrulate.
42a. Shrubs, 1–3(–5) m tall ........................................................................ 175. *I. oligodonta*
42b. Trees, ca. 6 m tall.
43a. Pyrenes ovoid, abaxially not striate or sulcate; leaf blade elliptic or oblong-elliptic,
5.5–9 × 2.7–4 cm, margin subentire, sometimes sparsely and inconspicuously serrulate .... 176. *I. nitidissima*
43b. Pyrenes oblong, abaxially 3-striate; leaf blade oblong or obovate-elliptic, 6–12 × 3–4.5
cm, margin entire on proximal half, serrulate with 1 or 2 pairs of teeth on distal half ........ 177. *I. jinyumensis*
41b. Margin of leaf blade entire.
44a. Current year’s branchlets and terminal buds puberulent, petioles pubescent or glabrous;
leaf blade elliptic, oblong-elliptic, or ovate-elliptic.
45a. Shrubs, ca. 2 m tall; persistent stigma thickly discoid; pyrenes 4 or 5, oblong-ellipsoidal,
c. 3.5 mm, abaxially 3- or 4-striate, not sulcate or shallowly sulcate .... 178. *I. sublongecaudata*
45b. Trees, to 12 m tall; persistent stigma capitulate; pyrenes 4, ellipsoidal, ca. 4 mm,
abaxially 3-striate, laterally smooth ..................................................... 179. *I. hayatana*
44b. Branchlets, terminal buds, and petioles glabrous, current year’s branchlets sometimes
puberulent; leaf blade ovate, obovate-oblong, ovate-oblong, elliptic-lanceolate, or
ovate-elliptic.
46a. Leaf blade thickly leathery, base obtuse, rarely rounded, midvein slightly raised abaxially,
flat adaxially, lateral veins 7 or 8 pairs .............................................. 180. *I. wilsonii*
46b. Leaf blade leathery, base rounded, rarely obtuse, adaxially opaque, midvein deeply impressed adaxially, lateral veins 9 or 10 pairs ................................................................. 181. I. fukienensis

Key 6 (Ilex subg. Prinos (Linnaeus) A. Gray)

1a. Fruit usually red, rarely yellow (I. micrococa); pyrenes 4–8(–13), striate or sulcate, or not striate or sulcate abaxially, endocarp leathery, rarely woody.

2a. Fruit depressed globose; style present, stigma capitata or crested; pyrenes 6–8(–13), abaxially longitudinally striate, endocarp woody .......................................................... 193. I. fragilis

2b. Fruit globose; style absent, stigma discoid; pyrenes 4–8, abaxially longitudinally 1-sulcate, or not striate or sulcate, endocarp leathery.

3a. Female inflorescences: cymes 1–3-flowered, solitary, rarely fasciculate, axillary .............................................................. 196. I. serrata

3b. Female inflorescences: cymes umbelliform or compound cymes, more than 3-flowered, solitary, axillary.

4a. Inflorescences: compound cymes, secondary axis longer than pedicels; lateral veins of leaf blade 5–8 pairs .......................................................... 194. I. micrococa

4b. Inflorescences: cymes umbelliform, secondary axis usually absent, or shorter than pedicels; lateral veins of leaf blade 10–20 pairs .................................................. 195. I. polyneura

1b. Fruit usually black, rarely red (I. macropora) or green (I. chaopaensis) or purple-black (I. tsoi), pyrenes 4–6(–9), striate and sulcate abaxially, endocarp stony or bony, rarely woody (I. kusanoi).

5a. Fruit more than 10 mm in diam., persistent stigma columnar; style present.

6a. Fruit 10–14 mm in diam., pyrenes 7–9; rudimentary ovary pulvinate, apex slightly retuse; leaf blade papery .............................................................. 197. I. macrocarpa

6b. Fruit 12–20 mm in diam., pyrenes 6 or 7; rudimentary ovary conical, rostellate, apex shallowly lobed; leaf blade thinly leathery or papery .......................................................... 198. I. chaopaensis

5b. Fruit less than 10 mm in diam., persistent stigma usually discoid or capitulate; style usually absent.

7a. Pedicels of female flowers and fruit 10–30 mm.

8a. Endocarp stony; leaf blade ovate or ovate-elliptic, adaxially puberulent, apex caudate-acuminate, acumen usually 6–10 mm ................................................................. 199. I. asprella

8b. Endocarp woody; leaf blade ovate, glabrous throughout, apex obtuse or shortly and broadly acuminate . 200. I. kusanoi

7b. Pedicels of female flowers and fruit shorter than 10 mm.

9a. Leaf blade obovate, obovate-elliptic, or elliptic, base cuneate or attenuate; pyrenes 4 or 5.

10a. Leaf blade obovate, usually 2–5 × 1–3 cm; branchlets pubescent at base; fruit globose, ca. 7 mm in diam. ........................................................... 201. I. aculeolata

10b. Leaf blade obovate-elliptic or elliptic, 5–8 × 1.8–3.3 cm; branchlets sparsely puberulent or glabrescent; fruit ellipsoidal, 10–15 mm, 6–8 mm in diam. ........................................ 202. I. kiangsiensis

9b. Leaf blade ovate, ovate-elliptic, or broadly elliptic, base usually obtuse, rarely rounded or cuneate; pyrenes 5 or 6.

11a. Fruit ca. 5 mm in diam., red, fruiting pedicel 6–7 mm, pyrenes 5; calyx of male flowers ca. 2.5 mm in diam., shallowly 5-lobed, margin erose; rudimentary ovary pulvinate, depressed at center . 203. I. macropora

11b. Fruit 6–8 mm in diam., purple-black, fruiting pedicel 1–3 mm, pyrenes 6; calyx of male flowers ca. 4 mm in diam., 6-lobed, margin entire; rudimentary ovary pulvinate, flat at center ......................... 204. I. tsoi


多核冬青; duo he dong qing

Trees evergreen, ca. 6 m tall. Bark whitish; current year’s branchlets brown, second year’s branchlets whitish. Petiole 1–1.8 cm, glabrous; leaf blade abaxially green, adaxially olivaceous, shiny, obovate-elliptic or oblong-elliptic, 6–8.5 × 2.5–4.3 cm, leathery, both surfaces glabrous, midvein slightly impressed adaxially, lateral veins 6 or 7 pairs, anastomosing near margin, reticulate veins obscure on both surfaces, base obtuse or cuneate, margin entire, apex rounded. Flowers not known. Infructescences: cymes, 5-fruiting, solitary, axillary; fruiting pedicels ca. 3 mm, glabrous. Fruit purple-black, globose or ovoid-globose, ca. 7 mm in diam.; persistent calyx 5-lobed; persistent stigma discoid; pyrenes 14 or 15, ellipsoidal, laterally compressed, 2–3 mm, only ca. 1 mm in diam., abaxially longitudinally 1-sulcate, endocarp leathery. Fl. unknown, fr. Jul.

● Forests; ca. 1000 m. S Guangxi (Shiwan Dashan).


长圆叶冬青; chang yuan ye dong qing

Shrubs or trees, evergreen, 3–4 m tall. Branchlets castaneous, strong, angular, sulcate, glabrous; leaf scars obovate or deltoid, slightly raised; lenticels obscure, elliptic, minute. Petiole subterete, 1.5–2 cm, strong, glabrous; leaf blade oblong or oblong-elliptic, 9–19 × 3.5–8.5 cm, thickly leathery, midvein flat adaxially, lateral veins 10–12 pairs, evident abaxially, obscure adaxially, reticulate veins obscure on both surfaces, base rounded or obtuse, margin entire, slightly recurved, apex very obtuse, rounded, or rarely with short broad acumen. Flowers not known. Infructescences: compound cymes, 7–9-fruiting, solitary, axillary on current year’s branchlets; peduncles 8–17 mm, glabrous or glabrescent, compressed, apex thick; cymes of order 2 or 3, secondary axis 2–8 mm; bracts triangular to lanceolate, margin entire, glabrous; fruiting pedicel 3–6 mm; bracteoles 2, basal. Fruit black, shiny when dry, globose, 6–7 mm in diam.; persistent calyx patelliform, explanate, ca. 4 mm in
AQUIFOLIACEAE

373

diam., 4- or 5-lobed, lobes orbicular, very shortly ciliate; persistent stigma mammilliform; pyrenes 4, oblong, ca. 4.5 mm, ca. 3 mm in diam., abaxially deeply 1-sulcate, transverse section U-shaped, endocarp leathery. Fl. unknown, fr. Jan.

Steep wastelands; low to middle elevations. Guangdong (Lianjiang) [N Vietnam].


九万山冬青 jiu wan shan dong qing

Shrubs evergreen, ca. 4 m tall. Current year’s branchlets purple-black, longitudinally sulcate, glabrous; second year’s branchlets gray-yellow, longitudinally fissured; terminal buds puberulent. Petiole terete, ca. 1 cm, distally narrowly winged; leaf blade linear-lanceolate, 11–13 × 1.1–2.3 cm, leathery, both surfaces glabrous, midvein raised on both surfaces, lateral veins 9 or 10 pairs, abaxially slightly evident, adaxially obscure, reticulate veins obscure on both surfaces, base attenuate and decurrent, margin entire, apex acuminate. Fl. unknown, fr. Jan.


剑叶冬青 jian ye dong qing

Shrubs or trees, evergreen, 3–10 m tall, trunk to ca. 20 cm d.b.h. Bark gray-white, smooth; young branchlets longitudinally angular and sulcate, sulfur-colored curved pubescent; old branchlets gray, longitudinally rugose; leaf scars subcircular, raised, glabrescent; terminal buds ovoid-conical, apex acuminate; bud scales densely yellowish pubescent. Stipules caducous; petiole 1.5–2.5 cm, sparsely puberulent, distal half narrowly winged by decurrent leaf base; leaf blade abaxially greenish, opaque, adaxially dark green, shiny or opaque, lanceolate or narrowly oblong, 9–16 × 1–2.5 cm, leathery, midvein raised and pubescent when young abaxially, raised, flat or slightly sulcate. Fl. unknown, fr. Oct.

● Dense evergreen broad-leaved forests in mountainous areas; middle elevations (to 1500 m). N Guangxi (Juwan Dashan, Rongshui).


雪山冬青 xue shan dong qing

Trees evergreen. Branches robust, glabrous; branchlets brown when dry, angular-plicate, lenticels absent; leaf scars deltoid. Petiole 2–2.5 cm, adaxially shallowly and broadly sulcate, glabrous; leaf blade yellowish brown or brown when dry, elliptic or oblone-elliptic, 10–14 × 3–5 cm, thickly leathery, both surfaces glabrous, midvein raised on both surfaces, lateral veins 12–14 pairs, raised on both surfaces, furcate and anastomosing near margin, reticulate veins inconspicuous on both surfaces, base cuneate, margin entire, apex shortly acuminate. Flowers not known. Infructescences: cymes, 5–7-fruited, solitary, axillary on current year’s branchlets; peduncles 8–9 mm, compressed, puberulent; bracts linear, sparsely puberulent; fruiting pedicels very short, 0.5–1 mm. Fruit ellipsoid-globose, 5–7 mm, ca. 5 mm in diam.; persistent calyx expande, ca. 4 mm in diam., shallowly 5-lobe, lobes deltoid, densely pubescent and ciliate; persistent stigma navel-like, inconspicuously 5- or 6-lobe; pyrenes 4–6, ellipsoidal, ca. 4 mm, ca. 2.5 mm in diam., abaxially flat or slightly sulcate, endocarp leathery, smooth. Fl. unknown, fr. Jan.

● Forests or thickets in valleys; 300–1800 m. Fujian (Taining), Guangdong, Guangxi, Hainan.


黄毛冬青 huang mao dong qing

Ilex flaveomollissima F. P. Metcalf.

Shrubs or trees, evergreen, 2.5–9 m tall. Branchlets, petioles, leaf blades, pedicels, and calyx ferruginous hirsute, hairs with tuberculate bases; branchlets zigzag, gray, subterete; leaf scars triangular or suborbicular, small, slightly raised; lenticels absent, scabrous-punctate, hairs deciduous. Stipules subulate, pubescent; petiole 3–5 mm; leaf blade green, shiny or not, ovate, ovate-elliptic, oblone-elliptic, or ovate-lanceolate, (2–) 11 × 1–3.2 cm, leathery, both surfaces hirsute or glabrescent, midvein impressed adaxially, lateral veins 7–9 pairs, slightly impressed or flat adaxially, reticulate veins indistinct adaxially, base obtuse or rounded, margin entire or upper half sparsely serrulate, recurved, ciliate, apex acuminate. Infructescences: cymes, solitary, axillary on current year’s branchlets; flowers red, 4- or 5-merous. Male inflorescences: cymes of order
AQUIFOLIACEAE

7a. Ilex lonicerifolia var. lonicerifolia

Trees evergreen, small to medium-sized, to 17 m tall. Young branchlets castaneous when dry, terete or ridged, longitudinally sulcate, densely pubescent or glabrous; older branchlets sparsely fissured; leaf scars subcircular-deltoid, sparsely lenticellate; terminal buds conical, densely ferruginous pubescent. Scales triangular, minute; petiole 4–15 mm, pubescent or slightly hisrute, adaxially shallowly sulcate; leaf blade oblong-elliptic, 4–9.5 × 2.5–4 cm, leathery, apex shortly acuminate, acute, or obtuse. Male flowers not known. Female inflorescences: cymes of order 2–4, umbelliform, 3–11-flowered, solitary, axillary on current year’s branchlets; hirsute; peduncles 1–2 cm, bracts below umbel, bristlelike, ca. 1 mm, pubescent; pedicels 4–6 mm; bracteoles basal, 1 or 2, or absent; flowers 5- or 6-merous; calyx patelliform, ca. 3.5 mm in diam., pubescent, lobes deltoid, apex shallowly 4-lobed. Fruit red, globose, 5–7 mm in diam.; exocarp thick, smooth; persistent calyx explanate, convex; pyrenes 4 or 5, oblong-ellipsoidal, 4–6 mm, ca. 2.5 mm in diam., abaxially broadly and deeply 1-sulcate, smooth, not striate, endocarp leathery. Fl. May, fr. Aug–Dec.

- Sparse forest or shrub forest on mountains, road sides; 300–700 m. Fujian, Guangdong, Guangxi (Guinan), Hunan, Jiangxi.


7b. Ilex lonicerifolia var. matsudae (Yamamoto) Yamamoto, J. Soc. Trop. Agric. 5: 55. 1933 ["matsudai"].

Trees small. Branchlets ridged, glabrous. Petiole 8–15 mm; leaf blade oblong-elliptic, 4–9.5 × 2.5–4 cm, leathery, apex acute or obtuse. Fruit ellipsoidal, 6–8 mm in diam.; pyrenes 4 or 5.

- Evergreen forests; ca. 100–300 m. S Taiwan (Hengchun peninsula).

8. Ilex sterrophylla Merrill & Chun, Sunyatsenia 5: 110. 1940.

Trees evergreen, small, to 15 m tall; trunk to 70 cm d.b.h. Branchlets subterete, plicate; lenticels numerous, circular or deltoid; terminal buds ovoid, scales densely ciliate. Petiole 1.5–2.5 cm, adaxially flat, upper half evidently winged by deciduous leaf base; leaf blade ovate or oblong or oblong-elliptic, 5–8 × 2–4 cm, leathery, midvein raised adaxially, lateral veins 8–10 pairs, obscure on both surfaces, base cuneate or subrounded, margin entire, very rarely with 1 or 2 obscure teeth, apex acuminate, acumen 5–10 mm. Inflorescences: cymes, solitary, axillary on current year’s branchlets, glabrous. Male inflorescences: cymes of order 3 or 4, 5–13-flowered; peduncles 1.5–3 cm; secondary axis 1–2 mm; bracts subulate, ca. 1.2 mm; pedicels 3–5 mm; calyx patelliform, 4- or 5-lobed, lobes rounded or deltoid, glabrous, ciliate; corolla white, petals oblong-oblanceolate, basally slightly conuate; stamens 4 or 5, shorter than petals, anthers oblong, ca. 1 mm; rudimentary ovary ovoid, ca. 1 mm, rostellate, apex shallowly 4-lobed. Female inflorescences: cymes of order 2, 3-flowered; peduncles 1.2–3.3 cm; pedicels 5–8 mm; calyx and corolla as in male flowers; staminodes ca. 3/4 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 2 mm in diam., stigma thickly discoid. Fruit red, oblong, 7–9 mm; persistent calyx explanate, ca. 3 mm in diam., rounded, ciliate; persistent stigma thickly discoid; pyrenes 4, oblong, 5–6 mm, ca. 3 mm in diam., abaxially shallowly concave, smooth, not striate, endocarp leathery. Fl. Apr–May, fr. Sep–Oct.

- Dense mountain forests; 500–1600 m. Guangdong (Yaoshan), S Guangxi (Shangsi), Hainan [Vietnam].

木姜冬青 mu jiang dong qing

Ilex chowii S. Y. Hu; I. editicostata var. chowii (S. Y. Hu) S. Y. Hu.

Shrubs to small trees, evergreen, 6–15 m tall. Young branchlets brown-black, robust, angular; older branchlets castaneous-gray to black; lenticels sparse, circular, indistinct; leaf scars semicircular, large, slightly raised; terminal buds conical, ca. 5 mm, yellow-white ciliate. Petiole robust, 1–3 cm; leaf blade green, lanceolate or oblong, 10–17 × 3–8.5 cm, leathery; glabrous, midvein conspicuously raised adaxially, lateral veins 10–12 pairs, often obscure on both surfaces, reticulate veins sometimes evident, base cuneate, margin entire, recurved, apex acuminate, acumen 5–15 mm. Inflorescences: cymes solitary, axillary on current year’s branchlets. Male inflorescences: cymes of order 2 or 3; peduncles 1.2–1.8 cm, glabrous; pedicels 3–8 mm, glabrous; bracteoles 1 or 2, basal, ovate-deltoid, or deciduous; flowers white, 4- or 5-merous; calyx shallowly cup-shaped, 2–3 mm in diam., shallowly 4- or 5-lobed, lobes broadly deltoid, ca. 1 mm, ciliate; corolla rotate, ca. 5 mm in diam., petals reflexed at anthesis, broadly ovate, ca. 3 × 2 mm, basally slightly connate; stamens shorter than petals, anthers ovoid-oblong; rudimentary ovary pulvinate. Female flowers not known. Inflorescences: cymes of order 1 or 2, 1–3-fruited. Fruit red, slightly connected; stamens ca. 1/2 as long as petals, anthers ovoid-oblong, rarely ovate-rounded; calyx cup-shaped, ca. 1 mm in diam., shallowly 4-lobed, lobes orbicular, puberulent, ciliate; corolla rotate, ca. 4 mm in diam., petals obovate, ca. 3 × 1.5 mm, basally slightly connate; stamens ca. 1/2 as long as petals, anthers oblong. Female flowers not known. Inflorescences: cymes of order 2, 1–3-fruited. Fruit red, globose, 5–7 mm in diam.; persistent calyx expanate, ca. 3 mm in diam., shallow lobes broadly deltoid, ciliate; persistent stigma thinly discoid, shallowly 5-lobed; pyrenes 4–6, oblong, 7–8 mm, ca. 2.5 mm in diam., abaxially shallowly 1-sulcate, endocarp subwoody. Fl. May–Jul, fr. Aug–Dec.

Evergreen broad-leaved forests, forest margins on mountain slopes; 500–1700 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Zhejiang.


粗枝冬青 cu zhi dong qing

Shrubs evergreen. Branchlets brown-purple, robust, subterete, plicate, ca. 5 mm in diam., glabrous throughout; terminal buds glabrous or thinly ciliate. Petiole 1–1.5 cm, ca. 3 mm in diam., flat adaxially, broadly winged, glabrous; leaf blade purple-brown, shiny when dry, oblong or oblong-elliptic, 6.5–8 × 3–4 cm, thickly leathery, both surfaces glabrous, midvein raised on both surfaces, lateral veins 10–14 pairs, and reticulate veins raised axially, impressed adaxially, base obtuse or cuneate and decurrent, margin entire, slightly recurved, apex shortly acuminate. Flowers not known. Inflorescences: cymes, 3-fruited, solitary, axillary; peduncles 1–1.2 mm, glabrous; fruiting pedicels 4–6 mm, compressed, glabrous. Fruit red, globose, ca. 6 mm in diam.; persistent calyx ca. 3 mm in diam., glabrous, 6-lobed, lobes suborbicular, not ciliate; persistent stigma thickly discoid or mamiliform; pyrenes 6, oblong, ca. 6 mm, ca. 2.5 mm in diam., abaxially flat or slightly broadly sulcate, endocarp stony. Fl. and fr. unknown.

Mixed forests; 400–1000 m. Guangxi (Pingnan).


木姜冬青 mu jiang dong qing

Ilex editicostata Hu & T. Tang var. litseifolia (Hu & T. Tang) S. Y. Hu.

Shrubs to small trees, evergreen, 3–6 m tall. Current year’s young branchlets purple-black when dry, thinly angular; old branches gray-brown; lenticels sparse, obtuse; leaf scars subcircum, convex; terminal buds conical, ca. 5 mm, brown-yellow pilose. Petiole 1–2 cm, compressed, pilose, hairs deciduous; leaf blade abaxially greenish, adaxially green, elliptic-lanceolate or ovate-lanceolate, 5–8 × 2–4 cm, leathery, both surfaces glabrous, midvein raised adaxially, brown-yellow pilose, glabrescent, lateral veins 7–9 pairs, raised on both surfaces, pilose, base cuneate to broadly cuneate, margin entire, slightly recurved, apex acuminate. Inflorescences: cymes, solitary, axillary on current year’s branchlets. Male inflorescences: cymes of order (2 or)3, (3–)5–7-flowered; peduncles 7–12 mm, brown-yellow pilose, glabrescent; bracteoles 1, basal, linear, ca. 2 mm, or absent; flowers white, 4-merous; calyx cup-shaped, ca. 1 mm in diam., shallowly 4-lobed, lobes orbicular, puberulent, ciliate; corolla rotate, ca. 4 mm in diam., petals obovate, ca. 3 × 1.5 mm, basally slightly connate; stamens ca. 1/2 as long as petals, anthers oblong. Female flowers not known. Inflorescences: cymes of order 2, 1–3-fruited. Fruit red, globose, 5–7 mm in diam.; persistent calyx expanate, ca. 3 mm in diam., shallow lobes broadly orbicular, ciliate; persistent stigma thinly discoid, shallowly 4- or 5-lobed; pyrenes 5, ca. 5 mm, ca. 1.8 mm in diam., abaxially shallowly sulcate, laterally smooth, endocarp subleathery. Fl. May–Jul, fr. Aug–Nov.

Evergreen broad-leaved forests, forest margins on mountain slopes; 700–1100(–2100) m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Zhejiang.


汝昌冬青 ru chang dong qing

Trees evergreen, ca. 10 m tall. Young branchlets purple-black, glabrous, longitudinally plicate; old branchlets brown, with sparse inconspicuous lenticels; terminal buds ovoid, hispitate. Petiole terete, 1–1.3 cm, abaxially carinate, adaxially flat, glabrous; leaf blade oblong or elliptic-oblong, 7–13 × 3–4 cm, leathery, glabrous, midvein raised on both surfaces, lateral veins 10–14 pairs, and dense reticulate veins slightly raised on both surfaces, base cuneate or obtuse, margin entire, recurved, apex acuminate. Flowers not known. Inflorescences: cymes, 1–3-fruited, solitary, axillary; peduncles 5–7 mm, densely pubent; fruiting pedicels 5–7 mm, densely pubescent or glabrescent. Fruit ellipsoidal, ca. 10 mm, 5–7 mm in diam.; persistent calyx ca. 5 mm in diam., 5-lobed; persistent stigma thinly discoid; pyrenes 5, oblong, ca. 7 mm, ca. 4 mm in diam., abaxially longitudinally and deeply 1-sulcate, rugose when dry, endocarp leathery. Fl. unknown, fr. Aug–Nov.

Evergreen broad-leaved forests, *Pinus massoniana* forests; 500–1200 m. Fujian, Guangdong, Jiangxi, Zhejiang (Taishun).

黑果冬青 hei guo dong qing

Trees evergreen, ca. 10 m tall. Young branchlets black-brown, robust, angular, sulcate, glabrous; leaf scars subcircular, slightly convex; older branchlets subterete; lenticels elliptic, convex; terminal buds large, scales ovate-elliptic, 8–12 × 5–6 mm, densely long ciliate. Petiole 1.5–3 cm, stout, glabrous; leaf blade elliptic, 12–16 × 4–6 cm, papery to leathery, midvein abaxially densely yellow tomentose or glabrous, adaxially flat on distal half to impressed on proximal half, lateral veins 14–18 pairs, and reticulate veins evident on both surfaces, base rounded, obtuse, or broadly cuneate, margin serrate or crenate-serrate, rarely subentire, apex acuminate. Flowers not known. Infructescences: cymes, solitary, axillary on current year’s branchlets; peduncles 3–6(–10) mm, compressed, apically thickening, glabrous; fruiting pedicels 5–8 mm, glabrous. Fruit red, globose, ca. 1 cm in diam.; persistent calyx patent, explanate, deeply 5– or 6-lobed, lobes orbicular, membranous at margin, ciliate; persistent stigma discoid; pyrenes 5, oblong, abaxially deeply 1-sulcate, cross section U-shaped. Fl. unknown, fr. Nov.–Dec.

- Mountain forests; 1700–2000 m. SE Yunnan (Malipo).


假楠叶冬青 jia nan ye dong qing

Trees evergreen, ca. 10 m tall, glabrous throughout. Young branchlets purple-black, shiny, rugose, angular, sulcate; older branchlets with subcircular, convex leaf scars and sparse, elliptic lenticels; terminal buds conical, smooth, apex acuminate. Petiole 1.8–2 cm, robust, sulcate adaxially, rounded, thinly striate abaxially, narrowly winged in upper half by decurrent leaf base; leaf blade orbicular to ovate-elliptic, 15–18 × 5–7 cm, papery, midvein impressed adaxially, lateral veins 18–20 pairs, raised on both surfaces, anastomosing near margin, reticulate veins very evident on both surfaces, base broadly cuneate to rounded, margin undulate, sparsely and shallowly serrulate, apex acuminate. Flowers not known. Infructescences: cymes, solitary, axillary on current year’s branchlets; peduncles 7–12 mm; fruiting pedicels 3–7 mm. Fruit (immature) ovoid-globose or globose; persistent calyx shallowly 5- or 6-lobed, lobes ciliate; persistent stigma capitulate. Fl. unknown, fr. Jul–Aug.

- Woods on mountains; ca. 1500 m. SE Yunnan (Pingbian).


秀荚冬青 xiu ying dong qing

Trees evergreen, 2–3 m tall. Branchlets terete, longitudinally ridged, puberulent or glabrescent. Petiole ca. 5 mm, puberulent, narrowly winged by decurrent leaf base; leaf blade abaxially greenish, adaxially green, elliptic, rarely ovate, 2.5–5 × 1–2 cm, papery, glabrous except on midvein adaxially, midvein impressed, puberulent adaxially, lateral veins 5–7 pairs, evident on both surfaces, anastomosing near margin, reticulate veins slightly distinct, base cuneate, margin entire or serrate apically, apex acuminate or acute. Inflorescences: cymes, solitary, axillary. Male inflorescences: cymes of order 2 or 3, 3–7-flowered, umbelliform; peduncles 6–10 mm, slender, glabrescent; pedicels ca. as long as peduncles; calyx 5-lobed, lobes ovate or suborbicular, margin entire or erose; petals ovate-oblong, ca. 3 mm, basally slightly connate; stamens shorter than petals, anthers oblong; rudimentary ovary ovoid. Female
infrutescences: cymes of order 1 or 2, 1–3-flowered; peduncles ca. 5 mm; pedicels nearly as long as peduncles; 1-flowered pedicels 9–12 mm, glabrous; calyx and corolla as in male flowers; staminodes ca. 1/2 as long as petals, sterile anthers sagittate; ovary ovoid, stigma discoid or cristate. Infructescences: 1-fruit pedicels 1.5–1.8 cm, glabrous or glabrescent. Fruit ellipsoidal, 9–10 mm, 5–6 mm in diam., longitudinally striate when dry; persistent stigma discoid; pyrenes 5, ellipsoidal, abaxially broadly 1-sulcate, not striate, endocarp subwoody. Fl. Apr, fr. Jul–Nov.

- Mountain forests; low to middle elevations. Hainan (Baoting, Ledong, Wanning).


香冬青 xiang dong qing


Trees evergreen, 7–15 m tall. Young branchlets brown, angular, glabrous throughout; older branchlets subterete; lenticels raised, elliptic. Petiole 1.5–2 cm, winged; leaf blade obovate when dry, ovate or elliptic, 5–6.5(–10) × 2–2.5(–4) cm, leathery, both surfaces glabrous, midvein raised on both surfaces, lateral veins 8–10 pairs, slightly raised on both surfaces, reticulate veins ± evident on both surfaces, base broadly cuneate, decurrent, margin sparsely and minutely crenate, slightly incurved, apex acuminate, acumen triangular. Flowers not known. Infructescences: cymes of order 2 or 3, solitary, axillary, 3–7-fruited, sometimes umbelliform; peduncles (1–)1.5–2 cm, compressed; secondary axis 3–7-fruited; pedicels ca. 4 mm; fruiting pedicels ca. 3 mm; persistent stigma mammilliform; pyrenes 4, oblong, ca. 9 mm, ca. 6 mm in diam.; persistent stigma mamilloide; pyrenes 4, oblong, ca. 8 mm, ca. 3 mm in diam., endocarp stony. Fl. Jun, fr. unknown.

- Evergreen broad-leaved forests; 600–1600 m. S Anhui (Huang Shan), Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang.


梨叶冬青 li ye dong qing

Trees evergreen, small, ca. 2 m tall. Young branchlets castaneous, longitudinally ridged and sulcate, glabrous; older branchlets gray, longitudinally fissured, with circular or elliptic convex lenticels. Stipules triangular, minute; petiole 7–8 mm, sulcate adaxially, glabrous; leaf blade castaneous, shiny when dry, broadly elliptic, 4–6.5 × 3–4 cm, subleathery, both surfaces glabrous, midvein flat adaxially, lateral veins 7 or 8 pairs, raised abaxially, slightly impressed adaxially, anastomosing near margin, reticulate veins obscure adaxially, distinct abaxially, base rounded or obtuse, rarely cuneate, margin finely serrate (serratulate), teeth black, apex acuminate. Flowers not known. Infructescences: cymes of order 2, solitary, axillary, 2-fruited; peduncles ca. 4 mm; fruiting pedicels ca. 3 mm; persistent bracteoles 2, subbasal. Fruit deep red, globose, ca. 7 mm in diam.; persistent calyx patelliform, ca. 3 mm in diam., 4-lobed, lobes suborbicular; persistent stigma discoid, 4-lobed; pyrenes 4, oblong, ca. 4.5 mm, ca. 3 mm in diam., abaxially longitudinally broadly 1-sulcate, endocarp stony. Fl. unknown, fr. Nov.

- Forests; 1100–3000 m. Sichuan (Yingjing).


冬青 dong qing

Callicarpa cavaleriei H. Léveillé; Celastrus bodinieri H. Léveillé; Embelia rubroviolacea H. Léveillé; Ilex jinggangshanensis C. J. Tseng; I. myriadenia Hance; I. oldhamii Miquel; I. purpurea Hasskarrl; I. purpurea var. myriadenia (Hance) Loesener; I. purpurea f. oldhamii (Miquel) Loesener; I. purpurea var. oldhamii (Miquel) Loesener.

Trees evergreen, to 15 m tall; bark gray-black. Current year’s branchlets gray, terete, thinly angular; older branchlets glabrous, with crescent-shaped, convex leaf scars; lenticels obscure, small. Plants glabrous, or sometimes villous on terminal buds, petioles, and adaxial midvein of young leaves of male plant. Petiole 8–10 mm, flat or narrowly sulcate adaxially; leaf blade deep brown, shiny when dry adaxially, elliptic or lanceolate, rarely ovate, 5–11 × 2–4 cm, thinly leathery to leathery, glabrous, rarely adaxially pilose on midvein when young, midvein flat adaxially, lateral veins 6–9 pairs, distinct abaxially, obscure adaxially, base cuneate or obtuse, margin crenate, or sometimes young leaf serrate, apex acuminate, acumens 5–10 mm. Inflorescences: cymes, solitary, axillary on current year’s branchlets, glabrous. Male inflorescences: cymes of order 3–5, 7–24-flowered; peduncles 7–14 mm; secondary axis 2–5 mm; pedicels ca. 2 mm, glabrous; flowers purplish or purple-red, 4- or 5-merous; calyx shallowly cup-shaped, lobes broadly deltoid, ciliate; corolla rotate, ca. 5 mm in diam., petals reflexed at anthesis, ca. 2.5 × 2 mm, basally slightly connate; stamens shorter than petals, anthers elliptic; rudimentary ovary conical, inferior to 1 mm. Female inflorescences: cymes of order 2 or 3, 3–7-flowered; peduncles 3–10 mm, compressed; secondary axis poorly developed; pedicels 6–10 mm; calyx and corolla as in male flowers; staminodes ca. 1/2 as long as petals, sterile anthers cordate; ovary ovoid, stigma thickly discoid, inconspicuously 4- or 5-lobed. Fruit red, narrowly globose, 1–1.2 cm, 6–8 mm in diam.; pyrenes 4 or 5, narrowly lanceolate, 9–10 mm, ca. 2.5 mm in diam., abaxially smooth, concave, trigonous in cross section, endocarp thickly leathery. Fl. Apr–Jul, fr. Jul–Dec.

Evergreen broad-leaved forest, margins of mountain slopes; sea level to 2000 m. Anhui, Fujian, Guangdong, Guangxi, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Taiwan, Yunnan, Zhejiang (Japan).


有毛冬青 you mao dong qing


Trees evergreen, 8–15 m tall. Young branchlets terete, thinly angular; older branchlets lenticellate. Buds, petioles, young leaves, midvein adaxially and mature leaves puberulent. Petiole 8–12 mm, narrowly sulcate adaxially; leaf blade deep brown when dry, elliptic or oblong, 8–11 × 4–5.5 cm, leathery, midvein raised on both surfaces, lateral veins 6–10 pairs, evident
abaxially, obscure adaxially, base cuneate, margin crenate, apex acuminate. Flowers not known. Inflorescences: cymes of order 1 or 2, 1–3-fruited; peduncles and fruiting pedicels puberulent. Fruit red, subglobose, ca. 1 cm, 6–8 mm in diam.; persistent stigma thinly discoid, 4-lobed; pyrenes 4 or 5, ellipsoidal, 8–9 mm, ca. 2.5 mm in diam., abaxially smooth, shallowly sulcate, trigonous in cross section, endocarp thickly leathery. Fl. unknown, fr. Sep.

- Forests; ca. 2100 m. SE Yunnan (Wenshan).


黑叶冬青 heiyedongqing

Shrubs evergreen, ca. 5 m tall. Branchlets brown-purple, subterete, stout, ca. 5 mm in diam., plicate, glabrous throughout; terminal buds glabrous or ciliate. Petiole 1–1.5 cm, flat adaxially, broadly winged, glabrous; leaf blade purple-brown when dry, shiny, elliptic or oblong-elliptic, (6–)6.5–8(–11.5) × 3–4(–6) cm, thickly leathery, both surfaces glabrous, midvein raised on both surfaces, lateral veins 10–14 pairs, and reticulate veins slightly raised abaxially, impressed adaxially, base obtuse or cuneate and decurrent, margin entire, slightly recurved, apex shortly acuminate. Flowers not known. Inflorescences: cymes of order 2, 3-fruited, solitary, axillary; peduncles 1–1.2 mm; fruiting pedicels 4–5 mm, compressed, glabrous. Fruit red, globose, ca. 6 mm; persistent calyx patelliform, ca. 3 mm in diam., glabrous, 6-lobed, lobes suborbicular, not ciliate; persistent stigma thickly discoid or mammilliform; pyrenes 6, oblong, ca. 6 mm, ca. 2.5 mm in diam., abaxially flat or slightly broadly sulcate, endocarp substony. Fl. unknown, fr. Nov.

- Dense mixed forests; 300–1200 m. Guangdong (Lechang), Guangxi (Pingnan), Hunan.


硬叶冬青 yingyedongqing


Shrubs or trees, evergreen, 8–10 m tall. Young branchlets black or dark red, glabrous; older branchlets gray. Petiole 5–10 mm, glabrous; leaf blade purple-brown or yellowish brown, shiny adaxially when dry, elliptic or oblong-elliptic, 4–11.7 × 1.5–4.3 cm, leathery, both surfaces glabrous, midvein flat or slightly raised adaxially, lateral veins 7 or 8 pairs, indistinct, reticulate veins obscure on both surfaces, base obtuse or broadly cuneate, margin sparsely and inconspicuously serrulate, apex acute, shortly acuminate, or obtuse. Inflorescences: cymes, solitary, axillary. Male inflorescences: cymes of order 3, 7-flowered; flowers 4- or 5-merous; calyx shallowly 5-lobed, lobes obtuse-rounded; corolla rotate; stamens 5, shorter than petals; rudimentary ovary glabrous. Female inflorescences: cymes of order 2, 3-flowered; flowers 4- or 5-merous; calyx ciliate. Inflorescences: 1–3-fruited; peduncles slightly compressed, 9–20 mm, thinly striate, glabrous; fruiting pedicels 0.7–15 mm, glabrous. Fruit black when dry, globose, 6–8 mm in diam.; persistent calyx 5-lobed, ciliate; persistent stigma thickly discoid; pyrenes 5, oblong, ca. 4 mm, ca. 2.5 mm in diam., abaxially longitudinally 1-sulcate, endocarp leathery. Fl. May–Jun, fr. Sep–Nov.

- Thin forests on hills; 400–1200 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang.

23. *Ilex kwangtungensis* Merrill, J. Arnold Arbor. 8: 8. 1927.

广东冬青 guangdongdongqing

*Ilex kwangtungensis* var. *pilosissima* Handel-Mazzetti; *I. phanerophlebia* Merrill; *I. shweliensis* H. F. Comber.

Shrubs or trees, evergreen, 6–14 m tall. Bark gray-brown, smooth, with light-colored, small, rounded, slightly convex lenticels. Young branchlets black when dry, longitudinally ridged, ferruginous pubescent, puberulent, or nearly glabrous; old branchlets dark gray-brown, terete, pubescent or glabrescent; leaf scars semicircular, slightly raised; terminal buds lanceolate, ca. 6 mm, densely ferruginous pubescent. Stipules caducous; petiole 7–17 mm, adaxially longitudinally sulcate, minutely puberulent; leaf blade brown or deep oliveaceous when dry, ovate-elliptic, oblong, or lanceolate, 7–16 × 3–7 cm, subleathery, both surfaces very minutely puberulent (curly villous) when young, densely so on midvein and abaxially, glabrescent or nearly glabrous, midvein impressed adaxially, lateral veins 9–11 pairs, impressed adaxially, raised abaxially, furcating and anastomosing near margin, reticulate veins evident abaxially, indistinct adaxially, base obtuse to rounded, margin minutely serrate or subentire, slightly recurved, apex acuminate. Inflorescences: cymes, solitary, axillary on current year’s branchlets. Male inflorescences: cymes of order 4 or 5, 12–20-flowered, minutely puberulent; peduncles 9–12 mm; secondary axis 3–5 mm; tertiary axis to 2 mm; bracts linear-lanceolate, 5–7 mm; bracteoles basal, ovate-deltoid, densely puberulent; flowers purple or pink, 4- or 5-merous; calyx patelliform, 2.5–3 mm in diam., lobes orbicular, ca. 0.75 mm, puberulent, ciliate; corolla rotate, 7–8 mm in diam., petals oblong, ca. 1.5 mm; rudimentary ovary conical, ca. 1.5 mm, rostellate. Female inflorescences: cymes of order 2 or 3, 3–7-flowered, puberulent; secondary axis 3–4 mm; bracts lanceolate, submedian on secondary axis; pedicels 4–7 mm; flowers light purple or pink; calyx as in male flowers; petals ovate, ca. 2.5 mm; staminodes ca. 3/4 as long as petals, sterile anthers cordate; ovary ovoid, ca. 2 mm in diam., stigma mammilliform, shallowly 4-lobed. Fruit red, black when dry, ellipsoidal, 7–9 mm in diam., smooth, shiny; persistent calyx exlanate, pubescent, ciliate; persistent stigma convex, 4-lobed; pyrenes 4, ellipsoidal, ca. 6 mm, ca. 3 mm in diam., abaxially broadly and deeply U-sulcate, laterally smooth, endocarp leathery. Fl. May–Aug, fr. Sep–Dec.

- Evergreen broad-leaved forests, shrub forests on mountain slopes; 300–1200 m. Fujian, Guangdong, Guangxi, Huainan, Hunan, Jiangxi, Yunnan, Zhejiang.


阔叶冬青 kuoyedongqing


Trees evergreen, 4–27 m tall. Branchlets tetragonous, stout,
longitudinally striate, densely ferruginous or dirty yellow villous; lenticels indistinct; leaf scars semicircular, slightly raised; terminal buds conical, densely dirty yellow villous. Petiole 1–1.3 cm, stout, densely villous, rounded abaxially, narrowly sulcate adaxially; leaf blade oblong or obovate, 9–22 × 3.5–10 cm, leathery to subleathery, abaxially crispately villous or glabrescent, adaxially sparsely pubescent or glabrous, midvein raised and villous abaxially, densely dirty yellow pubescent adaxially, base rounded or subrounded, margin shallowly serrulate or subentire, apex acuminate. Inflorescences: cymes or compound cymes, solitary, axillary on current year’s branchlets. Male inflorescences: cymes of order 2–4; peduncles 1.5–2.8 cm, compressed, sparsely crispately villous; secondary axis unequal, longer than pedicels; pedicels 1–2 mm, pubescent; flowers purple-red; calyx deeply 4-lobed, lobes ovate, outside sparsely puberulent; petals 4, oblong, ca. 1.5 × 1 mm, basally slightly connate, apex rounded; stamens 4, ca. 2/3 as long as petals, anthers elliptic; rudimentary ovary conical, minute, stigma distinct, slightly lobed. Female flowers not known. Inflorescences: compound cymes; peduncles 1–2 cm, compressed, pubescent; fruiting pedicels 5–7 mm, pubescent. Fruit ellipsoid-globose, 9–10 mm, 6–8 mm in diam., striate, sulcate; persistent calyx deeply 4- or 5-lobed, lobes deltoid, ciliate; persistent stigma dis-coid, flat, shallowly 4-lobed; pyrenes 4–6, ellipsoidal, abaxially deeply 1-sulcate, smooth. Fl. Jun, fr. Aug–Dec.

- Evergreen broad-leaved forests; 1200–1800 m. Guangdong, Guangxi, Hainan, SE Yunnan.


**德宏冬青 de hong dong qing**

Trees evergreen, 10–15 m tall. Young branchlets, leaves, inflorescences, and persistent calyx yellow-white curved villous throughout. Young branchlets slender, ca. 2 mm in diam. Petiole 0.4–1.3 cm, villous; leaf blade oblong or obovate, 5–13.5 × 3.5–5 cm, thinly leathery, midvein flat adaxially, lateral veins 10–14 pairs, raised on both surfaces, base cuneate or obtuse, margin slightly serrate in upper part, apex shortly acuminate or truncate. Flowers not known. Inflorescences: cymes of order 3, umbelliform, solitary, axillary, 5-fruited; peduncles (0.5–)0.9–2 cm; fruiting pedicels 5–7 mm. Fruit red, castaneous when dry, elliptic or obovate, 5–9 × 2.5–3.5 cm, papery or subleathery, glabrous except on midvein, puberulent adaxially, lateral veins 7 or 8 pairs, raised abaxially, flat adaxially, adaxially flat or slightly impressed, base cuneate, margin undulate, indistinctly serrulate, apex shortly acuminate. Flowers not known. Inflorescences: cymes often of order 1, 1-fruited, solitary, axillary; fruiting pedicels 1.7–2 cm, angular, sparsely puberulent; bracteoles 2, deltoid-ovate, puberulent. Fruit black when dry, ellipsoidal, ca. 1 cm, ca. 7 mm in diam., sometimes longitudinally and sulcate; persistent calyx ca. 6 mm in diam., 4-lobed, lobes suborbicular, ciliate; persistent stigma mammilliform; pyrenes 4, ellipsoidal, ca. 9 mm, ca. 3 mm in diam., abaxially broadly 1-sulcate, endocarp subwoody. Fl. unknown, fr. Oct–Dec.

- Dense forests on mountains; 1100–1300 m. SW Yunnan (Longchuan).


**龙陵冬青 long ling dong qing**


Trees evergreen, small, ca. 5 m tall. Current year’s branchlets black-brown, striate; leaf scars suborbicular, conspicuously convex; lenticels elliptic, sparsely pubescent; second year’s branchlets brown-gray, longitudinally striate, leaf scars and lenticels very conspicuous; terminal buds ovoid, densely yellow villous. Petiole 6–10 mm, stout, yellow pubescent, sulcate adaxially; leaf blade elliptic, 9–11 × 4–5 cm, thinly leathery, midvein raised and glabrous abaxially, slightly impressed and minutely puberulent adaxially, lateral veins 9 or 10 pairs, slightly distinct abaxially, slightly impressed adaxially, base subrounded, margin sparsely serrate, apex acuminate. Flowers not known. Inflorescences: cymes of order 2, 3-fruited, solitary, axillary on current year’s branchlets; peduncles 5–6 mm, compressed, pubescent, puberulent pedicels ca. 5 mm, puberulent. Fruit red, globose, ca. 1 cm in diam.; persistent calyx slightly 6-lobed or undulate, ciliate; persistent stigma thinly discoid, shallowly 4-lobed; pyrenes 4, abaxially broadly 1-sulcate, cross section V-shaped. Fl. unknown, fr. Nov.

- Mountain forests; ca. 1500 m. W Yunnan (Longling).


**黔灵山冬青 qian ling shan dong qing**

Trees evergreen, ca. 5 m tall. Young branchlets slender, longitudinally angular, puberulent; older branchlets longitudinally striate, nearly glabrous; terminal buds lanceolate, bud scales pubescent or puberulent above. Petiole ca. 5 mm, alate, adaxially pubescent or puberulent; leaf blade abaxially brownish, adaxially brown when dry, elliptic or obovate, 5–9 × 2.5–3.5 cm, papery or subleathery, glabrous except on midvein, puberulent adaxially, lateral veins 7 or 8 pairs, raised abaxially, flat adaxially, adaxially flat, anastomosing near margin, reticulate veins evident only abaxially, base cuneate, margin undulate, indistinctly serrate, apex shortly acuminate. Flowers not known. Inflorescences: cymes often of order 1, 1-fruited, solitary, axillary; fruiting pedicels 1.7–2 cm, angular, sparsely puberulent; bracteoles 2, deltoid-ovate, puberulent. Fruit black when dry, ellipsoidal, ca. 1 cm, ca. 7 mm in diam., sometimes longitudinally and sulcate; persistent calyx ca. 6 mm in diam., 4-lobed, lobes suborbicular, ciliate; persistent stigma mammilliform; pyrenes 4, ellipsoidal, ca. 9 mm, ca. 3 mm in diam., abaxially broadly 1-sulcate, endocarp subwoody. Fl. unknown, fr. Oct.

- Moist forests; 900–1000 m. SW Yunnan (Longchuan).


**锈毛冬青 xiu mao dong qing**

Shrubs or trees, evergreen, 2.5–10 m tall. Branchlets terete, young branchlets ferruginous-yellow villous. Petiole 2–4 mm, adaxially flat or slightly impressed, ferruginous villous; leaf blade ovate or ovate-elliptic, 2–7 × 1.5–3.5 cm, leathery, midvein flat adaxially, ferruginous villous on both surfaces, lateral veins 8–10 pairs, distinct on both surfaces, base rounded, rarely shallowly cordate to obtuse, margin sparsely crenate-serrate, teeth black, apex acuminate. Inflorescences: cymes, solitary, axillary at scales or leaves of current year’s branchlets. Male inflorescences: cymes of order 1–3, 1–6-flowered; peduncles 3–6 mm; pedicels 1–3 mm; flowers 5–7-merous; calyx subcampanulate, pubescent, deeply lobed; petals ovate-deltoid, ca. 1 cm, ciliate; petals ovate-oblong, basally slightly connate, margin erose; stamens 5–7, ca. as long as petals, anthers oblong; rudimentary ovary subglobose, rostellate. Female flowers not...
known. Inflorescences: cymes of order 1 or 2, 1–3-fruited; peduncles 6–10 mm; fruiting pedicels 6–9 mm, villous; bracteoles 2, linear, villous. Fruit brown, shiny, subglobose, 5–7 mm in diam., rugose when dry; persistent calyx patelliform, expla- nate, villous, ciliate, (4 or)5-lobed; persistent stigma capitulate; pyrenes 4–6, abaxially 1-sulcate. Fl. Apr–Jun, fr. Sep–Oct.

- Dense forests on mountain slopes; 1000–1900 m. Guangxi, Guizhou, Yunnan.


红河冬青 hong he dong qing

_Ilex manneiensis var. glabra_ C. Y. Wu ex Y. R. Li.

Shrubs or trees, evergreen, (2–)5–8(–20) m tall. Branches deep brown, stout, rugose; young branchlets yellow villous; terminal buds large, 5–8 mm, bud scales densely long ciliate. Petiole 1.5–2 cm, yellowish pubescent when young, then glabrescent or pubescent along groove; leaf blade elliptic, 8–12 × 2.5–4 cm, thinly leathery, midvein adaxially raised and densely and deciduously yellowish tomentose, adaxially flat or slightly raised, and pubescent, persistent, lateral veins 15–17 pairs, subparallel, raised on both surfaces, anastomosing near margin, reticulate veins evident abaxially, indistinct adaxially, base rounded to cuneate, margin entire, apex acuminate. Inflorescences: cymes, solitary, axillary on current year’s branchlets. Male inflorescences: cymes of order 2 or 3, 3(–5)-flowered; peduncles 5–12 mm, very compressed; pedicels 2–4 mm; calyx connate at base, ciliate; stamens ca. 3/4 as long as petals, anthers oblong; rudimentary ovary ovoid-globose, apex shallowly 4-lobed. Female inflorescences: cymes of order 2, 3-flowered, pubescent; peduncle, pedicels, calyx, and corolla as in male flowers; staminodes slightly shorter than petals, sterile anthers sagittate-ovoid; ovary conical-globose, style conspicuous, stigma shallowly 4-lobed. Fruit black, globose, 6–8 mm in diam.; persistent calyx expla- nate; persistent stigma discoid; pyrenes 4–6, oblong, trigonous in cross section, ca. 8 mm, ca. 2.5 mm in diam., abaxially smooth, shallowly and broadly 1-sulcate, endocarp woody. Fl. unknown, fr. Oct–Nov.

- Forests; 2400–3200 m. Yunnan.


硬毛冬青 ying mao dong qing

_Ilex hirsuta_ Merrill var. lichuansensis S. Y. Hu.

Trees evergreen, 3–6 m tall. Current year’s branchlets subtreate, densely ferruginous hirsute; second year’s branchlets black, hirsute. Petiole ca. 1.5 cm, hirsute; leaf blade olivaceous, shiny when dry, elliptic or oblong-elliptic, 6–7 × 2.5–4 cm, leathery, both surfaces densely hirsute, midvein adaxially flat or slightly raised, lateral veins 7 or 8 pairs, slightly raised on both surfaces, base obtuse, margin sparsely crenate-serrate, rarely recurved, apex acute or shortly acuminate, rarely obtuse. Inflorescences: cymes, solitary, axillary on current year’s branchlets. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles 2–3.5 cm, pedicels 0.9–1.7 cm, both ferruginous hirsute, 1-flowered pedicels ca. 2.5 cm; flowers 5-merous, yellow-green; calyx cup-shaped, lobes deltoid-ovate or broadly ovate, ciliate; petals oblong, ca. 2 mm; stamens ca. as long as petals. Female flowers not known. Inflorescences: cymes of order 2, 1–3-fruited; peduncles ca. 1.5 cm, hirsute; fruiting pedicels 0.7–1.5 cm, hirsute. Fruit globose or ellipsoidal-globose, ca. 6 mm in diam.; persistent calyx 4–5-lobed, lobes semicircular or deltoid, ciliate; persistent stigma discoid, 4–5-lobed; pyrenes 4 or 5, oblong-ellipsoidai, ca. 7 mm, ca. 3 mm in diam., abaxially longitudinally and broadly 1-sulcate, endocarp subwoody. Fl. May, fr. Sep.

- Evergreen broad-leaved forests; 200–2000 m. W Hubei (Li- chuan), Hunan (Xuefeng Shan, Yongshun), Jiangxi (Shangyou, Sui- chuan).


龙州冬青 long zhou dong qing

_Ilex longzhouensis_ C. Y. Wu ex Y. R. Li ["xylosmaefolia"]).

Trees evergreen, small, 4–6 m tall. Young branchlets slender, densely yellow tomentose; older branchlets sparsely tomentose, longitudinally striate and sulcate, with leaf scars and lenticels; terminal buds small. Petiole 3–5 mm, rounded abaxially, sulcate adaxially, densely yellow tomentose; leaf blade el- liptic-lanceolate or oblong-elliptic, 7–9 × 2–3.2 cm, papery, yellow tomentose, midvein raised abaxially, tomentose only at base, adaxially subraised or flat, lateral veins 8 or 9 pairs, raised on both surfaces or slightly impressed adaxially, reticulate veins slightly evident on both surfaces, glabrous throughout, base obtuse or rounded, margin undulate-crenulate, apex acuminate. Inflorescences: cymes, solitary, axillary on current year’s branchlets; peduncles and pedicels densely yellow tomentose. Male inflorescences: cymes of order 3 or 4, with 6 or more flowers; flowers 4-merous; calyx deeply lobed, lobes triangular, outside yellow tomentose, ciliate; petals oblong; stamens ca. as long as or slightly shorter than petals, filaments shorter than anthers, anthers oblong; rudimentary ovary globose, stigma shallowly 4-lobed. Female inflorescences: cymes of order 2 or 3, 3–6-flowered; flowers 4-merous; calyx and corolla as in male flowers; staminodes slightly shorter than petals, sterile anthers sagittate-ovoid; ovary conical-globose, style conspicuous, stigma shallowly 4-lobed. Fruit red, globose, ca. 6 mm in diam.; persistent calyx quadrangular, explanate, densely pubescent, lobes deltoid, ciliate; persistent stigma mammilliform; pyrenes 5, ob- long, ca. 5 mm, ca. 3 mm in diam., abaxially 1-sulcate, endocarp stony. Fl. May–Jun, fr. Oct.

- Thin forests on limestone hills; 500–1200 m. SW Guangxi (Longzhou), SE Yunnan (Funing).

32. Ilex excelsa (Wallich) Wallich, Numer. List, no. 4328. 1831 ["exsulca"]).

高冬青 gao dong qing

Trees evergreen, ca. 10 m tall; bark gray-brown, smooth. Current year’s branchlets glabrous or puberulent, longitudinally ridged; older branchlets gray, rugose, angular, sebaceous, with raised, elliptic lenticels and raised leaf scars; terminal buds poorly developed, with loose glabrous scales. Stipules lanceo-
late, 1–1.5 mm; petiole 1–2 cm, slender, glabrous, narrowly sulcate adaxially; leaf blade brown-olivaceous when dry, elliptic, oblong, or ovate-elliptic, 5–10 × 2–4(–5) cm, papery or subleathery, midvein impressed adaxially, lateral veins 7 or 8 pairs, raised abaxially, distinct axially, furcate and anastomosing near margin, reticulate veins obscure adaxially, evident abaxially, base cuneate or obtuse, margin entire, apex acuminate. Inflorescences: cymes of order 2 or 3 (or 4), 3–5(–15)-flowered, solitary, axillary on current year’s branchlets; flowers 4–6-merous. Male inflorescences: peduncles 4–8 mm, hirsute, base with deltoid, acute bracts; pedicels 2–5 mm, puberulent; bracteoles 1 or 2, basal; calyx patelliform, glabrous, shallowly 4- or 5-lobed, lobes orbicular, not ciliate; corolla rotate, ca. 5 mm in diam., petals oblong, ca. 2 mm, not ciliate, basally slightly connate; stamens equal or slightly longer than petals, anthers oblong; rudimentary ovary pulvinate, rostellate, apex 5-lobed. Female inflorescences: peduncles 5–12 mm; pedicels 3–4 mm, puberulent throughout; bracteoles ovate-deltoid, glabrous; calyx ca. 2.5 mm in diam., 5- or 6-lobed, lobes deltoid, not ciliate; corolla ca. 5 mm in diam., petals broadly ovate, ca. 2 mm; staminodes ca. 1/2 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 1.5 mm in diam., stigma discoid. Fruit red, ovoid-ellipsoidal, ca. 5 mm, 4–4.5 mm in diam., longitudinally angular and sulcate when dry; persistent calyx expanate, 2–2.5 mm in diam., shallowly 6-lobed, lobes suborbicular; persistent stigma thickly discoid, convex; pyrenes (4 or)5(or 6), ellipsoidal, ca. 2.7 mm, ca. 1.5 mm in diam., abaxially smooth, or 2- or 3-striate, not sulcate, endocarp leathery. Fl. Apr–Jun, fr. Aug–Nov.

Sparse forests in mountain valleys, thickets; 800–2800 m. Yunnan [Bangladesh, Bhutan, N and NE India, Nepal].

1a. Branchlets and both surfaces of leaves glabrous ........................................ 32a. var. excelsa

1b. Branchlets and abaxial surface of leaves puberulent at least on midvein .......... 32b. var. hypotricha

32a. Ilex excelsa var. excelsa

Cassine excelsa Wallich in Roxburgh, Fl. Ind. 2: 376. 1824; Ilex doniana Candolle; I. elliptica D. Don (1825), not Kunth (1824); I. nepalensis Sprengel.

Shrubs or trees, evergreen, to 20 m tall; trunk to 1 m d.b.h.; bark gray to gray-black. Young branchlets longitudinally angular, glabrous, rarely puberulent; older branchlets tereate, straight, rough, longitudinally fissured, with slightly raised obovate or deltoid leaf scars, lenticels inconspicuous; terminal buds conical, small. Stipules subulate-lanceolate, 1–1.5 mm, caducous; petiole 8–18 mm, glabrous, rarely slightly puberulent, narrowly sulcate adaxially; leaf blade ovate, obovate, or elliptic, 4–9 × 1.8–4 cm, thinly leathery or papery, both surfaces glabrous, midvein impressed adaxially, lateral veins 6–9 pairs, evident on both surfaces, anastomosing near margin, reticulate veins obscure, base obtuse or cuneate, margin entire, slightly recurved, apex shortly acuminate. Inflorescences: cymes of order (2 or)3 or 4, (2–)4–13-flowered, umbelliform, solitary, axillary on current year’s branchlets. Male inflorescences: peduncles 3–11 mm, glabrous; pedicels 3–5 mm, glabrous or puberulent; bracteoles 1 or 2, or absent, basal, ovate-deltoid; flowers white, 4-merous; calyx patelliform, ca. 2 mm in diam., puberulent, shallowly 4-lobed, lobes broadly ovate-deltoid, glabrous, not ciliate; corolla rotate, ca. 5 mm in diam., petals reflexed at anthesis, oblong, ca. 2.5 × 1.5 mm, basally slightly connate; stamens longer than petals, anthers ovoid-ellipsoidal; rudimentary ovary pulvinate, rostellate, apex 5- or 6-lobed. Female inflorescences: cymes of order 2 or 3, 3–7-flowered; pedicels 5–13 mm, glabrous; pedicels (3–)4–8 mm, glabrous or puberulent; flowers white, 5–7-merous; calyx shallowly cup-shaped, ca. 2 mm in diam., glabrous, shallowly 5-lobed, lobes deltoid, margin erose; corolla rotate, ca. 4 mm in diam., petals obovate-oblong, ca. 2 mm, basally slightly connate; staminodes ca. 1/2 as long as petals, sterile anthers ovoid; ovary ovoid, ca. 1.5 mm, stigma capitulate. Fruit red, subglobose, rarely ellipsoidal, 4–6 mm in diam.; persistent calyx expanate, ca. 3 mm in diam., shallow lobes deltoid, not ciliate; persistent stigma thickly discoid, convex, shallowly 5- or 6-lobed; pyrenes 5–7, ellipsoidal, ca. 5 mm, ca. 2.5 mm in diam., abaxially 3-striate and 2-sulcate, rarely 2-striate and 1-sulcate, laterally smooth, endocarp subwoody. Fl. Apr–Jun, fr. Aug–Dec.

Evergreen broad-leaved forests, forest margins on mountain slopes; 400–1100(–1700) m. Anhui (Sixian), Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangsu, Jiangxi, Taiwan, Yunnan, Zhejiang [Japan, Korea, Vietnam].

34. Ilex angulata Merrill & Chun, Sunyatsenia 2: 266. 1935.
Petiole 4–6 mm, adaxially sulcate; leaf blade brown-olivaceous when dry, elliptic or broadly elliptic, 3.5–5 × 1.5–2 cm, papery or membranous when young, both surfaces glabrous, midvein glabrous abaxially, impressed and glabrous or puberulent adaxially, lateral veins 5–7 pairs, slightly raised on both surfaces, fuscate and anastomosing near margin, reticulate veins indistinct on both surfaces, base cuneate or acute, margin entire, slightly recurved, rarely apically sparsely sulcate, apex acuminate. Inflorescences: cymes of order 1 or 2, 1–3–flowered, solitary, axillary on current year’s branchlets; peduncles 3–5 mm, puberulent; bracts deltoid, sparsely puberulent; pedicels 3–5 mm; bracteoles 2, basal; 1–flowered pedicels ca. 1 cm; flowers pink, 5-merous. Male inflorescences often 3-flowered; calyx peltate, 3–5 mm in diam., membranous, shallowly 5-sulcate, lobes ovate, 1–1.5 mm, not ciliate, apex rounded; corolla rotate, 6–8 mm in diam., petals ovate, ca. 3.5 mm, basally slightly connate; stamens ca. 3/4 as long as petals, anthers oblong; rudimentary ovary globose, ca. 1 mm in diam. Female inflorescences: calyx and corolla as in male flowers; staminodes ca. 1/3 as long as petals, sterile anthers sagittate; ovary ovoid, stigma mammillate; petals, sterile anthers sagittate; ovary ovoid, stigma thickly discoid, center depressed, rotate-lobed; pyrenes 6–10, oblong, ca. 4 mm, 1–1.5 mm in diam., axially longitudinally 2- or 3-sulcate and 1- or 2-sulcate, laterally smooth, endocarp woody. Fl. May–Sep, fr. Jul–Nov.

Evergreen broad-leaved forests, sparse forests on slopes; 500–1700 m. Yunnan [Bangladesh, India, Myanmar, Thailand, Vietnam].


遂昌冬青 sui chang dong qing

Trees evergreen, ca. 10 m tall. Current year’s branchlets castaneous, stout, longitudinally ridged, glabrous; second year’s branchlets gray-brown, terete, with elliptic, raised lenticels; terminal buds ovoid, glabrous. Petiole 3–3.5 cm, thick, elevated adaxially, glabrous; leaf blade castaneous-black when dry, narrowly elliptic, 14–22 × 5–8 cm, leathery, both surfaces glabrous, midvein raised on both surfaces, lateral veins 13–16 pairs, anastomosing near margin, reticulate veins evident on both surfaces, base cuneate, margin entire, apex long acuminate. Flowers not known. Infructescences: cymes of order 3, 5–7-flowered, umbelliform, solitary, axillary; peduncules 1.2–2 cm, angular, glabrous; fruiting pedicels 8–10 mm, glabrous. Fruit ellipsoidal, ca. 1 cm in diam.; persistent calyx ca. 5 mm in diam., 5- or 6-lobed, lobes suborbicular, margin entire or minutely erose, ciliate; persistent stigma thickly discoid; pyrenes 5 or 6, narrowly ellipsoidal, 9–10 mm, abaxially 1-sulcate, endocarp subwoody. Fl. unknown, fr. Aug.

- Forest margins; ca. 1200 m. Zhejiang (Suichang).


伞花冬青 san hua dong qing


Shrubs or trees, evergreen, 5–13 m tall; bark gray-white. Branchlets gray, zigzag, suberete, with rounded, raised lenticels and subcircular, raised leaf scars, glabrescent; current year’s young branchlets longitudinally striate, densely puberulent; terminal buds ovoid, small, poorly developed, densely puberulent or glabrous. Stipules subulate-deltoid, minute, puberulent; petiole 1–1.5 cm, puberulent, longitudinally sulcate adaxially; leaf blade abaxially greenish, adaxially green to deep green, shiny, oval or oblong, 4.5–8 × 2.5–4 cm, thinly leathery, when young thinly papery, and puberulent on midvein and near base, glabrescent, midvein impressed adaxially, lateral veins 7–9 pairs, raised abaxially, distinct adaxially, anastomosing near margin, reticulate veins evident abaxially, indistinct adaxially, base rounded, margin entire, apex obtuse-rounded or shortly deltoid-acuminate. Inflorescences: cymes of order 2–5, umbelliform,
AQUIFOLIACEAE

38. Ilex triflora Blume, Bijd. 1150. 1826–1827.

三花冬青 san hua dong qing

Shrubs or trees, evergreen, 2–10 m tall. Branchlets zigzag, subquadrangular, ridged, rarely subterete, densely pubescent; leaf scars subcircular, slightly raised; lenticels absent; terminal buds poorly or not developed. Petiole 3–5 mm, densely pubescent, narrowly winged by decurrent leaf base; leaf blade brown or olivaceous when dry, elliptic, oblong, ovate-elliptic, obovate, or oblong-elliptic, 2.5–10 × 1.5–4 cm, apiculate, adaxially puberulent or glabrescent, midvein impressed adaxially, densely pubescent on both surfaces, lateral veins 7–10 pairs, slightly distinct or indistinct on both surfaces, reticulate veins obscure, base rounded or obtuse, margin ± undulate, serrate, acute to acuminate, acumens 3–4 mm, or apex rounded. Inflorescences: cymes, fasciculate, axillary on current, second, or third year’s branchlets, pubescent; flowers white, 4-merous. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles 2 cm; pedicels 2–3 mm; bracteoles 2, basal; calyx patelliform, ca. 3 mm in diam., puberulent, deeply 4- or 5-lobed, lobes ovate, margin erose, ciliate; corolla rotate, petals 4, oblong, ca. 2 mm, basally slightly connate; stamens ca. as long as petals, anthers date-sagittate; ovary ovoid, ca. 1.5 mm in diam., stigma thickly discoid, shallowly 4-lobed. Fruit black, globose, 4–7 mm in diam.; pedicels 4–18 mm, puberulent; bracteoles 2, median or submedian, ovate; calyx as in male flowers; petals broadly ovate or suborbicular, basally slightly connate; staminodes ca. as long as petals, sterile anthers date-sagittate; ovary ovoid, ca. 1.5 mm in diam., stigma thickly discoid, shallowly 4-lobed. Fruit red, globose, 4–7 mm in diam.; pedicels 2–5 mm; bracteoles basal, deltoid; calyx as in male flowers; petals elliptic, ca. 2 mm; staminodes not seen; ovary ovoid, stigma capitate. Fruit red, globose, ca. 4 mm in diam.; persistent calyx as in male flowers; petals broadly ovate, basally slightly connate; stamens as long as petals, anthers yellow, ellipsoidal; rudimentary ovary globose, rostellate. Female inflorescences: cymes of order 2–4, 3–13-flowered; peduncles 1–1.4 cm; bracts basal, deltoid, densely puberulent; pedicels 2–5 mm; bracteoles basal, deltoid; calyx as in male flowers; petals elliptic, ca. 2 mm; staminodes not seen; ovary ovoid, stigma capitellate. Fruit red, globose, ca. 4 mm in diam.; persistent calyx as in male flowers; petals broadly ovate, basally slightly connate; stamens as long as petals, anthers yellow, ellipsoidal; rudimentary ovary pyramidal, rostellate, apex cleft. Female inflorescences: cymes of order 2–4, 8–23-flowered; peduncles 1–2 mm; bracts basal, deltoid, densely puberulent; flowers white–yellow, 4–6-merous. Male inflorescences: cymes of order 1–4, 8–23-flowered; peduncles 1–2 mm; bracts basal, deltoid, densely puberulent; flowers white, 4-merous. Male inflorescences: cymes of order 1–4, 8–23-flowered; peduncles 1–2 mm; bracts basal, deltoid, densely puberulent; flowers white, 4-merous. Male inflorescences: cymes of order 2–4, 8–23-flowered; peduncles 1–2 mm; bracts basal, deltoid, densely puberulent; flowers white–yellow, 4–6-merous. Male inflorescences: cymes of order 2–4, 8–23-flowered; peduncles 1–2 mm; bracts basal, deltoid, densely puberulent; flowers white–yellow, 4–6-merous.

38a. Ilex triflora var. triflora

三花冬青(原变种) san hua dong qing (yuan bian zhong)

38b. Ilex triflora var. kanehirai (Yamamoto) S. Y. Hu, J. Arnold Arbor. 30: 332. 1949 [‘kanehirai’].

钝头冬青 dun tou dong qing

Shrubs or small trees. Leaf blade elliptic, oblong, or ovate-elliptic, 2.5–10 × 1.5–4 cm, apex acute to acuminate, acumens 3–4 mm.


四川冬青 si chuan dong qing

Shrubs or small trees, evergreen, 1–10 m tall. Young branchlets subquadrangular, longitudinally angular and sulcate, puberulent or densely pubescent; older branchlets with raised, lunate leaf scars, lenticels absent; terminal buds conical, pubescent. Stipules persistent, ovate-deltoid, 1–2.5 mm, apically acute; petiole (2–)4–7 mm, adaxially shallowly sulcate, pubescent; leaf blade olivaceous when dry, ovate, ovate-lanceolate, ovate-elliptic, oblong-oblong, or elliptic, rarely sublanceolate, (2–)3–4 × (1–)2–4 cm, leathery, abaxially opaque yellow-brown punctate, glabrous to densely pubescent, midvein adaxi-
ally flat or slightly impressed, densely pubescent, lateral veins 6 or 7 pairs, evident or not on both surfaces, reticulate veins indistinct, base cuneate to obtuse, margin serrate, rarely minutely crenate on distal half, apex acuminate or shortly acuminate to acute. Inflorescences: cymes, solitary, axillary at scales on current year’s branchlets, rarely fasciculate; flowers white or pink, 4- or 5-merous. Male inflorescences: cymes of order 1-3, 1-7-flowered; peduncles 4-12 mm; bract 1, basal, deltoid; pedicels 2-3 mm, 1-flowered pedicels 3-5 mm, bracteoles 2, basal or submedian; calyx patelliform, 2-2.5 mm in diam., glabrous or sparsely puberulent, 4-7-lobed, lobes ovate-deltoïd, margin erose or dentate, sparsely ciliate; corolla rotate, petals 4 or 5, ovate, ca. 2.5 × 2 mm, basally slightly connate; stamens shorter than petals, anthers ovoid-oblong; rudimentary ovary compressed globose, rostellate. Female inflorescences: 1-flowered cymes; pedicels 8-10 mm, bracteoles 2, median; flowers 4-merous; calyx patelliform, ca. 3 mm in diam., shallowly 4-lobed, lobes orbicular, margin erose; corolla erect, petals in 4 mm in diam., ovate, ca. 2.5 mm, basally slightly connate; staminodes ca. 1/5 as long as petals, sterile anthers sagittate; ovary subglobose, ca. 1.5 mm in diam., stigma thickly discoid, convex. Fruit black, rarely yellow, globose or depressed globose, (5–)6 mm, (5–)7–8 mm in diam.; persistent calyx ex-convex. Fruit black, rarely yellow, globose or depressed globose, ca. 2.5 × 2 mm, basally slightly connate; stamens shorter than petals, anthers ovoid-oblong; rudimentary ovary compressed globose, rostellate. Female inflorescences: 1-flowered cymes; pedicels 8–10 mm, bracteoles 2, median; flowers 4-merous; calyx patelliform, ca. 3 mm in diam., shallowly 4-lobed, lobes orbicular, margin erose; corolla erect, petals in 4 mm in diam., ovate, ca. 2.5 mm, basally slightly connate; staminodes ca. 1/5 as long as petals, sterile anthers sagittate; ovary subglobose, ca. 1.5 mm in diam., stigma thickly discoid, convex. Fruit black, rarely yellow, globose or depressed globose, (5–)6 mm, (5–)7–8 mm in diam.; persistent calyx ex-convex. Fruit black, rarely yellow, globose or depressed globose, ca. 2.5 × 2 mm, basally slightly connate; stamens shorter than petals, stamens ovoid-oblong; rudimentary ovary compressed globose, rostellate. 39a. Ilex szechwanensis var. mollissima C. Y. Wu, Bull. Bot. Res., Harbin 5(1): 6. 1985.

39a. Ilex szechwanensis var. mollissima


39a. Ilex szechwanensis var. mollissima

四川冬青 (原变种)  si chuan dong qing (yuan bian zhong)

Ilex crenata Thunberg var. sciarium W. W. Smith; I. szechwanensis f. angustata Looser, I. szechwanensis f. calva Looser, I. szechwanensis var. heterophylla C. Y. Wu ex Y. R. Li; I. szechwanensis f. puberula Looser, I. szechwanensis var. sciarium (W. W. Smith) C. Y. Wu.

Branchlets puberulent. Leaf blade ovate-elliptic, ovate-oblong, or elliptic, rarely sublanateolate, 3–8 × 2–4 cm, midvein abaxially glabrous or puberulent. Flowers white. Fruit globose or depressed globose, ca. 6 mm, 7–8 mm in diam.; pyrenes oblong or subglobose, 4.5–5 mm, 3.5–4 mm in diam. Fl. May–Jun, fr. Aug–Oct.

39b. Ilex szechwanensis var. huana

Evergreen broad-leaved forests, sparse forests, thicket, shrub forests, stream banks, roadsides on hills or mountains; (200–)400–2500 m. Chongqing, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, SE Xizang (Zayu), Yunnan.

39c. Ilex szechwanensis var. mollissima

I. szechwanensis

Branchlets densely pubescent. Leaf blade ovate or ovate-lanceolate, 2–5 × 1.5–2.5 cm, midvein abaxially densely pubescent, apex acuminate. Flowers white.

41. Ilex yuana S. Y. Hu, J. Arnold Arbor. 32: 396. 1951 [“yuiana”].

独龙冬青 du long dong qing

Shrubs evergreen. Branchlets slender, pubescent; current year’s branchlets ca. 0.5 mm in diam. Stipules persistent, deltoid, ca. 0.5 mm, apex acute; petiole ca. 2 mm, pilose; leaf blade olivaceous when dry, broadly elliptic, 5–12 × 4–9 mm, leathery, pubescent, abaxially glandular punctate, midvein obscure adaxially, lateral veins 3 pairs, obscure, base obtuse or rounded, apex obtuse or acute. Male inflorescences: cymes of order 1 or 2, 3-flowered, subfasciculate; axillary; peduncles 3–4 mm; pedicels 1.5–4 mm, sparsely puberulent; petals white, 4-merous; calyx patelliform, ca. 2 mm in diam., sparsely pubescent, 4-lobed, lobes deltoid, margin erose, ciliate; corolla rotate, petals ca. 4 mm in diam., ovate, ca. 1.5 mm, basally slightly connate; stamens slightly longer than petals; rudimentary ovary subglobose. Female flowers and fruit not known. Fl. Jun–Jul, fr. unknown.

Evergreen broad-leaved forests, sparse forests, thicket, shrub forests, stream banks, roadsides on hills or mountains; (200–)400–2500 m. Chongqing, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, SE Xizang (Zayu), Yunnan.

39b. Ilex szechwanensis var. huana

I. szechwanensis

Branchlets puberulent. Leaf blade ovate-elliptic, ovate-oblong, or elliptic, rarely sublanateolate, 3–8 × 2–4 cm, midvein abaxially glabrous or puberulent. Flowers white. Fruit globose or depressed globose, ca. 6 mm, 7–8 mm in diam.; pyrenes oblong or subglobose, 4.5–5 mm, 3.5–4 mm in diam. Fl. May–Jun, fr. Aug–Oct.
acute, cuspidate. Male flowers not known. Female inflorescences: cymes of order 1 or 2, 1–3-flowered, solitary, axillary on current year’s branchlets; peduncles 7–8 mm; pedicels 1–2 mm; 1-flowered pedicels 7–9 mm, sparsely puberulent, subapically with 2 subulate bracteoles; flowers yellow-green; calyx 4-lobed, lobes broadly ovate, 1–1.5 mm, margin erose; petals 4, suborbicular, ca. 2.5 mm, basally slightly connate, apex obtusely rounded; staminodes 4, shorter than petals, sterile anthers ovoid-sagittate; ovary subglobose, ca. 1 mm in diam., stigma conspicuously 4-lobed. Fruit black, globose, 5–6 mm in diam.; fruiting pedicel 4–6 mm; persistent calyx explanate, ca. 3 mm in diam.; persistent stigma diskoid, 4-lobed. Female flowers: ovary ovoid, ca. 2 mm, style sometimes distinct, stigma discoid, 4-lobed. Fruit black, globose, 6–8 mm in diam.; fruiting pedicel 4–6 mm; persistent calyx explanate, ca. 3 mm in diam.; persistent stigma thickly diskoid, ca. 1 mm in diam., conspicuously 4-lobed; pyrenes 4, oblong-ellipsoidal, ca. 5 mm, 3–3.5 mm in diam., abaxially smooth, not sulcate, endocarp leathery. Fl. May–Jun, fr. Aug–Oct.

Evergreen broad-leaved forests, forest margins, thickets, roadsides in valleys; 1400–2300 m. NW and SW Yunnan (Dulong Jiang valley, Tengchong).

42. Ilex crenata Thunberg in Murray, Syst. Veg., ed. 14, 168. 1784.

齒叶冬青  chi ye dong qing


Shrubs evergreen, 5–10 m tall; bark gray-black. Young branchlets gray or black, longitudinally angular, densely pubescent; older branchlets with leaf scars raised lenticels, lenticels sparsely elliptic or circular. Stipules subulate, minute; petiole 2–3 mm, sulcate, pubescent; leaf blade abaxially greenish, adaxially green, shiny, obovate, elliptic, or oblong-elliptic, 1.35 × 0.5–1.5 cm, leathery, abaxially glabrous, densely brown glandular punctate, adaxially glabrous except on midvein, rugose when dry, midvein adaxially flat or slightly impressed, pubescent, lateral veins 3–5 pairs, obscure, reticulate veins indistinct, base obtuse or cuneate, margin crenate-serrate, apex rounded, obtuse, or subacute. Male inflorescences: cymes of order 1–3, 1–7-flowered, solitary, axillary on scales or lower leaves of current year’s branchlets, rarely pseudoasclepiad on second year’s branchlets; peduncles 4–9 mm; secondary axis ca. 1 mm; pedicels 2–3 mm, bracteoles 1 or 2, subbasal; 1-flowered pedicels 4–8 mm, bracteoles 1 or 2, submedian; flowers white, 4-merous; calyx patelliform, ca. 2 mm in diam., glabrous, 4-lobed, lobes broadly deltoid, margin erose; petals 4, broadly elliptic, ca. 2 mm, basally slightly connate; stamens shorter than petals, anthers elliptic; rudimentary ovary conical, apex slightly apiculate or acute. Female inflorescences: cymes of order 1(or 2), 1–3-flowered, solitary, axillary on current year’s branchlets; pedicels 3.5–6(–12) mm, distal half slightly thickened, longitudinally ridged; bracteoles 1 or 2, submedian; flowers 4-merous; calyx ca. 3 mm in diam., 4-lobed, lobes rounded; corolla ca. 6 mm in diam., petals ovate, ca. 3 mm, basally slightly connate; staminodes ca. 1/2 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 2 mm, style sometimes distinct, stigma disoid, 4-lobed. Fruit black, globose, 6–8 mm in diam.; fruiting pedicel 4–6 mm; persistent calyx explanate, ca. 3 mm in diam.; persistent stigma thickly diskoid, ca. 1 mm in diam., conspicuously 4-lobed; pyrenes 4, oblong-ellipsoidal, ca. 5 mm, 3–3.5 mm in diam., abaxially smooth, striate, not sulcate, endocarp leathery. Fl. May–Jun, fr. Aug–Oct.

Shrubs or small trees, evergreen, 1–5 m tall. Young branchlets subquadrangular, longitudinally angular and sulcate, pubescent along groove, glabrous along angles; older branchlets suberete, with ridges and oblong or elliptic lenticels; terminal buds conical, glabrous, apically acute. Petiole 4–6 mm, shallowly sulcate, abaxially rugose, adaxially puberulent or glabrous, narrowly winged by decurrent leaf base; leaf blade abaxially greenish, adaxially green, shiny, obovate, obovate-elliptic, or broadly elliptic, 2.5–7 × 1.5–3 cm, leathery, abaxially conspicuously dark punctate, midvein deeply sulcate and sparsely pubescent adaxially, lateral veins 5–8 pairs, distinct on both surfaces, reticulate veins obscure abaxially, slightly raised adaxially, base obtuse or cuneate, margin slightly recurved, crenate-serrate, apex obtuse, acute, or shortly acuminate. Male inflorescences: cymes of order 1–3, 1–5-flowered, solitary, axillary on scales or lower leaves of current year’s branchlets, or fasciculate on second year’s branchlets; peduncles 3–5 mm; pedicels ca. 2 mm; bracteoles 1 or 2, basal or submedian, subulate; flowers white, 4-merous; calyx patelliform, 2–3 mm in diam., lobes broadly deltoid, margin erose, not ciliate; corolla rotate, ca. 7 mm in diam., petals obovate or orbicular, ca. 2.5 mm, basally slightly connate; stamens 4, ca. 2/3 as long as petals, anthers oblong; rudimentary ovary narrowly conical, rostellate. Female inflorescences: 1-flowered cymes, solitary, axillary on current year’s branchlets; pedicels 1–1.5 cm, glabrous, gradually enlarged toward distal half; bracteoles 2, median, subulate; calyx 4–5 mm in diam., glabrous, 4-lobed, lobes suborbicular; petals 4, ovate, ca. 2.5 mm, basally slightly connate; staminodes ca. 1/3 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 2 mm in diam., stigmatic diskoid, convex. Fruit black, globose or slightly depressed globose, 9–11 mm in diam.; fruiting pedicel 1–1.7 cm; persistent calyx explanate, ca. 5 mm in diam.; persistent stigma
discoid-mammilliform, 1.5–2 mm in diam.; pyrenes 4, ellipsoid-al, cross section trigonous, 4–6 mm, 3–5 mm in diam., abaxially convex, striate, slightly rugose, laterally smooth, endocarp leathery. Fl. Apr–May, fr. Oct.

- Understories of evergreen broad-leaved forests, sparse forests and thickets on mountains; 300–1700(–2100) m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Zhejiang.


倒卵叶冬青 dao luan ye dong qing

_Ilex ililongshanensis_ H. E. Chiang.

Trees evergreen, small, 2.5–3 m tall; trunk to 4 cm d.b.h.

Young branchlets subquadrangular, longitudinally angular and sulcate, puberulent; older branchlets gray-brown, terete, longitudinally ridged, puberulent, lenticels absent, leaf scars raised. Stipules lanceolate, minute; petiole 5–10 mm, obliquely sulcate, slightly puberulent, narrowly winged by decurrent leaf base; leaf blade adaxially shiny, obovate, elliptic, or broadly elliptic, 2–6 × 1.2–2.5 cm, leathery, abaxially brown glandular punctate, adaxially glabrous except on midvein, midvein adaxially impressed, puberulent, lateral veins slightly evident or indistinct on both surfaces, base cuneate, margin crenate-serrate, apex obtuse or acute, rarely rounded. Male inflorescences: cymes of order 1 or 2, 1–3-flowered, fasiculate, axillary on current year’s branchlets; peduncles 5–11 mm; terminal bracts 2; pedicels 1.5–2 mm, puberulent; bracteoles basal, ovate; calyx patelliform, deeply 4-lobed, lobes broadly ovate, ca. 1.5 cm, apex rounded; corolla white, rotate, petals 4, ovate, ca. 3 × 2 mm, basally slightly connate; stamens shorter than petals, anthers ovoid; rudimentary ovary ovoid. Female inflorescences: cymes of order 1 (or 2), 1–3-flowered, solitary, axillary on current year’s branchlets. Fruit globose, 7–8 mm in diam., fruiting pedicle 8–12 mm, longitudinally angular, puberulent; bracteoles 2, median, subulate; persistent calyx expanlate, quadrangular, ca. 4 mm in diam., deeply 4-lobed, lobes suborbicular, margin slightly erose; persistent stigma thinly discoid, ca. 2 mm in diam.; pyrenes 4, ovoid-ellipsoid, ca. 5 mm, ca. 4 mm in diam., abaxially smooth, 5-striate, not sulcate, not rugose, endocarp leathery. Fl. Apr, fr. Aug–Nov.

Evergreen broad-leaved forests on mountains; 100–400 m. Taiwan (Pingdong, Taizong) [Japan].


具柄冬青 ju bing dong qing

_Ilex impressiaveng_ Yamamoto; _I. morii_ Yamamoto; _I. pedunculosa_ f. aurantiaca (Koidzumi) Ohwi; _I. pedunculosa_ var. aurantiaca Koidzumi; _I. pedunculosa_ f. continentalis Loesener; _I. pedunculosa_ var. continentalis (Loesener) Bean; _I. purpurea_ Hasskarl var. leveilleana Loesener.

Shrubs or trees, evergreen, 2–10(–15) m tall. Young branchlets brownish or castaneous, subterete, longitudinally angular, glabrous or minutely puberulent on nodes. Petiole 1.5–2.5 cm, slender, abaxially rugose, adaxially longitudinally sulcate; leaf blade adaxially castaneous-black, shiny when dry, ovate, oblong-elliptic, or elliptic, 4–12.5 × 2–3 cm, thinly leathery, both surfaces glabrous, midvein flat or slightly impressed adaxially, lateral veins obscure on both surfaces, base obtuse or rounded, margin entire or often obscurely serrate near apex, apex acuminate. Inflorescences: cymes solitary, axillary on current year’s branchlets; flowers 4- or 5-merous, white or yellow-white. Male inflorescences: cymes of order 2 or 3, 3–9-flowered; peduncles ca. 2.5 cm; secondary axis ca. 3 mm; pedicels 2–4 mm; bracteoles lanceolate, 1–1.5 mm, puberulent; calyx patelliform, ca. 1.5 mm in diam., 4- or 5-lobed, lobes deltoid, glabrous, apex acute; petals 4 or 5, ovate, 1.5–1.8 mm, basally slightly connate; stamens shorter than petals, anthers ovoid; rudimentary ovary ovoid. Female inflorescences: cymes of order 1 (or 2), 1–3-flowered; pedicels thinly elongated, 4–4.5 cm; bracteoles 2, median, subulate; calyx ca. 3 mm in diam., 4- or 5-lobed, lobes ciliate; corolla ca. 5 mm in diam., petals 4 or 5, ovate, ca. 2 cm; staminodes shorter than petals, sterile anthers ovoid; ovary broadly conical, ca. 2 mm in diam., stigma mammilliform. Fruit red or orange, globose, 7–8 mm in diam.; fruiting pedicel of 1-fruited cymes 2.5–4(–6) cm; peduncles of 1–3-fruited cymes ca. 4.5 cm, fruiting pedicels 1.5–2 cm; lobes of persistent calyx deltoid, ciliate; persistent stigma thickly discoid, convex; pyrenes 4–6, ellipsoidal, ca. 6 mm, ca. 2.5 mm in diam., abaxially smooth, longitudinally 1-striate, endocarp leathery. Fl. May–Jun, fr. Jul–Nov. 2n = 120*.

Broad-leaved woods, thickets, margins of woods on mountains; (900–)1200–1900(–3000) m. S Anhui, Fujian, Guangxi, Guizhou, S Henan, Hubei, Hunan, Jiangxi, S Shaanxi, Sichuan, C and W Taiwan, Zhejiang [Japan].


网脉冬青 wang mai dong qing

Shrubs evergreen, ca. 2 m tall, glabrous. Young branchlets brownish, striate; older branchlets terete, longitudinally fissured, lenticels sparse, elliptical; terminal buds ovoid. Petiole 4–5 mm; leaf blade dark brown adaxially, elliptic, 5.5–7 × 3–3.3 cm, thinly leathery, adaxially glabrous except on midvein when dry, midvein adaxially flat or proximal half raised and distal half gradually flat or impressed, lateral veins 6 or 7 pairs, reticulate veins often slightly raised, slightly evident abaxially, distinct adaxially, base cuneate-obtuse, margin sparsely serrate, apex acute or shortly acuminate. Flowers not known. Inflorescences: 1-fruited cymes, solitary, axillary; fruiting pedicels ca. 7 mm; bracteoles deltoid, adnate at middle. Fruit red, globose, ca. 5 mm in diam.; persistent calyx glabrous, 5-lobed, lobes discoid, ciliate; persistent stigma mammilliform, shallowly 4-lobed. Fl. unknown, fr. Dec.

- Woods or thickets on slopes; 700–1500 m. Guangxi (Yangshuo).


薄革叶冬青 bao ge ye dong qing

Shrubs evergreen, 2–3 m tall. Branchlets longitudinally angular and sulcate, densely pubescent. Petiole 2.5–5 mm, sulcate, pubescent; leaf blade abaxially greenish, adaxially deep green,
elliptic or ovate-elliptic, 3–3.5 × 2–3 cm, subleathery, abaxially pubescent, adaxially sparsely pubescent or glabrescent, midvein subflat or slightly impressed adaxially, densely pubescent on both surfaces, lateral veins 8–12 pairs, slightly raised on both surfaces, reticulate veins obscure on both surfaces or distinct abaxially, base broadly cuneate or subrounded, margin serrate, teeth black, apex acuminate or caudate-acuminate. Fruit (immature) globose, 4–5 mm in diam.; known. Infructescences: 1-fruited cymes, solitary, axillary on current year’s branchlets; fruiting pedicels 8–12 mm; bracteoles 2, caducous. Fruit (immature) globose, 4–5 mm in diam.; persistent calyx 4- or 5-lobed, pubescent, lobes deltoid, ciliate; persistent stigma mammilliform; pyrenes 4, oblong, 3.3–5.5 mm, 2–2.5 mm in diam., abaxially smooth, not striate, not sulcate. Fl. unknown, fr. Jul.

**Ilex rockii**


高山冬青

**Ilex sugerokii**


Mountain forests; 900–2000 m. W Sichuan (Butuo, Jinyang).


*Shrubs or trees, evergreen, 1–12 m tall. Young branchlets terete, longitudinally ridged and sulcate, densely golden yellow villous; older branchlets densely ferruginous tomentose, with subcircular, raised leaf scars, lenticels absent. Petiole 2–6 mm,*

**Ilex sugerok**


太平山冬青 tai ping shan dong qing

**Ilex pedunculosa** Miquel var. taiwanensis S. Y. Hu; *I. sugerokii* subsp. brevipedunculata (Maximowicz) Makino; *I. sugerokii* var. brevipedunculata (Maximowicz) S. Y. Hu; *I. taisanensis* Hayata; *I. taiwanensis* (S. Y. Hu) H. L. Li.

Shrubs or small trees, evergreen, ca. 5 m tall. Young branchlets longitudinally angular and sulcate, puberulent; old branchlets glabrescent, with suborbicular, convex leaf scars and elliptic lenticels. Petiole 4–7 mm, flat adaxially, puberulent; leaf blade abaxially greenish, adaxially green, elliptic or ovate-elliptic, 2–3.5 × 1–2.5 cm, thickly leathery, abaxially glabrous, adaxially glabrous except on midvein, midvein flat abaxially, raised adaxially, lateral veins 4 or 5 pairs, obscure on both surfaces, base obtuse or broadly cuneate, margin entire in lower half, sparsely serrate in upper half, apex obtuse or acute. Inflorescences: cymes, solitary, axillary on current year’s branchlets. Male inflorescences: cymes of order 2, 3-flowered; peduncles ca. 1 cm; pedicels 2–5 mm; bracteoles 1, adnate apically on pedicels, puberulent; calyx patelliform, ca. 2.5 mm in diam., deeply 4–6-lobed, lobes deltoid, long ciliate; corolla white, rotate, 5–6 mm in diam., petals oblong, slightly connate; staminodes shorter than petals; rudimentary ovary ovoid, rostellate. Female inflorescences: 1-flowered cymes; pedicels 1.2–1.5 cm; bracteoles 1 or 2, submedian; calyx deeply 4–6-lobed, lobes long ciliate; petals oblong; staminodes ca. 3/4 as long as petals, sterile anthers oblong-sagittate; ovary ovoid, stigma discoid. Fruit dark red, globose, 7–8 mm in diam.; fruiting pedicel 1.3–1.5 cm, glabrous; persistent calyx explanate, ca. 3 mm in diam., ciliate; persistent stigma discoid; pyrenes 4–6, oblong, ca. 3.5 mm, ca. 2 mm in diam., abaxially smooth, not striate, not sulcate, endocarp leathery. Fl. Jul, fr. Aug–Oct.

Mountain forests; ca. 2200 m. Sichuan, C and N Taiwan [Japan].

48. *Ilex sugerok* f. longipedunculata Maximowicz, with longer peduncles (2–3.5 cm), occurs in Japan.


鲁甸冬青 lu dian dong qing

Shrubs evergreen, 1.5–3 m tall. Branchlets stout, longitudinally ridged, densely tomentose; terminal buds conical, 4–5 mm, bud scales densely tomentose. Petiole 3–5 mm, densely tomentose; leaf blade abaxially greenish, adaxially green, ovate, or ovate-elliptic, 2.5–4.5 × 1.5–2.5 cm, leathery, abaxially densely tomentose, adaxially very shortly tomentose, midvein slightly flat or impressed adaxially, tomentose on both surfaces, lateral veins 7 or 8 pairs, slightly raised abaxially, flat adaxially, reticulate veins obscure adaxially, base rounded, rarely obtuse, margin crenulate-serrate, teeth incurved, black, apex shortly acuminate. Flowers not known. Inflorescences: 1-flowered cymes, solitary, axillary on current year’s branchlets; fruiting pedicels 1.2–1.5 cm, densely tomentose, nodose at middle. Fruit red, globose, 7–8 mm in diam.; persistent calyx explanate, pentangular, ca. 4 mm in diam., tomentose, shallowly 5-lobed, lobes obtusely triangular, ciliate; persistent stigma thickly discoid; pyrenes 5, ellipsoidal, ca. 5 mm, 2.5–3 mm in diam., cross section trigonous, abaxially smooth, not striate, not sulcate, endocarp leathery. Fl. Aug–Nov.

● Shrub forests on limestone mountains; ca. 1400 m. NE Yunnan (Ludian).


云南冬青 yun nan dong qing

Shrubs or trees, evergreen, 1–12 m tall. Young branchlets terete, longitudinally ridged and sulcate, densely golden yellow villous; older branchlets densely ferruginous tomentose, with subcircular, raised leaf scars, lenticels absent. Petiole 2–6 mm,
leaf blade thickly leathery, apex acute and spiny, margin entire or 1–3-spinulose-serrate.  
1b. Leaf blade thinly leathery to leathery, margin crenulate-serrate or crenulate-serrate.  
2a. Margin of leaf blade crenulate-serrate, teeth not aristate.  
2b. Margin of leaf blade crenulate-serrate, teeth often aristate.  
3a. Leaf blade ovate or ovate-lanceolate, rarely elliptic, 1–4 × 0.4–2 cm, apex acute, mucronate.  
3b. Leaf blade oblong-lanceolate, elliptic, or oblong, 1.2–2 × 0.5–0.7 cm, apex acute to acuminate.  

51a. *Ilex yunnanensis* var. *yunnanensis*  
云南冬青(原变种)  yun nan dong qing (yuan bian zhong)  

*Ilex yunnanensis* var. *brevipedunculata* S. Y. Hu; *I. yunnanensis* var. *eciliata* S. Y. Hu.  

Leaf blade ovate or ovate-lanceolate, 1–4 × 0.4–2 cm, thinly leathery to leathery, margin crenulate-serrate, teeth often aristate, apex acute, mucronate. Flowers 4-merous. Fl. May–Jun, fr. Aug–Nov.

神农架冬青  shen nong jia dong qing

Trees evergreen, ca. 10 m tall, ca. 25 cm d.b.h.; bark gray-white, shiny. Young branchlets reddish brown, smooth, very sparsely puberulent, glabrescent; older branchlets grayish brown, shiny, terete, 3–4 mm in diam., glabrous; terminal buds shortly stalked, ovoid or ellipsoid, 3–4 mm, glabrous or sparsely puberulent, apically acute. Stipules subulate, minute, ca. 0.5 mm, glabrous; petiole 2.5–3(–4) mm, sparsely puberulent, deeply sulcate adaxially; leaf blade adaxially deep green, shiny, elliptic-ovate, 2.5–4(–5) × (1–)1.5–2.5(–3) cm, thickly leathery, adaxially glabrous, midvein flat or sometimes impressed adaxially, base shortly attenuate or truncate to briefly cuneate, margin crenulate-serrate in upper part, apex acute to slightly obtuse, mucronate. Flowers not known. Infructescences: cymes, solitary, axillary on current year’s branchlets; peduncles erect; fruiting pedicels 5.5–12 mm, stout, glabrous; bracteoles 2, ovate, 1–1.5 mm, glabrous. Fruit red, depressed globose, 8–12 mm in diam., pedicels 5.5–12 mm, stout, glabrous; bracteoles 2, ovate, 1–1.5 mm, glabrous. Fruit brown, ellipsoid-subglobose, 3–4 mm in diam., ca. 2 mm; rudimentary ovary subglobose, apex obtuse or rounded, indistinctly 4-lobed. Female inflorescences: 1-flowered cymes; pedicels 7–9 mm, glabrous; bracteoles 2, basal, broadly triangular; calyx and corolla as in male flowers; staminodes ca. 4/5 as long as petals, sterile anthers ovoid-sagittate; ovoid oblong-ovoid, 3–4 mm, ca. 2 mm in diam., stigma discoid, 4-lobed. Fruit red, globose, 8–10 mm in diam.; fruiting pedicel 1.3–1.4 cm; persistent calyx quadrangular; persistent stigma discoid, distinctly 4-lobed; pyrenes 4, obovoidal or ellipsoidal, 7–8 mm, ca. 5 mm in diam., rugose and rugose-pitted throughout, abaxially longitudinally 1-sulcate, endocarp bony. Fl. Apr–May, fr. Aug–Dec. $2n = 38^*$.

Shrubby areas, sparse forests, hillsides, stream sides, road sides, near villages; 100–1900 m. Anhui, Beijing, Fujian, Guangdong, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shandong, Tianjin, Zhejiang [Korea].


细刺枸骨  xi ci gou gu

Trees evergreen, to 10 m tall. Branchlets castaneous, straight, glabrescent or glabrous; terminal buds conical, slender, glabrous, apically acute, with ciliate bud scales. Leaves on first and second year’s branchlets; stipules deltoid, minute, ca. 1 mm, acutely pubescent; petiole 8–14 mm, abaxially rugose, adaxially sulcate and minutely pubescent or glabrous; leaf blade abaxially greenish, adaxially green, elliptic, oblong-elliptic, lanceolate, oblanceolate, or obovate-lanceolate, 6–12.5 × (1.8–)2.4–4.5 cm, thinly to thickly leathery, midvein adaxially impressed, pilose, glabrescent, or glabrous, lateral veins 9 pairs, raised and prominent abaxially, obscurely impressed adaxially, branched and anastomosing near margin, reticulate veins rather obscure abaxially, evident adaxially, base obtuse or acute, rarely cuneate, margin coarsely and sharply serrate, sometimes teeth ending in weak spines, apex shortly acuminate. Infructescences: cymes, fasciculate, axillary on second year’s branchlets. Male inflorescences: cymes of order 2, 3-flowered, sparsely pubescent; peduncles ca. 1 mm; bracts deltoid, glabrous and ciliate, apex acute; pedicel ca. 3 mm; bracteoles 2, basal, ciliate; flowers 4-merous, yellowish; calyx ca. 1.8 mm in diam.; glabrous, lobes broadly deltoid, ca. 0.5 × 0.5–1 mm, ciliate; ovary subglobose, apex obtuse; corolla rotate, petals obovato-elliptic, 3.3–3.5 × ca. 1.8 mm, basally connate; stamens slightly longer than petals, anthers ovoid; rudimentary ovary subglobose. Female flowers not known. Infructescences: 1-fruited cymes, few fascicled; fruiting pedicels ca. 2 mm; bracteoles 2, subbasal. Fruit brown, ellipsoid-subglobose, 0.8–1.2 cm in diam., quite rugose when dry; persistent calyx exlanate, ca. 3 mm in diam.; persistent stigma prominent, thickly discoid or nearly mammilliform; pyrenes 4, obovoidal or oblong, trigonous in cross section, apical end obliquely retuse, 7–9 mm, 3–4 mm in diam., abaxially irregularly rugose and pitted, with a median longitudinal ridge, endocarp bony. Fl. Mar–May, fr. Jul–Nov.

● Forests, hills; 300–1800 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Zhejiang.

1a. Leaf blade thinly leathery, elliptic or oblong-elliptic, midvein adaxially

---


枸骨  gou gu

*Ilex burfordii* S. R. Howell; *I. cornuta* var. *burfordii* (De France) Rehd; *I. cornuta* var. *burfordii* De France; *I. cornuta* var. *fortunei* (Lindley) S. Y. Hu; *I. cornuta* f. *gaetana* Loesener; *I. fortunei* Lindley; *I. forrcata* Lindley ex Göppert; *I. reevesiana* Fortune.

Shrubs or small trees, evergreen, (0.6–)1–4 m tall. Young branchlets longitudinally ridged and sulcate, puberulent or glabrescent along groove; older branchlets gray-white, subterete, longitudinally minutely fissured, leaf scars raised, lenticels absent. Petiole 4–8 mm, adaxially narrowly sulcate and puberulent; leaf blade abaxially greenish, adaxially deep green, shiny, quadrangular-oblong, rarely ovate, 4–9 × 2–4 cm, thickly leathery, both surfaces glabrous, midvein impressed adaxially, laterally veins 5 or 6 pairs, anastomosing near margin, evident abaxially, obscurely impressed adaxially, base rounded or subtruncate, margin with 1 or 2 spines per side, sometimes entire, apex with 1 strong spine often reflexed. Infructescences: cymes, fasciculate, axillary on second year’s branchlets; persistent scales suborbicular, pubescent and ciliate; bracts ovate, pubescent, ciliate, apex obtuse or mucronate; flowers yellowish, 4-merous. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; pedicels 5–6 mm, glabrous; bracteoles basal, broadly deltoid; calyx discoid, ca. 2.5 mm in diam., lobes broadly deltoid, ca. 0.7 × 1.5 mm, membranaceous, sparsely puberulent, ciliate; corolla rotate, ca. 7 mm in diam., petals reflexed, oblong-ovate, 3–4 mm, basally connate; stamens ca. as long as or slightly longer than petals, anthers oblong-oval, ca. 1 mm; rudimentary ovary subglobose, apex obtuse or rounded, indistinctly 4-lobed. Female inflorescences: 1-flowered cymes; pedicels 7–9 mm, glabrous; bracteoles 2, basal, broadly triangular; calyx and corolla as in male flowers; staminodes ca. 4/5 as long as petals, sterile anthers ovoid-sagittate; ovoid oblong-ovoid, 3–4 mm, ca. 2 mm in diam., stigma discoid, 4-lobed. Fruit red, globose, 8–10 mm in diam.; fruiting pedicel 1.3–1.4 cm; persistent calyx quadrangular; persistent stigma discoid, distinctly 4-lobed; pyrenes 4, obovoidal or ellipsoidal, 7–8 mm, ca. 5 mm in diam., rugose and rugose-pitted throughout, abaxially longitudinally 1-sulcate, endocarp bony. Fl. Apr–May, fr. Aug–Dec. $2n = 38^*$.
sparsely puberulent or glabrescent .... 55a. var. hylonoma

1b. Leaf blade leathery or thickly leathery, lanceolate, oblanceolate, ovate-lanceolate, or elliptic, midvein adaxially sparsely puberulent or glabrescent. Fruit ellipsoid-subglobose, 1–1.2 cm in diam.; pyrenes obvoid. Fl. Mar–May, fr. Oct–Nov.

- Forests on hills; 700–1800 m. Guizhou, Sichuan.

55a. Ilex hylonoma var. hylonoma

细刺枸骨(原变种) xi ci gou gu (yuan bian zhong)

Branchlets glabrous or glabrescent. Leaf blade elliptic or oblong-elliptic, 6–12.5 × 2.4–4.5 cm, thinly leathery, midvein adaxially sparsely puberulent or glabrescent. Fruit ellipsoid-subglobose, 1–1.2 cm in diam.; pyrenes oblong, trigonous. Fl. unknown, fr. Jul.

- Forests; hills ca. 300 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Zhejiang.


光叶细刺枸骨 guang ye xi ci gou gu

Branchlets, terminal buds, petiole, midvein, and fruiting pedicels glabrous. Leaf blade lanceolate, oblanceolate, ovate-lanceolate, or elliptic, 6–10 × 1.8–4.2 cm, leathery or thickly leathery. Fruit ellipsoid or subglobose, 8–10 mm in diam.; pyrenes oblong, trigonous. Fl. unknown, fr. Jul.

- Forests, hills; ca. 300 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Zhejiang.


华中冬青 huazhong dongqing

Ilex aquifolium Linnaeus var. chinensis Loesener; I. dipyrena Wallich f. leptacantha (Lindley & Paxton) Loesener; I. dipyrena var. leptacantha (Lindley & Paxton) Loesener; I. huoshanensis Y. H. He; I. leptacantha Lindley & Paxton.

Shrubs evergreen, 1.5–3 m tall. Branchlets brown or gray-brown, slender, longitudinally ridged and sulcate, puberulent or glabrescent, lenticels absent; terminal buds conical, thin, puberulent or glabrescent, apically acute, with ciliate bud scales. Petiole 5–8 mm, abaxially rugose, adaxially shallowly sulcate, glabrous or sparsely puberulent; leaf blade abaxially greenish, adaxially dark green, shiny, elliptic-lanceolate, rarely ovate-elliptic, 4–9 × 1.5–2.8 cm, leathery, midvein adaxially shallowly impressed, puberulent near base, lateral veins 6–8 pairs, abaxially shallowly prominent or obscure, adaxially obscure, rarely evident, base broadly cuneate or subrounded, margin with 3–10 pairs of spinose teeth 2–4 mm, teeth apically yellow-brown or black, apex acuminate, spine. Inflorescences: 1-flowered cymes, solitary or fasciculate, axillary on second year’s branchlets. Male inflorescences: cymes fasciculate; bracts ovate-lanceolate, pubescent, ciliate; flowers 4-merous, yellow; pedicels 1–2 mm, puberulent; bracteoles 2, median, deltoid, ciliate; calyx patelliform, ca. 2.5 mm in diam., deeply lobed, lobes ovate or deltoid, puberulent and ciliate; corolla rotate, ca. 6 mm in diam., petals oblong, ca. 3 mm, basally shallowly connate, apex ciliate; stamens longer than petals, anthers oblong-ovoid; rudimentary ovary subglobose, apex rounded. Female flowers not known. Inflorescences: cymes, solitary or fasciculate, fascicles 2- or 3-fruited; fruiting pedicels ca. 2 mm, puberulent, with 2 subbasal, ciliate bracteoles. Fruit purplish red, globose, 6–7 mm in diam.; persistent calyx explanate, quadrangular, lobes ciliate; persistent stigma thinly discoid, 4-lobed; pyrenes 4, oblong-trigonal, ca. 6 mm, ca. 3 mm in diam., abaxially longitudinally 1-ridged, rugose and pitted throughout, endocarp stony. Fl. Mar–Apr, fr. Aug–Nov.

- Margins of woods, by small streams, shrubby areas at roadsides; 500–1000 m. Anhui (cultivated), Chongqing (Fengjie, Wushan), Hubei, Yunnan.


浙江冬青 zhejiang dongqing

Shrubs or small trees, evergreen, 2–4 m tall. Branches longitudinally angular, pubescent or glabrescent. Petiole 4–5 mm, puberulent; leaf blade green, ovate-elliptic or elliptic, rarely ovate, 3–6 × 1.5–3 cm, leathery, midvein abaxially glabrous, adaxially impressed, sulcate, densely puberulent, lateral veins 5–7 pairs, distinctly raised abaxially, slightly impressed adaxially, reticulate veins obscure on both surfaces, base rounded or obtuse, margin sparsely (2–)4–7-spinulose-serrate, teeth black, apex acute, rarely obtuse. Inflorescences: 1-flowered cymes, fasciculate, axillary. Male flowers 4-merous; calyx lobes deltoid-ovate, ciliate; petals oblong, basally connate; stamens 4, ca. 3 mm as long as petals. Female flowers not known. Inflorescences: fruiting pedicles 4–8 mm, puberulent or glabrescent; bracteoles 2, basal. Fruit red, subglobose, ca. 8 mm, 7–8 mm in diam.; persistent calyx patelliform, quadrangular, lobes broadly deltoid, ciliate; persistent stigma navel-shaped or discoid; pyrenes ovoid, ca. 4 mm, ca. 3 mm in diam., irregularly rugose and sulcate, endocarp woody. Fl. Apr, fr. Aug–Nov.

- Forest margins, shrub forests, hills; 500–1200 m. Zhejiang (Hangzhou, Jingning, Tiantai).


皱叶冬青zhou ye dongqing

Ilex georgei H. F. Comber var. rugosa H. F. Comber.

Shrubs prostrate, evergreen, 20–30 cm tall. Branchlets straight, stout, puberulent, with distinctly raised leaf scars; terminal buds ovoid, puberulent. Leaves on first to sixth year’s branches; petiole 1–2 mm, dorsiventrally flattened, glabrous or puberulent; leaf blade abaxially greenish, adaxially deep green, shiny, hexagonal-subrhombic, rarely elliptic, 1–3.2 × 0.7–1.5 cm, thickly leathery, abaxially smooth, adaxially rugose, both surfaces glabrous, midvein obscure abaxially, deeply impressed adaxially, lateral veins 3 or 4 pairs, obscure abaxially, deeply impressed adaxially, reticulate veins obscure abaxially, impressed adaxially, base obtuse, rarely rounded, margin subentire, sinuate, with 2 or 3 pairs of spines, apex broadly deltoid, acute, with 1 spine ca. 2 mm. Inflorescences: 1-flowered cymes, few fascicled, fascicles 2–4-flowered, axillary on second year’s branchlets, persistent bud scales basal, cartilaginous, rounded, glabrous; flowers 4-merous. Male inflorescences: bracts ovate, slightly puberulent, ciliate; pedicels 2–3 mm, glabrous; bracteoles 2, submedian, glabrous, or ciliate; flowers 4-merous; calyx patelliform, ca. 3 mm in diam., 4-lobed, lobes ovate, ca. 0.9
mm, glabrous or ciliate; corolla 4–5 mm in diam., petals ovate, ca. 1.5 mm, basally slightly connate; stamens equaling or slightly longer than petals, anthers ovoid-oblong, ca. 0.75 mm; rudimentary ovary pulvinate, obscurely lobed. Female flowers: calyx and corolla as in male flowers; staminodes shorter than petals, sterile anthers ovoid; ovary ovoid, 1.5–2 mm, stigma thickly discoid. Fruit red, ellipsoidal-globose, 6–7 mm in diam.; petiole 3–4 mm; persistent stigma discoid; pyrene 1, subglobose, slightly dorsiventrally flattened, ca. 5 mm in diam., abaxially palmately striate, not sulcate, adaxially canaliculate, endocarp woody. Fl. May–Jul, fr. Sep–Nov.

Broad-leaved forests, Abies forests, Picea forests, thickets, open rocky slopes; 2400–3800 m. SE Xizang, N Yunnan [NE India, N Myanmar].


武功山冬青 wu gong shan dong qing

Shrubs evergreen. Branchlets brown, terete, longitudinally ridged, puberulent or glabrescent, minutely tuberculate; terminal buds ovoid, pubescent. Petiole 3–9 mm, densely or sparsely puberulent, adaxially sulcate; leaf blade adaxially green, oblong-ovate, oblong-lanceolate, or narrowly ovate, rarely ovate, 4.5–6 × (1.5–)2–2.5(–3) cm, thinly leathery, glabrous, midvein adaxially slightly impressed, puberulent, lateral veins 4–6 pairs, impressed adaxially, reticulate veins obscure, base obtuse or subrounded, margin serrate with 2 or 3(or 4) pairs of teeth, teeth each tipped with a weak spine, apex angular with a spine. Male inflorescences: 1-flowered cymes, fasciculate, axillary; pedicel ca. 1.5 mm, puberulent; flowers 4-merous; calyx discoid (patelliform), glabrous, 4-lobed, lobes deltoid-ovate, ciliate; petals 4, obovate-oblong, ca. 4 mm, not ciliate, basally slightly connate; stamens ca. 3/4 as long as petals; rudimentary ovary ovoid, apex indistinctly 2-lobed. Female flowers not known. Fruit red, globose, 5–5.5 mm in diam., minutely tuberculate (under magnifying lens); persistent calyx quadrangular, ca. 2 mm in diam., 4-lobed, lobes deltoid-ovate, ciliate; persistent stigma mamiliform, nearly square, retuse at median; pyrenes 4, oblong, 4–5 mm, ca. 3 mm in diam., both ends obtuse, abaxially longitudinally 4-striate and 3-sulcate, laterally striate and sulcate, endocarp woody. Fl. unknown, fr. Oct.

Sparse woods; 800–1500 m. W Hubei (Lichuan).


猫儿刺 mao er ci

Shrubs or trees, evergreen, 1–5(–10) m tall; bark silver-gray. Branchlets terete or subterete, densely dirty-gray pubescent; terminal buds ovoid-conical, pubescent, apically acute. Petiole ca. 2 mm, pubescent; leaf blade abaxially greenish, adaxially dark green, shiny, ovate or ovate-lanceolate, (1.3–)1.5–3 × 0.5–1.4 cm, leathery, both surfaces glabrous, lateral veins 1–3 pairs, axially obscure, base rounded or truncate, margin sinuate-dentate with 1–3 pairs of spines, apex triangularly acuminate, acumen 1.2–1.4 cm, with a strong spine. Inflorescences: 1-flowered cymes, fasciculate, axillary on current year’s branchlets; fascicles 3- or 4-flowered; bracts ovate, ciliate; fruiting pedicels ca. 2 mm, pubescent, with basal bracteole. Fruit red, globose, 5–5.5 mm in diam., densely pubescent; leaf blade abaxially palmately striate and sulcate, endocarp stony. Fl. and fr. unknown.

Shrubby areas on mountain slopes; 500–1300 m. Jiangxi (Wugong Shan, Wuning).


柃叶冬青 ling ye dong qing

Trees evergreen, small. Branchlets yellow-brown, terete, longitudinally ridged, densely pubescent, branches more than 2 years old longitudinally fissured; terminal buds ovoid, densely pubescent. Leaves on first to second year’s branchlets; petiole 3–4 mm, densely pubescent; leaf blade abaxially greenish, adaxially green, shiny when dry, ovate, rarely ovate-lanceolate, 2.5–3.5 × 1–1.5 cm, leathery, both surfaces glabrous, midvein abaxially slightly raised, adaxially slightly impressed, puberulent, lateral veins 6 or 7 pairs, slightly raised abaxially, indistinctly reticulate veins evident abaxially, absent adaxially, base obtuse, margin sparsely 5- or 6-spinose-dentate, apex triangular, acuminate, terminated by a short spine. Flowers not known. Infructescences: 1-fruited cymes, fasciculate, axillary on current year’s branchlets; fascicles 3- or 4-fruited; bracts ovate, ciliate; fruiting pedicels ca. 2 mm, pubescent, with basal bracteole. Fruit red, globose, 5–5.5 mm in diam., minutely tuberculate (under magnifying lens); persistent calyx quadrangular, ca. 2 mm in diam., 4-lobed, lobes deltoid-ovate, ciliate; persistent stigma mamiliform, nearly square, retuse at median; pyrenes 4, oblong, 4–5 mm, ca. 3 mm in diam., both ends obtuse, abaxially longitudinally 4-striate and 3-sulcate, laterally striate and sulcate, endocarp woody. Fl. and fr. unknown.

Sparse woods; 800–1500 m. W Hubei (Lichuan).
mm, ca. 3.5 mm in diam., abaxially palmately striate and sulcate, laterally reticulately striate and sulcate, endocarp thick, woody. Fl. Apr–May, fr. Oct–Nov.

- Forests or shrubby areas in valleys; 1000–2500 m. Anhui, S Gansu, Guizhou, Henan, W Hubei, Hunan, Jiangxi, S Shaanxi, Sichuan, Xizang, Zhejiang.


温州冬青  wèn zhōu dōng qīng

-Shrubs evergreen, small, 1.5–2 m tall. Branchlets green, longitudinally angular, pubescent. Petiole 1–2 mm, puberulent; leaf blade abaxially greenish, adaxially green, slightly shiny, ovate, 3–6.5 × 1.2–3 cm, leathery, both surfaces glabrous, midvein impressed pubescent adaxially, lateral veins 4 or 5 pairs, obscure abaxially, evident adaxially, base truncate or rounded, margin sinuate, with 3–7 pairs of spines, apex acuminate, with spine. Inflorescences: 1-flowered cymes, fasciculate, axillary on second year’s branchlets; flowers 4-merous. Male inflorescences: pedicels ca. 1 mm, puberulent; bracts 2, large, ciliate; calyx petaliform, ca. 2 mm in diam., deeply 4-lobed, lobes deltoid, apex obtuse, ciliate; corolla rotate, 6–7 mm in diam., petals oblong, ca. 3 × 2.5 mm, sparsely ciliate, basally slightly connate; stamens 4, ca. as long as petals, anthers ovoid; rudimentary ovary conical, ca. 1 mm, apex obtuse. Female flowers not known. Inflorescences: fruiting pedicels 4–5 mm, puberulent; bracteoles 2, basal, ovate, ciliate. Fruit depressed globose, 5–6 mm, ca. 8 mm in diam., longitudinally sulcate; persistent calyx explanate; persistent stigma thinly discoid or navel-shaped; pyrenes 4, subglobose, ca. 5 mm, ca. 4.5 mm in diam., abaxially palmately striate, not sulcate and not longitudinally impressed, laterally reticulately striate and sulcate, endocarp woody. Fl. May, fr. Oct.

- Thickets on slopes and in valleys; 600–900 m. Zhejiang (Jinyun, Wenzhou).


合核冬青  hé hé dōng qīng

-Shrubs. Branchlets yellow-brown, terete, thick, hirsute-pubescent or glabrescent, minutely fissured, bud scales convex, circular, lenticels absent; terminal buds ovoid, ca. 6 mm, ca. 4 mm in diam., glabrous. Leaves only on current year’s branchlets; petiole 3–4 mm, sulcate, adaxially puberulent; leaf blade brown when dry, oblong-elliptic, 7–8 × 2–2.5 cm, thickly leathery, midvein adaxially impressed, puberulent, lateral veins 6–8 pairs, obscure abaxially, slightly impressed adaxially, base cuneate, margin entire, apex acute. Flowers not known. Inflorescences: 1-fruited cymes, solitary or few fascicled, fascicles 2- or 3-fruited, axillary on current year’s branchlets; fruiting pedicels ca. 1.5 mm, thick; bracteoles 2, narrowly ovate-triangular, ca. 2 × 1 mm, not ciliate. Fruit shiny, black-purple when dry, globose, 8–12 mm in diam., glabrous; persistent calyx explanate, ca. 4 mm in diam., 4-lobed, lobes triangular, glabrous; persistent stigma discoid; pyrenes 1 or 2, oblong, ca. 8 mm, ca. 5.5 mm in diam., both ends obtuse, longitudinally thickly striate and deeply sulcate, endocarp stony. Fl. and fr. unknown.

- Yunnan.


长叶枸骨  cháng yè gōu gǔ

-Ilex pernyi Franchet var. manipurensis Loesener.

-Shrubs evergreen, 1–5(–8) m tall. Branchlets gray-yellow, terete, longitudinally shallowly striate-sulcate, densely pubescent; terminal buds conical, pubescent. Petiole 1–2 mm, adaxially sulcate, pubescent; leaf blade abaxially greenish, adaxially dark green and shiny, lanceolate or ovate-lanceolate, rarely ovate, 1.8–4.5 × 0.7–1.5 cm, thickly leathery, glabrous, midvein adaxially shallowly impressed, pubescent, lateral veins 5–7 pairs, evident abaxially, indistinct adaxially, reticulate veins indistinct on both surfaces, base rounded or cordate, margin thickened, recurved, subenterire with 2 or 3 pairs of spines, apex acuminate, with a yellow spine ca. 3 mm. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; 1-flowered pedicels 2–4 mm; 3-flowered peduncles and pedicels ca. 1 mm, sparsely puberulent; bracts ovate, ciliate; bracteoles 2, pubescent; flowers 4-merous; calyx ca. 2 mm in diam., 4-lobed, lobes ovate, apex obtuse or rounded, ciliate; corolla rotate, petals ca. 2 mm, sparsely ciliate, basally connate; stamens longer than petals, anthers oblong; rudimentary ovary subglobose or ovoid, apex obtuse, sometimes slightly 2-lobed. Female flowers not known. Inflorescences: 1-fruited cymes; fascicles 2(or 3)-fruited; fruiting pedicels ca. 2 mm, pubescent. Fruit red, obovoid-ellipsoidal, 4–7 mm, 3–4 mm in diam.; persistent calyx explanate, 4-lobed, lobes broadly angular, sparsely puberulent; persistent stigma discoid, retuse at middle; pyrenes 1 or 2, obovoid-oblong, 4–5 mm, 2.5–3 mm in diam., abaxially palmately striate and sulcate, endocarp woody. Fl. Feb–May, fr. Oct.

Sparse forests, shrub forests, roadsides; 1600–3700 m. W Sichuan, Xizang, Yunnan [NE India, N Myanmar].


刺叶冬青  cì yè dōng qīng

-Ilex bioritsensis var. ovatifolia H. L. Li; I. diplosperma S. Y. Hu; I. pernyi Franchet f. veitchii (Rehder) Rehder; I. pernyi var. veitchii Rehder.

-Shrubs or trees, evergreen, 1.5–10 m tall. Branchlets gray-brown, suberete, sparsely puberulent or glabrescent, smooth, without lenticels; terminal buds conical, puberulent, apically acute, bud scales ciliate. Leaves on up to fourth year’s branches; petiole ca. 3 mm, pubescent; leaf blade abaxially greenish, adaxially dark green and shiny, ovate to rhombic, 2.5–5.5 × 1.5–2.5 cm, leathery, glabrous, midvein sulcate, puberulent adaxially, lateral veins 4–6 pairs, indistinct or slightly raised abaxially, impressed adaxially, reticulate veins obscure on both surfaces, base rounded or truncate, margin sinuate, with 3 or 4 pairs of strong spines, apex acuminate, with spine ca. 3 mm. Inflorescences: 1-flowered cymes, fasciculate, axillary on second year’s branchlets; bracts ovate, ca. 1.75 mm, ciliate; flowers 4-merous,
yellowish green. Male inflorescences: pedicels ca. 2 mm, glabrous; bracteoles 2, ovate; calyx patelliform, ca. 3 mm in diam., lobes broadly deltoid, ciliate; petals basally slightly connate; stamens longer than petals, anthers oblong; rudimentary ovary ovoid, ca. 1 mm in diam. Female inflorescences: pedicels ca. 2 mm; bracteoles 2, subbasal, glabrous; calyx as in male flowers; petals free; staminodes ca. 1/2 as long as petals, sterile anthers ciliate; ovary oblong-ovoid, 2–4 mm, stigma thinly discoid. Fruit red, ellipsoid, 8–10 mm, ca. 7 mm in diam.; persistent calyx explanate; persistent stigma 2–4 mm, stigma thinly discoid. Fruit red, globose, 8–10 mm, ca. 7 mm in diam., slightly convex, abaxially palmately striate and sulcate, adaxially striate, endocarp woody. Fl. Apr–May, fr. Jul–Oct.

- Evergreen broad-leaved forests, thickets; 900–4000 m. Guizhou (Fanjing Shan), SW Hebei, SW Hubei, Hunan, Sichuan, C Taiwan, N Yunnan.


纤齿枸骨 xian chi gou gu

**Ilex bioritsensis** Hayata var. *ciliospinosa* (Loesener) H. F. Comber.

Shrubs or small trees, evergreen, 1–7 m tall. Young branchlets brown, shiny, or gray-white, longitudinally striate, densely pubescent; terminal buds ovoid, pubescent, apex cuspidate. Petiole 2–3 mm, rugose, pubescent; leaf blade abaxially greenish, adaxially deep green, shiny, elliptic or ovate-elliptic, 2.5–4 × 1–2.5 cm, leathery, glabrous, midvein abaxially raised and glabrous, adaxially impressed and pubescent, lateral veins 4–6 pairs, indistinct adaxially, base rounded, rarely obtuse, margin spinose-serrate, pairs of spines, apex shortly acuminate or acute, with a weak spine. Inflorescences: 1-flowered cymes, fasciculate, fascicles 2–5-flowered, axillary on current year’s branchlets; bracts lanceolate, ciliate; pedicels 2–3 mm, pubescent or glabrescent; bracteoles 2, median or submedian; flowers yellowish, 4-merous. Male flowers: calyx deeply 4-lobed, lobes ovate-deltoid, apex ciliate; ovary obtuse or rounded, ciliate; corolla rotate, ca. 6 mm in diam., petals ovate, ca. 3 × 2 mm, basally slightly connate, apex ciliate; stamens longer than petals, anthers oblong; rudimentary ovary ovoid, ca. 1 mm in diam. Female flowers: calyx as in male flowers; corolla erect, ca. 6 mm in diam., petals ovate, ca. 2.5 mm; staminodes ca. as long as petals, sterile anthers sagitate; ovary oblong, ca. 2 mm, ca. 1.5 mm in diam., stigma discoid. Infructescences: solitary or paired, rarely 3-fruited fascicles. Fruit red, ellipsoid, 7–8 mm, 5–6 mm in diam.; fruiting pedicel 2–4 mm, pubescent or glabrescent; persistent calyx quadrangular; persistent stigma 2–4 lobed; pyrenes (1 or)2(–4), when 2 pyrenes: oblong-ellipsoid or subglobose, 5–7 mm, ca. 5 mm in diam., abaxially palmately striate and sulcate, adaxially striate-sulcate; when 4 pyrenes: oblong, ca. 3.5 mm in diam.; endocarp woody. Fl. Apr–Jul, fr. Jun–Dec. 2n = 40.*

- Mixed forests, *Picea* forests, *Abies* forests on mountain slopes or roadsides; 1500–2600(–3100) m. SW Hubei, Sichuan, SE Xizang, Yunnan.

68. Ilex dipyrena Wallich in Roxburgh, Fl. Ind. 1: 473. 1820.

双核枸骨 shuang he gou gu

**Ilex bioritsensis** Hayata var. *integra* H. F. Comber; **I. dipyrena** var. *connexiva* W. W. Smith; **I. dipyrena** var. *parcispinosa* Loesener; **I. monopryrena** G. Watt ex Loesener.

Shrubs or trees, evergreen, 2–15(–25) m tall; bark gray-black, slightly longitudinally fissured. Branchlets striate, puberulent or glabrescent; old branches gray-yellow, thick and strong, smooth or minutely fissured, lenticles obscure, leaf scars semicircular. Petiole 3–6 mm, abaxially rugose, adaxially sulcate and pubescent; leaf blade abaxially greenish, adaxially deep green, shiny, elliptic-oblong, elliptic, or ovate-elliptic, rarely ovate, 4–10 × 2–4 cm, thickly leathery, both surfaces glabrous, midvein impressed, puberulent or glabrescent adaxially, lateral veins 6–9 pairs, raised abaxially, impressed adaxially, base broadly cuneate to rounded, margin entire or subentire with 3–14 spines per side, apex shortly acuminate to acuminate, with a sharp spine. Inflorescences: 1-flowered cymes, fasciculate, axillary on second year’s branchlets; bracts ovate-lanceolate, ciliate; flowers greenish, 4-merous. Male inflorescences: pedicels 2–3 mm, sparsely puberulent or glabrescent; bracteoles basal, lanceolate, ca. 1.5 mm; calyx discoid, ca. 3 mm in diam., deeply lobed, lobes ovate-deltoid, sparsely ciliate, apex acute or obtuse; corolla rotate, ca. 7 mm in diam., petals ovate, ca. 3 mm, ciliate, basally slightly connate; stamens 4, longer than petals, anthers oblong-ovoid; rudimentary ovary ovoid, ca. 1.5 mm in diam., apex obtuse or truncate. Female inflorescences: pedicels 1–3 mm, sparsely puberulent or glabrescent; calyx and corolla as in male flowers; staminodes slightly shorter than petals, sterile anthers subcordate or sagitate; ovary ovoid, stigma discoid, lobed. Fruit red, globose, 7–9 mm in diam.; persistent calyx quadrangular; persistent stigma discoid, 2–4 lobed; pyrenes (1 or)2(–4), when 2 pyrenes: oblong-ellipsoid or subglobose, 5–7 mm, ca. 5 mm in diam., abaxially palmately striate and sulcate, adaxially striate-sulcate; when 4 pyrenes: oblong, ca. 3.5 mm in diam.; endocarp woody. Fl. Apr–Jul, fr. Jun–Dec. 2n = 40.*

Evergreen broad-leaved forests, mixed forests, shrubby areas, valleys, roadsides; 2000–3400 m. SW Hubei, SW Sichuan (Muli), SE Xizang, Yunnan [Bhutan, N India, Myanmar, Nepal].


大别山冬青 da bie shan dong qing

Trees evergreen, small, ca. 5 m tall, glabrous; bark gray-white, smooth. Branches yellow-brown or castaneous-brown when dry, strong, terete, longitudinally fissured, with subcircular convex leaf scars; current year’s branchlets longitudinally ridged; terminal buds ovoid-conical, bud scales ovid, midvein raised, margin entire or serrate, apex acuminate. Leaves on first to second year’s branchlets; stipules subdeltoid, minute; petiole yellow-brown or castaneous-brown when dry, strong, 5–8 mm, abaxially rugose, adaxially slightly sulcate or flat; leaf blade adaxially ovaceous or brown-ovaceous, shiny, ovate-oblanceolate, ovate, or elliptic, 5.5–8 × 2–4 cm, thickly leathery, both surfaces glabrous, midvein slightly impressed adaxially, lateral veins 4–6 pairs, anastomosing near margin, reticulate veins obscure on both surfaces, base subrounded or obtuse, margin slightly revolute, with 4–8 pairs of spines, spines ca. 2 mm, apex
triangular-acute, with a spine. Male inflorescences: 1-flowered cymes, glomerate, fasciculate, axillary on first to second year’s branchlets; pedicels 1–1.5 mm, glabrous; flowers 4-merous, yellow-green; calyx subpatelliform, lobes suborbicular, ciliate; petals obovate, ca. 2 mm, basally slightly connate; stamens ca. 2/3 as long as petals, anthers oblong; rudimentary ovary ovoid, ca. 0.75 mm in diam., apex obtuse. Female flowers not known. Inflorescences: 1-fruited cymes, fasciculate, axillary; rachis strong, ca. 3 mm, glabrous; fruiting pedicels ca. 2 cm; bracts 2, basal, ovate-oblong, glabrous. Fruit dark brown when dry, subglobose or ellipsoidal, 5–7 mm, 4–5 mm in diam.; persistent calyx 4-lobed, lobes ovate-deltoid; persistent stigma thickly discoid; pyrenes 3, ovoid-ellipsoidal, ca. 5 mm, ca. 3 mm in diam., abaxially palmately or longitudinally striate and sulcate, endocarp leathery. Fl. Mar–Apr, fr. Oct.


城口冬青  cheng kou shu

Trees evergreen. Young branchlets dark brown, longitudinally angular and sulcate, pubescent; second year’s branchlets dark brown, minutely tuberculare. Petiole short, ca. 2 mm, abaxially rugose, adaxially sulcate, glabrous; leaf blade abaxially greenish, adaxially deep green, shiny, oblong, or ovate-oblong, 3.5–7 × 2–3.5 cm, leathery, glabrous except puberulent on midvein adaxially, midvein adaxially impressed and becoming narrowly sulcate, lateral veins 3–6 pairs, slightly raised abaxially, slightly impressed adaxially, reticulate veins obscure, base truncate or subcordate, margin with 2–5 pairs of large spines, spine tip black, apex narrowly deltoid-acuminate, with 1 thick spine. Flowers not known. Inflorescences: 1-fruited cymes, solitary or few fascicled, axillary; fascicles 2-fruited. Fruit red, subglobose, ca. 9 mm in diam.; fruiting pedicel ca. 2 mm; persistent calyx 4-lobed, lobes suborbicular, ciliate; persistent stigma thickly discoid; pyrenes 4, oblong or ovoid, 6–8 mm, 4–5 mm in diam., abaxially striate and sulcate, endocarp woody. Fl. May–Jun, fr. Oct.

● Slopes, roadsides, streamssides; 100–500 m. W Anhui (Huoshan).


毛叶冬青  mao guo dong qing

Trees evergreen, small, ca. 4 m tall. Branchlets terete, longitudinally ridged and sulcate, minutely pubescent; terminal buds ovoid-conical, densely pubescent, acipulcuminate. Leaves on first to second year’s branchlets; petiole 5–10 mm, densely pubescent, abaxially rugose, adaxially flat, convex, narrowly winged by deciduous leaf base; leaf blade abaxially greenish, adaxially green and shiny, obovate-oblong or oblong-lanceolate, 7.5–10 × 2–3.7 cm, leathery, abaxially glabrous, midvein adaxially slightly impressed or flat, sparsely puberulent, lateral veins 9 or 10 pairs, anastomosing near margin, raised and prominent on both surfaces, reticulate veins evident on both surfaces, base cuneate, margin recurved, sparsely serrate, teeth inwardly curved, apex abruptly or not acuminata. Flowers not known. Inflorescences: cymes, axillary. Fruit ovoid-globose, ca. 1 cm, ca. 8 mm in diam., densely puberulent; persistent stigma subquadrangular, thickly discoid; persistent calyx quadrangular, ca. 3 mm in diam., 4-lobed, lobes orbicular, ciliate; pyrenes 4, ellipsoid, ca. 6 mm, ca. 4 mm in diam., abaxially irregularly striate and slightly sulcate, laterally irregularly longitudinally ridged and deeply sulcate, endocarp stony. Fl. unknown, fr. Nov.

● Shrubby areas; 1000–1500 m. SE Yunnan (Xichou).


毛叶冬青 mao ye dong qing


Trees evergreen, ca. 8 m tall. Branchlets brown, strong, subterete, longitudinally ridged and sulcate, puberulent; terminal buds conical, large, pubescent, apically acute; bud scales serrulate. Leaves on first to second year’s branchlets; petiole 2–2.2 cm, abaxially subrounded, rugose, adaxially sulcate, pubescent; leaf blade abaxially greenish, adaxially green and shiny, oblong to oblong-elliptic, 10–18 × 4.5–7.5 cm, leathery, midvein raised and keeled abaxially, impressed and sparsely puberulent axially, lateral veins 14 or 15 pairs, prominent on both surfaces, reticulate veins evident on both surfaces, base obtuse or cuneate, margin doubly serrate or densely serrate, apex acute or shortly acuminate. Inflorescences: cymes pseudopanicle or pseudoracemose, axillary on current year’s branchlets; flower buds glomerate; bracts basal, broadly ovate or suborbicular, ciliate. Male inflorescences: cymes of order 2 or 3, 3- or 4–(7)-flowered, pseudopaniculate; peduncles 1–2 mm; pedicels 1.5–3 mm, minutely puberulent; bracteoles ovate-lanceolate, minutely ciliate; calyx patelliform, deeply 4-lobed, lobes broadly ovate-deltoid, ca. 1.5 × 2 mm, membranous; petals 4, ovate-oblong, ca. 3.5 mm; stamens 4, shorter than petals, anthers ellipsoidal; rudimentary ovary ovoid. Female flowers not known. Inflorescences: 1-fruited cymes, pseudoracemose; rachis strong, 4–6–(9) mm; fruiting pedicels (4–)8 mm, thick, pubescent or glabrescent. Fruit red, globose, ca. 11 mm, 9–12 mm in diam., densely puberulent; exocarp fragile when dry; persistent calyx explanate, 4–5 mm in diam., lobes deltoid, sparsely ciliate; persistent stigma navellike; pyrenes 4, oblong, ca. 7.5 mm, 4–5 mm in diam., abaxially reticulately striate and sulcate, laterally rugose and pitted, endocarp stony. Fl. Apr–Jun, fr. Jul–Oct.

● Dense forests; 1000–1200 m. Guangdong, Guangxi, Hainan, Hubei, Hunan, Sichuan, SE Yunnan.

73. Ilex pubilimba Merrill & Chun, Sunyatsenia 5: 109. 1940.

毛叶冬青 mao ye dong qing

Ilex hirsuticarpa Tardieu.

Trees evergreen, 6–15 m tall. Branchlets terete, strong, densely dark yellow hirsute-pubescent; terminal buds small, densely pubescent. Leaves on first to second year’s branchlets; stipules caducous; petiole 3–6 mm, densely pubescent; leaf blade abaxially pale, adaxially cinnereous-olivaceous, shiny when dry, elliptic, rarely ovate-elliptic or lanceolate, 3–7 × 1.5–2.5 cm, thickly leathery, abaxially pubescent, midvein adaxially impressed and pubescent, lateral veins 6–8 pairs, obscure adaxially,
base rounded, obtuse, or cuneate, margin crenate-serrate, slightly recurved, apex shortly acuminate. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets; bracts ovate or suborbicular, densely pubescent; flowers yellow-white, 4-merous. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles 0.5–1 mm; pedicels 2–3 mm; bracteoles 2, basal; calyx patelliform, 1.5–2 mm, 4-lobed, lobes orbicular, pubescent, ciliate; corolla rotate, ca. 6 mm in diam., petals narrowly elliptic, ca. 2.5 mm, ciliate, basally slightly connate; stamens slightly shorter than petals, anthers ovoid; rudimentary ovary conical, ca. 1 mm in diam., apex obtuse. Female inflorescences: 1-flowered cymes; calyx and corolla as in male flowers; staminodes ca. 1/3 as long as petals, sterile anthers ovoid; ovary subglobose, ca. 1.75 mm in diam., sparsely pubescent, stigma discoid, convex. Fruit depressed globose, 5–6 mm, 7–8 mm in diam.; fruiting pedicel 3–5 mm, pubescent; persistent calyx orbicular, exlapate; petals 4 mm in diam., sparsely pubescent, 4-5 mm in diam., rugose, abaxially flattened and slightly impressed, endocard woody. Fl. Mar, fr. Aug-Oct.

Dense forests; middle elevations. Hainan [Vietnam].

74. Ilex latifolia Thunberg in Murray, Syst. Veg., ed. 14, 168. 1784.

大叶冬青 da ye dong qing

Ilex latifolia var. tarajo (Göppert) Lavallée; Ilex tarajo Göppert.

Trees evergreen, to 20 m tall, ca. 60 cm d.b.h., glabrous throughout; bark gray-black, smooth. Branches yellow-brown or brown, strong, longitudinally ridged and sulcate, smooth; leaf scars evidently raised, broadly discoid or semicircular. Leaves on first to third year’s branchlets; stipules broadly deltoid, very minute, apically acute; petiole subterete, 1.5–2.5 cm, ca. 3 mm in diam., abaxially rugose, adaxially slightly impressed; leaf blade abaxially greenish, adaxially deep green, shiny, oblong or ovate-oblong, 8–19(–28) × 4.5–7.5(–9) cm, thickly leathery, midvein impressed adaxially, lateral veins 12–17 pairs, obscure abaxially, obvious adaxially, base rounded or broadly cuneate, margin sparsely serrate, teeth black at tips, apex obtuse or shortly acuminate. Inflorescences: cymes, pseudopaniculate or fasciculate, axillary on second year’s branchlets; rachis, peduncle, and pedicels puberulent; bracts and bracteoles ovate-deltoid, ciliate; flowers purple-red, 4-merous. Male inflorescences: cymes of order 1 or 2, 1- or 3-flowered; pedicels 5–6 mm; calyx cup-shaped, ca. 3 mm in diam., sparsely puberulent, 4-lobed, lobes orbicular, ciliate; petals 4, obovate-oblong, ca. 4 mm, nearly free; stamens ca. 2/3 as long as petals, anthers ellipsoidal, ca. 2 mm; rudimentary ovary conical, 1–1.5 mm. Female inflorescences: cymes of order 1 or 2, 1- or 3-flowered; pedicels 5–6 mm; calyx and corolla as in male flowers; stigmas 1-flowered cymes; calyx and corolla as in male flowers; stamens ca. 1/3 as long as petals, sterile anthers ovoid; ovary subglobose, ca. 1.75 mm in diam., sparsely puberulent, 4-5 mm in diam., rugose, abaxially flattened and slightly impressed, endocard woody. Fl. Apr-May, fr. Sep-Oct.

Evergreen broad-leaved forests, scrub forests, bamboo forests; 200–1500 m. Anhui, Fujian, Guangdong, Guangxi, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Yunnan, Zhejiang [Japan].


巨叶冬青 ju ye dong qing

Shrubs or small trees, evergreen. Branchlets black-purple or brown, terete, robust, with distinctly raised rounded leaf scars; terminal buds narrowly conical, slightly pubescent. Petiole 1.8–2.5 cm, thick, abaxially rugose and longitudinally striate and sulcate, adaxially sulcate; leaf blade adaxially olivaceous or brown-olivaceous when dry, shiny, elliptic or oblong, (20–)30–36 × (8–)9–13 cm, leathery, abaxially very shortly puberulent and minutely glandular punctate, midvein impressed adaxially, lateral veins 15–20 pairs, slightly raised on both surfaces, reticulate veins obscure abaxially, slightly raised adaxially, base obtuse or broadly cuneate, margin revolute, sparsely serrate, teeth incurved, apex acuminate or falcate-acuminate. Inflorescences: cymes, pseudopaniculate or fasciculate, axillary, on first to second year’s branchlets; rachis, peduncle, and pedicels puberulent; bracts and bracteoles ovate-deltoid, ciliate; flowers purple-red, 4-merous. Male inflorescences: cymes of order 1 or 2, 2- or 3-flowered; pedicels 5–6 mm; calyx cup-shaped, ca. 3 mm in diam., sparsely puberulent, 4-lobed, lobes orbicular, ciliate; petals 4, obovate-oblong, ca. 4 mm, nearly free; stamens ca. 2/3 as long as petals, anthers ellipsoidal, ca. 2 mm; rudimentary ovary conical, 1–1.5 mm. Female inflorescences: cymes of order 1 or 2, 1- or 3-flowered; pedicels 5–6 mm; calyx and corolla as in male flowers; stigmas 1-flowered cymes; calyx and corolla as in male flowers; stamens ca. 1/3 as long as petals, sterile anthers ovoid; ovary subglobose, ca. 1.75 mm in diam., sparsely puberulent, 4-5 mm in diam., rugose, abaxially flattened and slightly impressed, endocard woody. Fl. Apr-May, fr. May-June.
impressed and sparsely puberulent adaxially, lateral veins 8–15 pairs, slightly raised adaxially, reticulate veins obscure abaxially, evident adaxially, base obtuse, rarely rounded or cuneate, margin sparsely serrate, apex acuminate. Flowers not known. Infructescences: usually 1-fruited cymes, few fascicled; fruiting pedicels 2–4 mm, slightly puberulent when young, later glabrescent; bracteoles 2, subbasal. Fruit red, globose, 1.1–2.6 cm in diam.; persistent calyx expanlate, ca. 3.5 mm in diam., inconspicuously 4-lobed, lobes rounded, slightly puberulent and ciliate; persistent stigma navel-like, 4–5 mm in diam., orbicular when young, becoming quadrangular; pyrenes 4, obovoid, 1–1.2 cm, 6–9 mm in diam., reticulate striate, sulcate, rugose and pitted, abaxially flat and broadly impressed, endocarp stony. Fl. May, fr. Aug–Nov.

- Forests, hilly areas; 800–1500 m. Guangdong (Lianshan), Guangxi, Guizhou, Hunan.

1a. Petiole puberulent, leaf blade oblanceolate; fruit ca. 1.1 cm in diam. .......................... 76b. var. puberula

1b. Petiole glabrous, leaf blade oblong to elliptic; fruit 1.5–2.6 cm in diam.

2a. Base of leaf blade obtuse; fruit ca. 1.5 cm in diam. .......................... 76a. var. chingiana

2b. Base of leaf blade cuneate; fruit 2–2.6 cm in diam. .......................... 76c. var. megacarpa

76a. Ilex chingiana var. chingiana

 Gauge hung you (原变种) miao shan dong qing (yuan bian zhong)

Petiole glabrous; leaf blade oblong-elliptic, rarely oblan-
ceolate, 11–15 × 4–5 cm, base obtuse. Fruit large, ca. 1.5 cm in

- Broad-leaved forests in hilly areas; ca. 800 m. Guangxi, Guizhou, Hunan.


苗山冬青 miao miao shan dong qing

Petiole puberulent; leaf blade oblanceolate, 7–12 × ca. 3

- Mixed forests, hilly areas; 800–1500 m. Guangxi (Lingyun).

76c. Ilex chingiana var. megacarpa (H. G. Ye & H. S. Chen) L. G. Lei, comb. et stat. nov.

巨果冬青 ju guo dong qing


Petiole glabrous; leaf blade oblong-elliptic, 9–15 × 4–5.5

- Forests in hilly areas; ca. 1100 m. Guangdong (Lianshan)


阳春冬青 yang chun dong qing

Shrubs evergreen; bark gray. Young branchlets dark yellow when dry, terete, longitudinally striate and sulcate, glabrous;

second or more year’s branchlets yellow-brown, with slightly raised circular leaf scars and lenticels. Leaves on first to second

year’s branchlets; petiole 1–1.2 cm, abaxially rugose, adaxially sulcate, glabrous, narrowly winged at apex; leaf blade yellow-

olivaceous when dry, oblong-elliptic, 7–8.5 × 2–2.5 cm, leath-

er, both surfaces glabrous, midvein impressed adaxially, lateral

veins 7 or 8 pairs, abaxially conspicuous, raised, curved and

anastomosing near margin, adaxially subconspicuous and

slightly raised or indistinct, reticulate veins raised abaxially,

obscure adaxially, base cuneate, margin sparsely crenate-serrate, apex acuminate, shortly acuminate, or obtuse. Flowers not

known. Infructescences: 1-fruited cymes, solitary or fasciculate, fasciciles 2- or 3-fruited, axillary on current year’s branchlets;

fruiting pedicels 1.2–1.5 cm, longitudinally striate, glabrous;

bracteoles 1 or 2, basal, ovate-deltoid, glabrous. Fruit yellow, globose, ca. 1 cm in diam.; persistent calyx discoid, expanlate,

c. 4 mm in diam., glabrous, 4-lobed, lobes half-orbicular;

persistent stigma thickly discoid, ca. 1.5 mm in diam., 4-lobed;

pyrenes 4, ovoid-trigonal, 8–9 mm, ca. 5 mm in diam., trans-
verse section V-form, abaxially broadly concave, irregularly

striate and sulcate, endocarp stony. Fl. unknown, fr. Nov.

- Rocky places, hills; 500–1000 m. Guangdong (Yangchun).


铃木冬青 ling mu dong qing

*Ilex lupingsanensis* H. E. Chiang.

Shrubs or small trees, evergreen. Young branchlets terete, longitudinally ridged, glabrous; third year’s branchlets black,

with lenticels and slightly raised semicircular leaf scars; axillary buds globose, large, terminal buds conical, apically acute, scales densely ciliate. Leaves on first to fourth year’s branchlets; peti-

ole 4–7 mm, adaxially narrowly sulcate, glabrous; leaf blade adaxially green, slightly shiny, elliptic, 2.5–5.5 × 1–2.2 cm, leathery, both surfaces glabrous, midvein slightly raised abaxially, flat adaxially, lateral veins 5 or 6 pairs, obscure, reticulate veins prominent abaxially, base acute or cuneate, margin entire, apex obtuse or shortly acuminate. Male flowers not known. Female flowers 4-merous; calyx 4-lobed, sepals ca. 1 mm, margin ciliate; corolla 4-lobed, ca. 2.5 × 1.5 mm. Infructes-

cences: 1-fruited cymes, fasciculate, axillary on second year’s branchlets; fascicles 2- or 3-fruited, bracts suborbicular or ovate, ciliate; fruiting pedicels ca. 4 mm, glabrous; bracteoles 2, dis-
coid, ciliate. Fruit castaneous, shiny, globose, ca. 5 mm in diam., smooth; persistent calyx rounded, explanate, 4-lobed, lobes orbicular, ciliate; persistent stigma navel-like, 4-lobed; pyrenes 4, oblone-obovoid, ca. 3 mm, ca. 2 mm in diam., both ends obtuse, abaxially palmately slightly raised striate, not sulcate, endocarp woody. Fl. unknown, fr. Aug.

- Woods, hills; middle elevations. Taiwan (Nantou, Taoyuan, Yilan).


全缘冬青 quan yuan dong qing

*Ilex asiatica* Sprengel (1824), nom. illeg. superfl., not Lin-

naeus (1753); *I. integra* var. leucoclada Maximowicz; *I.
leucoclada (Maximowicz) Makino; *I. othere* Sprengel; *Othera japonica* Thunberg; *Prinos integer* Hooker & Arnott; *Winteria integra* (Thunberg) K. Koch.

Trees evergreen, small, ca. 5.5 m tall; bark gray-white. Branchlets brown, robust, longitudinally rugose-plicate; lenticels raised, elliptic; leaf scars slightly raised, subcircular, glabrous; terminal buds ovoid-conical; axillary buds ovoid, glabrous. Petiole 1–1.5 cm, glabrous, abaxially subrounded, rugose, adaxially longitudinally striate, distal half narrowly winged by decurrent leaf base; leaf blade abaxially greenish, adaxially deep green, obovate or obovate-elliptic, rarely oblong-elliptic, 3.5–8 × 1.5–4.5 cm, thickly leathery, both surfaces glabrous, midvein flat or slightly impressed adaxially, lateral veins 6–9 pairs, furcate and anastomosing near margin, raised abaxially, evident or indistinct adaxially, reticulate veins slightly evident abaxially, indistinct adaxially, base cuneate, margin entire, apex obtuse-rounded, with short broad acumen. Inflorescences: cymes, fasciculate, axillary on current year’s branchlets; basal bud scales numerous, ovate, leathery. Male inflorescences: cymes of order 2, 3-flowered; peduncles very short; pedicels 3–5 mm, glabrous; bracteoles 2, subbasal, ovate, 1–1.5 mm, ciliate; flowers 4-merous; calyx patelliform, ca. 3 mm in diam., deeply 4-lobed, lobes ovate, 1–1.5 cm, glabrous, not ciliate; corolla rotate, ca. 7 mm in diam., petals oblong-elliptic, ca. 3.5 × 2 mm; stamens ca. 1.5 mm in diam., petals oblong-elliptic, ca. 3.5 × 2 mm; stamens ca. as long as petals, anthers ovoid-oblong; rudimentary ovary subglobose, apex obtuse. Female flowers not known. Infrafructescences: 1-fruited cymes, fasciculate, fascicles 1–3-fruited; fruiting pedicels 5–10 mm, glabrous; bracts 2, basal. Fruit red, globose, 1–1.2 cm in diam.; persistent calyx discoid, cent er retuse, 4-lobed; pyrenes 4, ovoid-ellipsoid, ca. 0.75 mm; rudimentary ovary subglobose, apex obtuse. Female flowers not known. Infrafructescences: 1-fruited cymes; fruiting pedicels ca. 1 cm; bracteoles 2, basal or subbasal. Fruit globose, 1–1.2 cm in diam., densely tuberculate; persistent calyx 2.5–3 mm in diam., 4-lobed, lobes orbicular, ciliate; persistent stigma thinly discoid, 4-lobed; pyrenes 4, ovoid-ellipsoid, 8–9 mm, 5–7 mm in diam., irregularly rugose and pitted, endocarp stony. Fl. Jan–May, fr. Jun–Dec.

Hills along seashores; ca. 200 m to high elevations. Taiwan (Lan Yu), Zhejiang (Putuo) [Japan, Korea].


薄核冬青 bo he dong qing

Trees evergreen, ca. 7 m tall, ca. 20 cm d.b.h. Young branchlets subterete, longitudinally striate, glabrous; old branches yellow-brown, with black blotches, terete, minutely longitudinally fissured; terminal buds conical, small, glabrous. Leaves on first to third year’s branchlets; petiole 5–8 mm, abaxially transversely rugose, adaxially sulcate, glabrous; leaf blade dark green when dry, obovate-elliptic or elliptic, 5–8 × 2–3 cm, leathery, glabrous, abaxially brown glandular punctate, midvein impressed adaxially, lateral veins 6–8 pairs, slightly raised on both surfaces, obliquely extended, anastomosing near margin, reticulate veins distinct on both surfaces, base cuneate or obtuse, margin slightly revolute, sparsely crenulate-serrate, teeth black, apex shortly acuminate, rarely rounded. Flowers not known. Infrafructescences: 1-fruited cymes, solitary or fasciculate, fascicles 2–4-fruited, axillary on current year’s branchlets; axis nearly absent; fruiting pedicels 6–28 mm, longitudinally striate, glabrous; bracteoles 2, subbasal, ovate-deltoid, glabrous, ciliate.

- Mixed forests, valleys; ca. 800 m. Hunan (Chenzhou).


**长圆果冬青 chang yuan guo dong qing**

Trees evergreen, ca. 20 m tall. Young branchlets castaneous-purple, longitudinally ridged, glabrous; second year’s branchlets castaneous or brown, subterete, with raised elliptic lenticels; terminal buds conical, puberulent or glabrescent. Petiole 8–15 mm, glabrous, adaxially succulent; leaf blade brown when dry, oblong-elliptic or elliptic, rarely ovate-elliptic, 7.5–9.5 × 2.7–3.6 cm, leafy, both surfaces glabrous, abaxially glandular punctate, midvein impressed or subflat adaxially, lateral veins 7–9 pairs, anastomosing near margin, reticulate veins ± distinct adaxially, base attenuate-obluse or obtuse, rarely rounded, margin sparsely crenulate, apex acuminated or acuminate. Flowers not known. Inflorescences: 1-flowered cymes, fasciculate or pseudo-racemose, axillary on first to second year’s branchlets; central axis 5–10 mm; fruiting pedicels 6–10 mm, glabrous or slightly puberulent. Fruit globose or depressed globose, 6–7 mm in diam., smooth; persistent stigma navellike, often impressed, 4-lobed; persistent calyx expanate; pyrenes 4, oblong or elliptoidal, ca. 4 mm, ca. 3 mm in diam., abaxially irregularly 3-striate and 2-sulcate, laterally rugose and pitted, endocarp stony. Fl. unknown, fr. Jul.

- Mixed forests; ca. 2000 m. S Yunnan (Menghai) [India].


**五棱苦丁茶 wu leng ku ding cha**

Trees evergreen, 8–12 m tall. Current year’s branchlets castaneous when dry, stout, 5–6 mm in diam., glabrous, longitudinally sharply angular; terminal buds ovoid-conical, ca. 6 mm, glabrescent or very shortly puberulent. Petiole 2–2.5 cm, abaxially rugose, adaxially narrowly succulate, glabrous; leaf blade abaxially greenish, adaxially dark green, slightly shiny, narrowly elliptic to elliptic, 7.5–20 × 3–7.5 cm, leafy, both surfaces glabrous, midvein deeply narrowly succulate adaxially, lateral veins 12 pairs, evident or indistinct abaxially, slightly raised adaxially, furcate and anastomosing near margin, reticulate veins obscure abaxially, evident adaxially, base cuneate to obtusely rounded, margin sparsely and shallowly serrulate, slightly reflexed, apex obtuse or acute. Flowers not known. Inflorescences: 1-flowered cymes, pseudoracemose, axillary on first to second year’s branchlets; central axis 5–10 mm, robust, glabrous, longitudinally angular and succulate; fruiting pedicels 5–6 mm, glabrous; bracteoles ovate, ca. 1.5 mm, apex obtuse, minutely ciliate. Fruit (immature) globose, 6–8 mm in diam., rugose when dry; persistent calyx expanate, orbicular, ca. 3 mm in diam., minutely ciliate; persistent stigma discoid, slightly impressed; pyrenes 4, oblong-ellipsoid or ovoid-globose, 5–6 mm, 3–4 mm in diam., abaxially striate and succulate. Fl. unknown, fr. May, Sep–Oct.

- Forests on limestone hills; 300–600 m or 1400–1500 m. W Guangxi (Daxin, Tiane’), Guizhou (Suiyang), Hunan (Baojing), SE Yunnan (Xichou).


**细枝冬青 xi zhi dong qing**

Trees evergreen, ca. 8 m tall, glabrous throughout. Young branchlets slender, subterete, longitudinally ridged; third year’s branchlets black, with leaf scars raised, lenticels absent; terminal buds narrowly conical, apically acute. Leaves on first to third year’s branchlets; petiole 1–1.6 cm, slender, narrowly succulate; leaf blade green, ovate-elliptic, elliptic, or narrowly elliptic, 2.5–8 × 1–3 cm, subleafy, midveins slightly impressed adaxially, lateral veins 6–8 pairs, evident or obscure abaxially, obscure adaxially, base acute or cuneate, margin inconspicuously irregularly denticulate-serrate, teeth black, apex obtuse or abruptly shortly acuminate. Male inflorescences: cymes of order 1 or 2, 1–3-flowered, pseudoapathecal, axillary on second year’s branchlets; racis 4–14 mm; peduncles ca. 2 mm; bracts ovate, ca. 4 × 2–5 mm, apex acute; pedicels 2–3 mm; 1-flowered pedicels ca. 5 mm; bracteoles 2, median, deltoid; flowers 4-merous; calyx petaliform, ca. 2.5 mm in diam., 4-lobed, lobes deltoid, margin entire, apex acute or acuminate; corolla rotate, ca. 7 mm in diam., petals reflexed, oblong, ca. 3 × 1.5 mm, basally connate; stamina 4, ca. as long as petals, anthers ovoid, ca. 0.75 mm; rudimentary ovary globose, apex rounded and impressed. Female flowers not known. Inflorescences: 1-flowered cymes, fasciculate or pseudo-racemose; central axis 5–10 mm; fruiting pedicels 6–10 mm, glabrous or slightly puberulent. Fruit globose or depressed globose, 6–7 mm in diam., smooth; persistent stigma navellike, often impressed, 4-lobed; persistent calyx expanate; pyrenes 4, oblong or elliptoidal, ca. 4 mm, ca. 3 mm in diam., abaxially irregularly 3-striate and 2-sulcate, laterally rugose and pitted, endocarp stony. Fl. unknown, fr. Jul.
86a. *Ilex tsangii* var. *tsangii*

细枝冬青 (原变种) xi zhi dong qing (yuan bian zhong)

Leaf blade ovate-elliptic or elliptic, 5–8 × 2–3 cm, lateral veins evident abaxially. Fruiting pedicel 10–12 mm, slender; fruit ca. 6 mm in diam.; pyrenes ca. 4 mm, ca. 3 mm in diam., abaxially and laterally reticulately striate, irregularly rugose and sulcate. Fr. Jul.

*•* Thickets, hills; 500–1000 m. E Guangdong (Dabu).

86b. *Ilex tsangii* var. *guangxiensis*

vari. tsangii (yuan bian zhong)

Leaf blade ovate-elliptic or elliptic, 5–8 × 2–3 cm, lateral veins nearly obscure abaxially. Fruiting pedicel 1.5–2.5 mm; leaf blade narrowly elliptic, 2.5–5 × 1–1.6 cm .......... 86b. var. *guangxiensis*


南宁冬青 nan ning dong qing

Trees evergreen, ca. 20 m tall. Young branchlets dark brown, suberete, longitudinally angular, densely pubescent; third year’s branchlets straight, longitudinally obscurely fissured, with semicircular leaf scars, pubescent; terminal buds small. Leaves on first to fourth year’s branchlets; stipules falcat-deltoid, pubescent at base, apicately acute; petiole 7–10 mm, pubescent, adaxially sulcate, distal half narrowly winged by decurrent leaf base; leaf blade abaxially greenish, adaxially green, shiny, gray-brown when dry, elliptic, rarely lanceolate or ovate-elliptic, 5–8 × 1.5–3.5 cm, thickly leathery, midvein impressed and pubescent adaxially, lateral veins 7 or 8 pairs, distinct abaxially, obscure adaxially, reticulate veins distinct only abaxially, base obtuse or cuneate, margin crenate-serrate, slightly recurved when dry, apex shortly acuminate, acumen broadly deltoid, 2–12 mm. Male flowers not known. Female inflorescences: 1-flowered cymes, fasciculate, fascicles 2–5-flowered, axillary on second year’s branchlets; bracts ovate-reniform, apex cuspidate or mucronate, ciliate; flowers fragrant, 4-merous; pedicels 6–8 mm, puberulent; bracteoles 2, narrowly deltoid, pubescent; calyx patelliform, ca. 3 mm in diam., 4-lobed, lobes orbicular, ca. 0.5 × 1.5 mm, sparsely minutely puberulent, ciliate; corolla rotate, ca. 8 mm in diam., petals ca. 3 × 2 mm, apex ciliate; staminodes 4, slightly shorter than petals, sterile anthers sagittate; ovary ovoid, ca. 3 mm, ca. 2.5 mm in diam., apex truncate, stigma discoid. Fruit subglobose, ca. 8 mm, ca. 1 cm in diam.; fruiting pedicel ca. 8 mm; persistent calyx orbicular, explanate, ca. 3 mm in diam.; persistent stigma discoid, ca. 2 mm in diam., mesocarp fleshy; pyrenes 4, oblong, ca. 6.5 mm, ca. 5.5 mm in diam., abaxially broadly depressed, rugose, reticulately striate, endocarp woody, thin. Fl. Apr.–May, fr. Oct–Nov.

*•* Forests, mixed forests, hills; 600–800 m. Guangdong (Xinfeng), Guangxi, Hainan (Baoting).


乌来冬青 wu lai dong qing

*Ilex formosae* (Loesener) H. L. Li; *I. mertensii* Maximowicz var. *formosae* Loesener; *I. uraiensis* var. *formosae* (Loesener) S. Y. Hu; *I. uraiensis* var. *macrophylla* S. Y. Hu.

Trees evergreen, to 25 m tall. Branchlets suberete, longitudinally ridged, when young puberulent or glabrescent; third year’s branchlets longitudinally minutely fissured, glabrous, lenticels absent, with slightly raised, semilunar leaf scars. Leaves on first to second year’s branchlets; petiole 6–10 mm, adaxially narrowly sulcate, distal half winged by decurrent leaf base; leaf blade abaxially greenish, adaxially green, shiny, elliptic or ovo-elliptic, 3.5–10 × 1.2–3.5 cm, thickly leathery, both surfaces glabrous, midvein slightly impressed adaxially, lateral veins 8 or 9 pairs, raised on both surfaces, reticulate veins raised on both surfaces, base cuneate, margin sparsely serrate, apex shortly and abruptly acuminate. Inflorescences: 1-flowered cymes, fasciculate, axillary on second or third year’s branchlets. Male inflorescences: bracts suborbicular, ciliate; pedicels 3–5 mm, puberulent; bracteoles 2, basal, ciliate; flowers white, 4-merous; calyx patelliform, ca. 2 mm in diam., 4-lobed, lobes...
orbicular, ciliate; petals 4, obovate-ornicular, 3–5 × ca. 2.5 mm, ciliate, basally slightly conate; stamens 4, longer than petals, anthers oblong-ovoid, ca. 1.25 mm; rudimentary ovary subglobose, apex rounded or slightly depressed. Female flowers not known. Inflorescences: bracts oblong-ovate, puberulent, ciliate; fruiting pedicels 6–8 mm, slender, pubescent; bracteoles 2, deltoid, puberulent, ciliate. Fruit red, globose, ca. 1.1 cm in diam.; persistent calyx subicular, ciliate; persistent stigma navel-like, ca. 2.5 mm in diam.; pyrenes 4, oblong, 7–8 mm, ca. 4.5 mm in diam., both ends obtuse, abaxially flattened and depressed, laterally irregularly striate and rugose, endocarp stony. Fl. Mar–Apr, fr. Jul–Dec.

Broad-leaved forests, hills; 800–2000 m. Fujian, Taiwan (Pingdong, Taipei) [Japan (Ryukyu Islands)].


宁德冬青 ning de dong qing

Trees evergreen. Branchlets brown, angular and sulcate, densely black puberulent. Petiole 6–8 mm, adaxially sulcate, densely puberulent; leaf blade abaxially yellow-green when dry, adaxially dark olivaceous, obovate-elliptic, elliptic, or obovate, 4–6 × 2–2.7 cm, leathery, glabrous, abaxially glandular punctate, midvein impressed, only at base puberulent adaxially, lateral veins 8 or 9 pairs, reticulate veins evident abaxially, base obtuse and dentate, margin ciliate, apex obtuse-rounded, stamens ca. 4 mm in diam., submedian; calyx patelliform, 2–2.5 mm in diam., sparsely pubescent; petals 4, oblong-obovate, ca. 3 × 2 mm, subglobose, margin sparsely ciliate, basally slightly conate; stamens ca. as long as petals, anthers ovoid; rudimentary ovary subglobose or ovoid, apex rounded or obtuse. Female flowers not known. Infructescences: 1-flowered cymes; pedicels ca. 3 mm, 4–5 mm in diam., both ends acuminate, abaxially palmately striate and sulcate, laterally rugose and pitted, endocarp woody. Fl. Apr–May or Aug–Oct, fr. May–Dec.

● Forests or forest margins on mountain slopes; 800–1400 m. Fujian (Ningde).


洼皮冬青 wa pi dong qing

Trees evergreen. Branchlets brown, angular and sulcate, densely black puberulent. Petiole 6–8 mm, adaxially sulcate, densely puberulent; leaf blade abaxially yellow-green when dry, adaxially dark olivaceous, obovate-elliptic, elliptic, or obovate, 4–6 × 2–2.7 cm, leathery, glabrous, abaxially glandular punctate, midvein impressed, only at base puberulent adaxially, lateral veins 8 or 9 pairs, reticulate veins evident abaxially, base obtuse and dentate, margin ciliate, apex obtuse-rounded or abruptly shortly acuminate. Flowers not known. Inflorescences: 1-flowered cymes, fasciculate, axillary; fruiting pedicels ca. 5 mm, glabrous; bracteoles basal. Fruit globose, ca. 1 cm in diam.; persistent calyx ca. 3 mm in diam., shallowly 4-lobed, lobes deltoid-ovate or suborbicular, not ciliate; persistent stigma navel-like, ca. 3 mm in diam.; pyrenes 4, broadly ellipsoidal, 6–7 mm, 4–4.5 mm in diam., both ends acuminate, abaxially palmately striate and sulcate, laterally rugose and pitted, endocarp woody. Fl. Apr–May or Aug–Oct, fr. May–Dec.

● Forests, hills; 500–1800 m. Hainan.

91a. Ilex nuculicava var. nuculicava

91b. Ilex nuculicava var. glabra

91c. Ilex nuculicava var. auctumnalis

光枝洼皮冬青 guang zhi wa pi dong qing


Terminal buds, branchlets, and inflorescences pubescent. Leaf blade obovate-lanceolate or narrowly elliptic, 8–13.5 × 3–4.5 cm, base obtuse. Fl. Apr–May.

● Forests, hills; 500–1800 m. Hainan.

91b. Ilex nuculicava var. glabra

秋花洼皮冬青 qiu hua wa pi dong qing

Terminal buds, branchlets, and inflorescences pubescent. Leaf blade narrowly oblanceolate, 6–11 × 2–3.5 cm, base cuneate. Fl. Aug–Oct.

● Forests, hills; middle to high elevations. Hainan.

纤花冬青 xian hua dong qing

Trees evergreen, 6–9 m tall. Young branchlets subterete, longitudinally ridged, slightly puberulent; second year’s branchlets glabrous, longitudinally fissured and plicate; third year’s branchlets castaneous, with flat, deltoid leaf scars. Leaves on first to third year’s branchlets; petiole 1–1.5 cm, linear-sulcate, glabrous or minutely puberulent, distal half winged by decurrent leaf base; leaf blade abaxially greenish, adaxially green, shiny, obovate-elliptic or oblong-elliptic, 2–7.5 × 1.5–3.5 cm, thickly leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 5–7 pairs, raised abaxially, obscure adaxially, reticulate veins loosely evident abaxially, base obtuse or acute, margin sparsely minutely serrate or subentire, apex retuse, rarely acute. Inflorescences: cymes, fasciculate, axillary on current year’s branchlets; bracts ovate-deltoid, puberulent, apex acute or tricuspidate; flowers white, 4-merous. Male inflorescences: cymes of order 2, 3-flowered; peduncles 1–2 mm; petals 3–6 mm, both surfaces sparsely puberulent or glabrescent; bracteoles 1 or 2, basal, narrowly ovate, not ciliate. Fruit red, globose, ca. 5 mm in diam.; fruiting pedicels 4–6 mm. Fl. May–Aug, fr. Oct–Nov.

93. **Ilex intricata** J. D. Hooker var. oblata W. E. Evans; I. oblata (W. E. Evans) H. F. Comber.

Trees evergreen, small, 3–5 m tall, glabrous throughout. Branchlets brown or gray, terete; young ones longitudinally ridged and sulcate, ridges densely corky verruculose; old branchlets smooth, nearly not verruculose; terminal buds narrowly ovoid; bud scales glabrous or puberulent. Leaves on first to third year’s branchlets; petiole 4–5 mm, slender, narrowly sulcate; leaf blade broadly elliptic, rarely broadly obovate or broadly ovate, 0.5–1.7 × 0.5–1.2 cm, papery, both surfaces glabrous, midvein impressed adaxially, lateral veins 3 or 4 pairs, and reticulate veins slightly raised abaxially, impressed adaxially, base obtuse or cuneate, margin slightly reflexed, with 4–9 pairs of teeth, apex obtuse-rounded, acumen. Inflorescences: 1-flowered cymes, solitary or few fascicled, fascicles 2- or 3-flowered, axillary on second year’s branchlets; bracts suborbicular, glabrous, not ciliate; flowers 4-merous, pink. Male inflorescences: pedicels ca. 2 mm, glabrous; bracteoles 2, subbasal, ovate-deltoid, glabrous, not ciliate; calyx patelliform, ca. 2 mm in diam., deeply 4-lobed, lobes ovate, not ciliate; corolla rotate, ca. 5 mm in diam., petals oblong, ca. 2 mm, basally slightly connate; stamens 4, shorter than petals, anthers ovoid; rudimentary ovary subglobose, apex rounded. Female inflorescences: pedicels ca. 1 mm, glabrous; calyx as in male flowers; petals free, ovate, ca. 2 mm; staminodes ca. 2/3 as long as petals, sterile anthers cadulate; ovary ovoid, ca. 1.5 mm in diam., style evident, stigma capitulate, 4-lobed. Inflorescences: 1(0–2)-fruited; fruiting pedicels ca. 2 mm. Fruit red, globose, ca. 5 mm in diam.; persistent calyx explanate, quadrangular; persistent stigma thickly discoid, 4-lobed; pyrenes 4, oblong, ca. 4 mm, ca. 2 mm in diam., abaxially longitudinally palmately striate and sulcate, laterally striate and slightly rugose, endocarp woody. Fl. Jun–Jul, fr. Aug–Nov. 2n = 36*.

**Abies** forests; 3000–4000 m. W Sichuan, SE Xizang (Mêdog), NW Yunnan (Gongshan) [Bhutan, India, N Myanmar, Nepal].


小圆叶冬青 xiao yuan ye dong qing

**Ilex intricata** J. D. Hooker var. oblata W. E. Evans; **I. oblata** (W. E. Evans) H. F. Comber.

Trees evergreen, small, 3–5 m tall, glabrous throughout. Branchlets brown or gray, terete; young ones longitudinally ridged and sulcate, ridges densely corky verruculose; old branchlets smooth, nearly not verruculose; terminal buds narrowly ovoid; bud scales glabrous or puberulent. Leaves on first to third year’s branchlets; petiole 4–5 mm, slender, narrowly sulcate; leaf blade broadly elliptic, rarely broadly obovate or broadly ovate, 0.5–1.7 × 0.5–1.2 cm, papery, both surfaces glabrous, midvein impressed adaxially, lateral veins 3 or 4 pairs, and reticulate veins slightly raised abaxially, impressed adaxially, base obtuse or cuneate, margin slightly reflexed, with 4–9 pairs of teeth, apex obtuse-rounded, acumen. Inflorescences: 1-flowered cymes, solitary or few fascicled, fascicles 2- or 3-flowered, axillary on second year’s branchlets. Male inflorescences: pedicels ca. 4 mm; bracteoles 2, subbasal; calyx patelliform, ca. 2 mm in diam., deeply 4-lobed, lobes suborbicular, glabrous, not ciliate; corolla greenish, rotate, ca. 4 mm in diam., petals 4, ovate, ca. 2 mm, glabrous, not ciliate, basally slightly connate; stamens 4, shorter than petals, anthers ovoid; rudimentary ovary globose, apex rounded. Female flowers not known. Inflorescences: 1– or 2-fruiting; fruiting pedicels 2.5–3 mm; bracteoles 2, basal, narrowly ovate, not ciliate. Fruit red, subglobose, 3–3.5 mm in diam.; persistent calyx explanate, subquadangular, 4-lobed, lobes subrounded, glabrous; persistent style evident, stigma discoid, 4-lobed; pyrenes 4, ellipsoidal, ca. 3 mm, ca. 1.5 mm in diam., both ends obtuse, abaxially convex, longitudinally 3- or 4-striate, nearly smooth, laterally smooth, endocarp leathery. Fl. May–Aug. fr. Oct–Nov.

Broad-leaved forests, *Tsuga* forests, slopes, hills; 2000–3000 m. SE Xizang (Mêdog), W Yunnan (Fugong, Gongshan, Tengchong) [N India, N Myanmar].

毛核冬青   mao he dong qing

Trees evergreen, ca. 13 m tall. Branchlets terete, thick, glabrous, rugose, tuberculate, lenticels elliptic, leaf scars circular, both raised; current year’s branchlets longitudinally ridged and sulcate; terminal and axillary buds ovoid, large, bud scales densely puberulent. Petiole subterete, 1.5–2 cm, longitudinally narrowly sulcate, abaxially rugose, glabrous; leaf blade obovate when dry, not shiny, ovate-oblong or ovate, 7.5–9 × 4–5.5 cm, leathery, both surfaces glabrous, midvein deeply impressed adaxially, lateral veins 17 or 18 pairs, raised on both surfaces, anastomosing near margin, reticulate veins dense and evident, base rounded, margin crenulate-serrate, apex acute. Flowers not known. Infructescences: cymes of order 1 or 2, 1–3-fruited, pseudopaniculate, axillary; rachis ca. 1 cm, rugose; bracts caducous, ovate, puberulent, ciliate; fruiting pedicels 5–6 mm, glabrous or puberulent; bracteoles 2, basal. Fruit red, globose, ca. 4 mm; persistent calyx explanate, patelliform, 3–4 mm in diam., 4-lobed, lobes deltoid, ciliate; persistent stigma discoid, 4-lobed; pyrenes 4, ellipsoidal, ca. 2.5 mm, ca. 1.5 mm in diam., 4-lobed, lobes deltoid, ciliate; persistent stigma discoid. Fruit red, globose, 5(–7) mm in diam.; persistent calyx explanate, quadrangular, 2–2.5(–3.5) mm in diam.; persistent stigma thickly discoid, rarely subcapitate, 4-lobed; pyrenes 4, oblong, 3.5–4.5 mm, 2–2.5 mm in diam., abaxially convex or slightly flattened, palmately striate and sulcate, laterally rugose striate-sulcate, endocarp woody. Fl. Mar–Jul, fr. Aug–Nov.

Forests, mixed woods, shrub forests, azalea forests, hill slopes; 2000–3700 m. Sichuan, Xizang, Yunnan [N Myanmar].

96. Ilex delavayi Franchet, J. Bot. (Morot) 12: 255. 1898.

陷脉冬青   xian mai dong qing

Shrubs or trees, evergreen, 1–9 m tall, glabrous throughout. Branchlets gray, terete, glabrous or pubescent, longitudinally ridged, verruculose along ridges, or smooth or shallowly plicate-sulcate; leaf scars flat, deltoid-elliptic, lenticels absent; terminal buds conical, glabrous, unfolding at anthesis. Leaves on first to second year’s branchlets; petiole (5–)10–15 mm, abaxially rugose, adaxially shallowly sulcate, distal half narrowly winged by decurrent leaf base; leaf blade green, elliptic-lanceolate or obovate-elliptic, linear-lanceolate, elliptic, oblong, ovate-oblong, or oblong-elliptic, (2–)4–5(–8) × (0.7–)1–2(–2.2) cm, subleathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 5–7 pairs, raised abaxially, impressed adaxially, anastomosing near margin, reticulate veins raised abaxially, impressed adaxially, base cuneate or acute, margin crenulate-serrate, apex obtuse or acute. Inflorescences: cymes, fascicled, axillary on second year’s branchlets; flowers greenish, 4-merous. Male inflorescences: cymes of order 1 or 2, 1–3-flowered, fascicles often umbelliform, ± stalked; axis ca. 3.5 mm; bracts ovate, glabrous, apex acute; pedicels ca. 1 mm; pedicels 1–2 mm; bracteoles 2, subbasal; calyx patelliform, ca. 2 mm in diam., deeply 4-lobed, lobes ovate-deltoid, ca. 1 × 1.25 mm, glabrous, not ciliate, apex obtuse or acute; corolla rotate, ca. 5 mm in diam., petals 4, obovate, ca. 2 × 2 mm, basally slightly connate; stamens shorter than petals, anthers ovoid; rudimentary ovary globose, apex rounded. Female inflorescences: 1-flowered cymes, fascicles 2–5-flowered, pedicels 2–4(–6) mm; calyx as in male flowers; petals free, ovate, ca. 2 mm; staminodes ca. 1/2 as long as petals, sterile anthers cordate; ovary ovoid, ca. 2 mm, ca. 1.5 mm in diam., apex truncate, stigma discoid. Fruit red, globose, rarely depressed globose, 5(–7) mm in diam.; persistent calyx explanate, quadrangular, 2–2.5(–3.5) mm in diam.; persistent stigma thickly discoid, rarely subcapitate, 4-lobed; pyrenes 4, oblong, 3.5–4.5 mm, 2–2.5 mm in diam., abaxially convex or slightly flattened, palmately striate and sulcate, laterally rugose striate-sulcate, endocarp woody. Fl. May–Jul, fr. Aug–Nov.

Forests, mixed woods, shrub forests, azalea forests, hill slopes; 2800–2900 m. S Yunnan (Jingdong).

96a. Ilex delavayi var. delavayi

陷脉冬青(原变种)   xian mai dong qing (yuan bian zhong)

Shrubs or trees, glabrous throughout. Branchlets ridged, verruculose along ridges. Leaf blade elliptic-lanceolate or obovate-elliptic, (2.5–)4–5(–7) × 1–2(–2.2) cm. Fruit globose, ca. 5 mm in diam.; persistent stigma thickly discoid. Fl. May–Jun, fr. Aug–Nov.


高山陷脉冬青   gao shan xian mai dong qing

Branchlets glabrous, not verruculose, shallowly plicate-sulcate. Leaf blade ovate-oblong or oblong-elliptic, 3–8 × 1.5–2.5 cm, midvein, lateral veins, and reticulate veins deeply impressed adaxially. Female flower: pedicel 4–6 mm, glabrous. Fl. Jun, fr. Sep–Nov.

Mixed woods, azalea forests, shrub forests; 2500–3600 m. W Sichuan, W Yunnan [N Myanmar].

96c. Ilex delavayi var. comberiana

陷脉冬青(变种) li liang xian mai dong qing

Branchlets pubescent, verruculose. Leaf blade oblong or elliptic, 2–5(–7) × 1–2 cm. Fruit globose, ca. 7 mm in diam.; fruiting pedicel 2–3.5 mm; persistent stigma thickly discoid or subcapitate. Fl. May–Jul, fr. Sep.

● Forests, hill slopes; (2600–)2800–3600 m. NW Yunnan.

线叶陷脉冬青  xian ye xian mai dong qing

Branchlets verruculose, pubescent. Leaf blade linear-lan-
ceolate, 2–8 × 0.7–1.3 cm. Fruit solitary or paired, depressed

• Forests; ca. 3000 m. W Yunnan.

96e. Ilex delavayi var. muliensis W. P. Fang & Z. M. Tan, J.

木里陷脉冬青  mu li xian mai dong qing

Branchlets smooth, not verruculose. Fruit solitary or in
fasciculate infructescences; axis 1–1.5 mm; fruiting pedicel 2–3
mm.

• Forests, hill slopes; ca. 3500 m. SW Sichuan (Mul).


西藏冬青  xi zang dong qing

Shrubs evergreen, erect, ca. 1 m tall. Current year’s
branchlets brown, turning tawny, glabrous, longitudinally angu-
lar, scarcely lenticellate; second year’s branchlets castaneous;
terminal buds conical, glabrous. Petiole 2–3 mm, adaxially
longitudinally sulcate, glabrous; leaf blade abaxially greenish,
adaxially green, shiny, oblong or oblong-oblancoceolate, 2–3 ×
0.7–1 cm, leathery, both surfaces glabrous, midvein, lateral, and
reticulate veins raised abaxially, impressed adaxially, lateral
veins 4 pairs, base cuneate, margin crenate-serrate, apex obtuse.
Male flowers not known. Female inflorescences: 1-flowered
cymes, fasciculate, axillary on second year’s branchlets; pedicels
ca. 5 mm; bracteoles 2, basal, ovate, membranous; flowers
4-merous; calyx 4-lobed, lobes ovate-deltoid, glabrous; corolla
rotate, petals ovate, basally slightly connate; ovary globose,
4-loculed, stigma discoid, 4-lobed. Fl. Jun–Jul, fr. unknown.

• Abies forests, hill slopes; ca. 3200 m. SE Xizang.

44: 202. 1875.

锡金冬青  xi jin dong qing

Ilex hookeri var. coccinea H. F. Comber.

Trees evergreen, 10–17 m tall. Branchlets gray-black or
reddish yellow-brown; bark pale yellowish when dry, thick,
longitudinally angular, glabrous; second year’s branchlets with
expanded, raised elliptic or oblong lenticells, leaf scars slightly
raised, semicircular; terminal buds ovoid, 1.5–2.5 cm, ca. 1.3
mm in diam.; buds scales ovate or broadly ovate, 1.5–2.5 cm, abax-
ially densely puberulent, margin often membranous, apex ob-
tuse, axillary buds ovoid, ca. 5 mm in diam., buds scales ciliate.
Leaves on first to second year’s branchlets; petiole 2–5 cm,
abaxially rugose, adaxially sulcate or broadly so, distal half
narrowly winged by decurrent leaf base; leaf blade olivaceous
when dry, elliptic, obovate-elliptic, or oblongceolate, (8–)10–
15.5–20 × 3–5.5–(6.2) cm, thinly leathery, both surfaces gla-
rous, midvein broadly and deeply impressed adaxially, longi-
tudinally striate when dry, lateral veins 12–15 pairs, nearly
parallel, raised abaxially, flat or slightly raised adaxially, furcate
and anastomosing near margin, reticulate veins conspicuous
abaxially, obscure adaxially, base rounded or obtuse, margin
slightly reflexed, densely serrulate, apex acuminate or acute.
Inflorescences: cymes, fasciculate, pseudopaniculate or pseudo-
racemose, axillary on second year’s branchlets. Male inflo-
rescences: cymes of order 2 or 3, 3–7-flowered, fasciculate;
peduncles very short; bracts linear-lanceolate, ca. 1.5 mm, ciliate;
pedicels 2–3 mm, with bracteoles; flowers 4-merous; calyx
patelliform, 2–2.5 mm in diam., lobes deltoid-ovate, apex obtuse; petals 4, oblange-ovate, ca. 2.5 ×
2 mm, basally slightly connate; stamens slightly shorter than
petals, anthers oblong, ca. 1 mm; rudimentary ovary subglobose,
c. 1 mm, apex obtuse, slightly 4-lobed. Female inflorescences:
1-flowered cymes; pedicels 6–8 mm; bracteoles 2, subbasal,
broader deltoid; calyx and corolla as in male flowers; staminodes
c. 1/2 as long as petals, sterile anthers sagittate; ovary ovoid, ca.
2 mm, ca. 1.5 mm in diam., apex truncate, stigma discoid,
4-lobed. Fruit globose, ca. 6 mm in diam.; persistent calyx
explanate, ca. 4 mm in diam.; persistent stigma thinly discoid,
4-lobed; pyrenes 4, ellipsoidal, ca. 5 mm, ca. 2 mm in diam.,
abaxially and laterally palmately striate and deeply sulcate, pi-

Broad-leaved forests, hill slopes; 2100–3000 m. Xizang (Chumbi Valley), NW Yunnan [Bhutan, India, N Myanmar].

44: 202. 1875.

锡金冬青  xi jin dong qing
fructing pedicel 6–10 mm, glabrous; persistent calyx expanate, subquadrangular, lobes deltoid, ciliate; persistent stigma discoid, 4-lobed; pyrenes 4, ovoid-triangular, 2.5–3 mm, 1.5–1.8 mm in diam., abaxially convex, 3–5-iliate and shallowly sulcate, laterally striate, sparsely pubescent or glabrous, endocarp stony. Fl. 4-lobed; pyrenes 4, ovate-triangular, 2.5–3 mm, 1.5–1.8 mm in diam., abaxially slightly raised, palmately 6- or 7-lobed, sulcate, or longitudinally ridged and oblong-ellipsoidal, 3.5–4.5 cm, 2.5–3 mm in diam., abaxially slightly ciliate, apex obtuse or rounded. Fruit globose, 6–7 mm in diam.; pyrenes 4 (or 5), 2–4 mm. Fl. May–Jun, fr. Sep–Nov.


**101. Ilex melanotricha** Merrill, Brittonia 4: 101. 1941.

Trees evergreen, 5–10 m tall. Branchlets brown or deep brown, slightly thick, longitudinally ridged and sulcate, glabrous; second year’s branchlets with raised deltoid-rounded leaf scars, lenticels absent; terminal buds narrowly conical, bud scales ciliate, apically acute. Leaves on first to second year’s branchlets; petiole 1–1.7 cm, abaxially subrounded, adaxially shallowly sulcate, glabrous, narrowly winged by deciduous leaf base; leaf blade abaxially greenish, adaxially deep green, not shiny, ob lanceolate or oblong-elliptic, 6.5–13 × 2.5–5 cm, subleathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 10–13 pairs, evident abaxially, obscure adaxially, reticulate veins evident abaxially, indistinct adaxially, base cuneate or obtuse, margin serrulate, teeth black, apex acuminate. Infructescences: cymes, pseudofrutescences, 6–10 mm, glabrous; bracts caducous, ovate, ciliate; peduncles 2–3 mm, puberulent; pedicels 3–4 mm, puberulent; bracteoles 2, submedian, ob lanceolate, ciliate; flowers fragrant, greenish, 4-merous. Male inflorescences: cymes of order 2, 3-flowered; peduncles 1–1.5 mm; pedicels 2–5 mm; bracteoles 2, basal; calyx patelliform, ca. 2 mm in diam., deeply 4-lobed, lobes deltoid, minutely ciliate, apex obtuse or rounded; petals 4, oblong, ca. 2 × 1.5 mm, basally slightly ciliate; stamens rather shorter than petals, anthers oblong; rudimentary ovary conical, apex obtuse, 4-lobed. Female inflorescences: 1-flowered cymes; pedicels 3–4 mm; bracteoles 2, submedian; calyx as in male flowers; petals free, ovate, ca. 2 mm; staminodes ca. 3/4 as long as petals, sterile anthers cordate; ovary ovoid, ca. 2 mm, ca. 1.5 mm in diam., glabrous, apex truncate, stigma discoid. Infructescences: fruiting pedicels 4–5 mm. Fruit red, globose, (3–)6–7 mm in diam.; persistent calyx expanate, quadrangular 2–3 mm in diam.; persistent stigma thinly discoid; pyrenes 4 (or 5), oblong, (2–3)5–6 mm, 2.5–3 mm in diam., abaxially slightly raised, palrnately striate and sulcate, laterally striate and rugose, endocarp woody. Fl. May–Jun, fr. Sep–Nov.

Forests, hills; 800–2300(–2900) m. Guizhou, Hubei, Sichuan, SE Xizang, NE Yunnan [N Myanmar].

1a. Leaf blade ob lanceolate or oblong-lanceolate, 6–12.5 × 2–4.2 cm, lateral veins 8–15 pairs ........... 101a. var. franchetiana

1b. Leaf blade ovate or elliptic, 3–6 × 1.2–2.6 cm, lateral veins 6 or 7 pairs ........................................ 101b. var. parvifolia

**101a. Ilex franchetiana** var. franchetiana


Leaf blade ob lanceolate or oblong-lanceolate, rarely elliptic, 6–12.5 × 2–4.2 cm, lateral veins 8–15 pairs, base cuneate or obtuse, apex acuminate or acute. Fruit globose, 6–7 mm in diam.; pyrenes 4, 5–6 mm. Fl. May–Jun, fr. Sep–Nov.

Broad-leaved forests, mixed forests, hills; 800–2300(–2900) m. Guizhou, Hubei, Sichuan, SE Xizang, NE Yunnan [N Myanmar].


**Ilex fargesii** Franchet var. parvifolia (S. Y. Hu) S. Andrews.

Leaf blade ovate or elliptic, 3–6 × 1.2–2.6 cm, lateral veins 6 or 7 pairs, base cuneate, margin serrate, apex shortly acuminate. Fruit globose, 3–5 mm in diam.; pyrenes 4 or 5, 2–4 mm.
● Forests, hills; 1800–2300 m. W Sichuan.

102. Ilex fargesii Franchet, J. Bot. (Morot) 12: 255. 1898.

狭叶冬青 xia ye dong qing

Trees evergreen, 4–8 m tall, or shrubs to 4 m tall, glabrous throughout. Branchlets brown or castaneous, terete, rugose; leaf scars deltoid and lenticels convex; young branchlets green, longitudinally angulate-ridged; terminal buds narrowly conical, apically acute. Petiole 0.8–1.6 cm, adaxially sulcate; leaf blade adaxially green, elliptic to elliptic-lanceolate, oblong-lanceolate, linear-oblong-lanceolate, or linear, 5–13 (–16) × (0.8–)1.5–2.5 (–3.7) cm, subleathery, midvein slightly impressed adaxially, lateral veins 8–10 pairs, raised abaxially, evident adaxially, reticulate veins evident abaxially, obscure adaxially, base cuneate or obtuse, margin sparsely serrulate in distal half or serrate in distal 2/3, apex acuminate. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets. Male inflorescences: cymes of order 2, 3-flowered; peduncles ca. 1 mm; bracts deltoid, membranous, ciliate; petioles ca. 2 mm; bracteoles 2, subbasal, deltoid or broadly deltoid, ciliate; flowers white, fragrant, 4-merous; calyx petalliform, ca. 2 mm in diam., 4-lobed, lobes suborbicular, ca. 1 mm, sparsely ciliate; corolla ca. 5 mm in diam., petals 4, obovate-oblong, 2–2.5 × ca. 1.5 mm, ciliate, basally slightly connate; stamens ca. 3/4 as long as petals, anthers oblong; rudimentary ovary ovoid-conical, apex obtuse, minutely 4-lobed. Female inflorescences: 1-flowered cymes; pedicels 2–3 mm; bracteoles 2 below middle; calyx as in male flowers; petals free, oblong, ca. 2 mm; staminodes shorter than petals, sterile anthers sagittate; ovary ovoid, 1.2–2 mm in diam., stigma discoid. Fruit red, globose, ca. 6 mm in diam., longitudinally striate; fruiting pedicels 5–7 mm; persistent calyx ca. 2 mm in diam., shallowly 4-lobed, lobes deltoid, ciliate; persistent stigma discoid; pyrenes 4, oblong, ca. 1 mm, ca. 1.5 mm in diam., abaxially convex, palmately striate and sulcate, laterally longitudinally striate and sulcate or sometimes reticulately striate and sulcate, endocarp woody. Fl. May, fr. Oct.-Sep.

● Forests, shrubs and forests on mountain slopes; 1500–3000 m. S Gansu, W Hubei, Hunan, S Shaanxi, Sichuan.

102a. Ilex fargesii var. fargesii

狭叶冬青(原变种) xia ye dong qing (yuan bian zhong)

Ilex fargesii f. megalophylla Loesener.

Leaf blade oblong-lanceolate or linear-oblong-lanceolate, 5–13 (–16) × 1.5–2.5 (–3.7) cm, upper margins serrate.

● Forests, shrubs and forests on mountain slopes; 1500–3000 m. S Gansu (Wenxian), W Hubei, Hunan, S Shaanxi, Sichuan.


线叶冬青 xian ye dong qing

Leaf blade linear-lanceolate or linear, 7–12 × 0.8–1.2 cm.

● Forests on mountain slopes; 1700–1800 m. S Gansu (Huixian), S Shaanxi (Foping, Liuba).


短狭叶冬青 duan xia ye dong qing

Evergreen shrubs to 4 m tall, usually glabrous. Leaf blade elliptic to elliptic-lanceolate, 6–7.3 × 1.9–2.5 cm, margin serrate in distal 2/3.

● W Hubei.


纤枝冬青 xian zhi dong qing

Trees evergreen, small, ca. 8 m tall. Young branchlets castaneous or black, shiny, subterete, slender, irregularly striate, pubescent; second year’s branchlets terete, glabrescent; terminal buds lanceolate, ferruginous pubescent. Petiole ca. 1 cm, pubescent, adaxially narrowly sulcate; leaf blade olivaceous when dry, elliptic or oblong-elliptic, 7–9 × 2.5–3.5 cm, leathery, both surfaces glabrous, sometimes strigose, midvein impressed axially, lateral veins 7–9 pairs, slightly raised on both surfaces, anastomosing near margin, reticulate veins slightly raised abaxially, inconspicuous adaxially, base obtuse or acute, margin crenulate-serrate, apex abruptly caudate-acuminate, acumens 1–1.5 cm. Flowers not known. Infructescences: 1-fruited cymes, fasciculate or pseudoracemose, axillary, fascicles 4- or 5-fruited; petals free, oblong, ca. 2 mm; staminodes shorter than petals, sterile anthers sagittate; ovary ovoid, 1.2–2 mm in diam., stigma discoid. Fruit red, globose, ca. 5 mm in diam., longitudinally striate; fruiting pedicels 1–1.5 cm, densely pubescent; persistent calyx ca. 2 mm in diam., shallowly 4-lobed, lobes deltoid, ciliate; persistent stigma discoid; pyrenes 4, oblong, ca. 3.5 mm, ca. 2 mm in diam., abaxially convex, palmately striate and sulcate, laterally striate and sulcate, endocarp stony. Fl. unknown, fr. Oct.

● Evergreen broad-leaved forests; 2300–2900 m. NW Yunnan (Gongshan).


毛枝冬青 mao zhi dong qing

Shrubs evergreen, 1.6–2.5 m tall. Branchlets yellowish brown when dry, terete, slender, longitudinally angular and sulcate, densely shortly puberulent; leaf scars slightly raised; lenticels absent; terminal buds narrowly conical, densely shortly puberulent, apically scarcely acuminate. Petiole 5–8 mm, sulcate, abaxially transversely rugose, adaxially puberulent; leaf blade oblong or oblong-elliptic, rarely ovate, 5–9 × 2–3.5 cm, papery, both surfaces glabrous, midvein impressed adaxially, lateral veins 6–8 pairs, anastomosing near margin, slightly raised...

**Shrubs evergreen**, ca. 3 m tall. Branchlets, petioles, leaf midvein, inflorescences, ovary, and fruit pubescent. Branchlets gray-black, terete, slender, longitudinally plicate-serrate; terminal buds conical, bud scales densely pubescent. Petiole 5–7 mm, abaxially rugose, adaxially shallowly sulcate; leaf blade abaxially greenish, adaxially dark green, ovate-elliptic, 4–7 × 1.3–2.5 cm, leathery, abaxially sparsely pubescent, adaxially glabrous except on midvein, midvein impressed and pubescent adaxially, lateral veins 7 or 8 pairs, evident abaxially, obscure adaxially, reticulate veins obscure, base obtuse or rounded, margin crenate-serrate, teeth black, apex shortly acuminate. Flowers not known. Infructescences: 1-fruit cymes, few fascicled, rarely solitary, fascicles 2-fruit, axillary on current year’s branchlets; bracts narrowly triangular-ovate, 1–1.5 mm, puberulent; fruiting pedicels 5–7 mm, thickening distally, longitudinally plicate-rugose, sparsely puberulent or glabrescent; bracteoles 2, basal, narrowly triangular, puberulent. Fruit globose, ca. 5 mm in diam.; persistent calyx explanate, patelliform, deeply lobed, minutely ciliate; persistent stigma discoid, slightly convex, lobed; pyrenes 4, obscurely striate. Fl. unknown, fr. Sep.–Oct.

- Mixed forests on mountain slopes; ca. 1600 m. S Yunnan (Jingdong).


**Trees evergreen**, 10–25 m tall. Branchlets stout, longitudinally angular and sulcate, lenticellate; young branchlets puberulent or glabrous; second year’s branchlets terete; leaf scars raised, deltoid; terminal buds conical, puberulent or glabrous, bud scale margin serrulate, ciliate. Petiole 1–1.5 cm; leaf blade abaxially greenish, adaxially green, oblong or broadly elliptic, 8–10 × 3–5 cm, papery, or thinly leathery, abaxially glabrous, axially glabrous or only puberulent on midvein, midvein impressed adaxially, lateral veins 7 or 8 pairs, raised axially, evident adaxially, reticulate veins evident abaxially, obscure axially, base obtuse, margin slightly reflexed, very obscurely crenulate, apex abruptly acuminate. Flowers not known. Infructescences: 1-fruit cymes, few fascicled, rarely solitary, fascicles 2-fruit, axillary on current year’s branchlets; bracts narrowly triangular-ovate, 1–1.5 mm, puberulent; fruiting pedicels 5–7 mm, thickening distally, longitudinally plicate-rugose, sparsely puberulent or glabrescent; bracteoles 2, basal, narrowly triangular, puberulent. Fruit globose, ca. 5 mm in diam.; persistent calyx explanate, patelliform, deeply lobed, minutely ciliate; persistent stigma discoid, slightly convex, lobed; pyrenes 4, obscurely striate. Fl. unknown, fr. Aug.

- Evergreen broad-leaved forests, mountain slopes; ca. 1600 m. SE Xizang (Mêdog).


**Trees or shrubs**, evergreen. Branchlets stout, longitudinally ridged and sulcate; young branchlets puberulent; terminal buds conical, puberulent, bud scales ciliate. Petiole 8–10 mm, adaxially narrowly sulcate, puberulent on ridge, abaxially puberulent or glabrescent; leaf blade green, oblong, broadly lanceolate, or narrowly elliptic, 7–9 × 2–3.2 cm, papery, midvein impressed adaxially, minutely puberulent on both surfaces, lateral veins 9 or 10 pairs, raised abaxially, evident adaxially, anastomosing near margin, base broadly cuneate, margin undulate, sparsely serrulate, apex acuminate to long acuminate. Male inflorescences: cymes of order 2 or 3, 3–5-flowered, pseudopaniculate, axillary on current year’s branchlets; rachis 3–6 mm, puberulent or glabrous; peduncles 1–2 mm; pedicels 2–3.5 mm, puberulent throughout; bracteoles 1 or 2, subbasal, puberulent, ciliate; calyx deeply 4-lobed, lobes suborbicular, sparsely ciliate; petals 4, oblong, ca. 3 × 2 mm, basally slightly conate; stamens 4, slightly shorter than petals, anthers elliptic; rudimentary ovary ovoid-globose, apex obtuse, stigma discoid, 4-lobed. Female flowers and fruit not known. Fl. Apr., fr. unknown.

- Forests; ca. 2500 m. SE Yunnan (Jinping).


**Trees evergreen**, 10–25 m tall. Branchlets stout, longitudinally angular and sulcate, lenticellate; young branchlets puberulent or glabrous; second year’s branchlets terete; leaf scars raised, deltoid; terminal buds conical, puberulent or glabrous, bud scale margin serrulate, ciliate. Petiole 1–1.5 cm; leaf blade abaxially greenish, adaxially green, oblong or broadly elliptic, 8–10 × 3–5 cm, papery, or thinly leathery, abaxially glabrous, axially glabrous or only puberulent on midvein, midvein impressed adaxially, lateral veins 7 or 8 pairs, raised abaxially, evident adaxially, reticulate veins evident abaxially, obscure axially, base obtuse, margin slightly reflexed, very obscurely crenulate, apex abruptly acuminate. Flowers not known. Infructescences: 1-fruit cymes, few fascicled, rarely solitary, fascicles 2-fruit, axillary on current year’s branchlets; bracts narrowly triangular-ovate, 1–1.5 mm, puberulent; fruiting pedicels 5–7 mm, thickening distally, longitudinally plicate-rugose, sparsely puberulent or glabrescent; bracteoles 2, basal, narrowly triangular, puberulent. Fruit globose, ca. 5 mm in diam.; persistent calyx explanate, patelliform, deeply lobed, minutely ciliate; persistent stigma discoid, slightly convex, lobed; pyrenes 4, obscurely striate. Fl. unknown, fr. Aug.

- Evergreen broad-leaved forests, mountain slopes; ca. 1600 m. SE Xizang (Mêdog).
puberulent, ciliate; persistent stigma thinly discoid, 4-lobed; pyrenes 4, ellipsoid, ca. 4.5 mm, ca. 2.5 mm in diam., abaxially and laterally paltmately striate and sulcate. Fl. unknown, fr. Oct.

1a. Young branchlets, terminal buds, and leaf adaxial midvein puberulent .......... 108a. var. chartaceaefolia

1b. Young branchlets, terminal buds, and leaf adaxial midvein glabrous .......... 108b. var. glabra

108a. Ilex chartaceaefolia var. chartaceaefolia

108b. Ilex chartaceaefolia var. glabra


异齿冬青 yi chi dong qing

Ilex latifolia Thunberg var. subrugosa (Loesener) Hu & T. Tang.

Trees evergreen, ca. 10 m tall. Branchlets terete, longitudinally striate and sulcate, densely yellow-brown pubescent, lenticels absent, leaf scars siermicircular, raised; terminal buds narrowly conical, apically acuminate, bud scales densely pubescent. Petiole 4–10 mm, abaxially subrounded and rugose, adaxially narrowly and deeply sulcate, pubescent; leaf blade abaxially greenish, adaxially deep green, slightly shiny, oblong-elliptic or lanceolate, 4–10 × 1.5–2.5(–3) cm, leathery, abaxially glabrous, adaxially glabrous except on midvein, midvein impressed and pubescent adaxially, lateral veins 5–8 pairs, slightly raised abaxially, flattened or slightly impressed adaxially, reticulate veins obscure adaxially, base cuneate or obtuse, margin sparsely crenulate or coarsely sharply serrate, apex acuminate. Inflorescences: cymes, fasciculate or pseudoracemose, axillary on second year’s branchlets; rachis puberulent or glabrous; bracts ovate, 2–3 mm, puberulent; flowers yellowish, fragrant. Male inflorescences: cymes of order 1(or 2), 1(–3)-flowered, fasciculate; pedicels 2–3 mm, pubescent; bracteoles 2, median, ca. 2 mm; calyx patelliform, ca. 2 mm in diam., puberulent, 4-lobed, lobes suborbicular, ciliate; corolla 6–7 mm in diam., petals 4, oblong, ca. 3 × 2 mm, basally slightly connate; stamens ca. as long as petals; rudimentary ovary ovoid, apex obtuse, obscurely lobed. Female inflorescences: 1-flowered cymes, pseudoracemose, puberulent; rachis 3–5 mm; pedicels 4–6 mm, puberulent; bracteoles 2, basal, lanceolate, puberulent; calyx patelliform, 4-lobed, lobes deltoid, ciliate; petals free, obovate, ca. 3 × 1.75 mm, not ciliate; stamens ca. 2/3 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 2 mm, style evident, stigma thickly discoid or capitate. Fruit red, subglobose-ellipsoid, 5–6 mm in diam., tuberculate; persistent calyx explanate, subquadangular, lobes ciliate; persistent stigma thickly discoid, 4-lobed; pyrenes 4, obovate, ca. 3.5 mm, ca. 2 mm in diam., pointed at smaller end, abaxially palmately longitudinally striate and sulcate, laterally longitudinally striate and shallowly sulcate, endocarp woody. Fl. Apr.–May, fr. Sep.–Oct.

Trees or shrubs, evergreen, 3–12 m tall. Young branchlets brown, slender, striate, puberulent or glabrescent. Petiole 5–10 mm, adaxially sulcate, puberulent; leaf blade green or olivaceous when dry, oblong, elliptic-oblong, or ovate-elliptic, 5–10 × 2–4 cm, leathery or thinly leathery, both surfaces glabrous except on midvein, midvein adaxially raised or subflattened, or proximal half raised and gradually subflattened upward, lateral veins 7–9 pairs, raised on both surfaces, reticulate veins evident abaxially, inconspicuous adaxially, base rounded or obtuse, margin sparsely serrulate or subentire, apex acuminate, acumen 6–10 mm. Inflorescences: cymes of order 1 or 2, 1–3-flowered, fasciculate or pseudomonoceme, axillary, puberulent. Male inflorescences: peduncles ca. 3 mm; bracts deltoid-ovate; pedicels 2–3 mm, with bracteoles below middle; flowers 4-merous; calyx cup-shaped, lobes ovate or suborbicular; petals oblong, ciliate, basally ca. 1/4 connate; stamens shorter than petals; rudimentary ovary tuberculate, apex 4-lobed. Female inflorescences: peduncles 1–2 mm; pedicels 3–4 mm; bracteoles basal, deltoid-ovate; flowers 4-merous; calyx cup-shaped, lobes broadly deltoid; petals deltoid-oblong, ca. 2 mm, puberulent, ciliate; staminodes ca. as long as or shorter than petals; ovary ovoid, tuberculate, stigma capitate, shortly 4-lobed. Fruit (immature) ellipsoid; persistent stigma thickly discoid or capitate. Fl. Apr–May, fr. Oct–Nov.


铁仔冬青 tie zi dong qing

Shrubs or small trees, evergreen, ca. 4 m tall. Branchlets slender, longitudinally stricate, pubescent. Stipules persistent, minute; petiole 3–5 mm, puberulent, longitudinally sulcate; leaf blade olivaceous or brown when dry, not shiny, lanceolate, rarely narrowly elliptic, 3–5.5 × 0.9–1.5 cm, subleathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 5 or 6 pairs, obscure on both surfaces, base acute or acuminate, margin bluntly crenulate-serrate, apex obtuse. Inflorescences: 1-flowered cymes, fasciculate, axillary. Male inflorescences: pedicels ca. 2 mm, glabrous; bracteoles 2, basal; flowers yellow-white, 4-merous; calyx patelliform, ca. 2 mm in diam., lobes ciliate; corolla rotate, ca. 4 mm in diam., petals ovate, ca. 1.5 mm; stamens ca. as long as petals, anthers ovoid; rudimentary ovary subglobose. Female flowers not known. Fruit red when dry, subglobose-ellipsoid, ca. 5.5 mm, ca. 4.5 mm in diam.; fruiting pedicel ca. 2 mm, sparsely puberulent; persistent calyx explanate, quadrangular, ca. 2.5 mm in diam., ciliate; persistent stigma thickly discoid, 4-lobed; pyrenes 4, ca. 4.5 mm, ca. 3 mm in diam., abaxially pellately striate, not sulcate, sparsely puberulent, endocard woody. Fl. Oct–Dec, fr. Nov-Jan.

- Forests on mountain slopes; 800–1000 m. Guangdong (Gaoyao, Ruyuan), Guangxi (Shanglin, Wuming), Hainan (Baisha).


平南冬青 ping nan dong qing

Shrubs or small trees, evergreen, to 12 m tall. Branchlets gray, terete, densely pubescent, longitudinally stricate and sulcate when young, leaf scars semicircular, lenticels absent; terminal buds densely pubescent. Stipules persistent, minute, apically acute; petiole 5–7 mm, densely pubescent; leaf blade abaxially greenish, adaxially deep green, slightly shiny, oblong or oblong-elliptic, 5–12 × 2–3.2 cm, leathery, midvein raised and glabrous abaxially, impressed and pubescent adaxially, lateral veins 6–8 pairs, evident on both surfaces, reticulate veins obscure on both surfaces, base obtuse, margin entire or obscurely crenulate-serrate, apex acuminate, acumen 8–14 mm. Flowers not known. Infructescences: cymes 1-fruited, fasciculate, axillary on second year's branchlets; basal bracts deltoid, thickly leathery, pubescent, ciliate, apex acute; basal appendage stipulelike; fruiting pedicels ca. 2 mm; bracteoles 2, basal. Fruit red, globose, ca. 6 mm in diam.; persistent calyx orbicular, ca. 2 mm in diam., lobes orbicular, ciliate; persistent stigma thickly discoid, convex, style very short; pyrenes 4, oblong, 4.4–5.5 mm, 2–2.5 mm in diam., abaxially longitudinally 1-sulcate, palrnately striate and sulcate, laterally rugose and pitted, endocard stony. Fl. Apr–May, fr. Oct–Nov.

- Mixed mountain forests; 200–600 m. Guangdong (Deqing, Fengkai), Guangxi (Longjin, Pingnan, Rongshui).


风庆冬青 feng qing dong qing

Trees evergreen, 4–7 m tall. Branchlets brown when dry, terete; current year's branchlets longitudinally angular and sulcate, densely puberulent; second year's branchlets nearly glabrous. Petiole 5–8 mm, narrowly sulcate, densely puberulent; leaf blade abaxially greenish, adaxially green, shiny or not, oblong-elliptic, 3–6 × 1.3–2 cm, leathery, abaxially glabrous, midvein flattened or impressed, and puberulent adaxially, lateral veins 6 or 7 pairs, raised on both surfaces. Fruit (immature) ellipsoid; persistent stigma thickly discoid or capitate. Fl. Apr–May, fr. Oct–Nov.

- Forests, forest margins; 2700–2800 m. W Yunnan (Fengqing, Lincang, Longling).


昆明冬青 kun ming dong qing

Shrubs evergreen, 2–4 m tall. Branchlets black or black-brown when dry, terete, longitudinally angular and sulcate, glabrous; leaf scars slightly raised, deltoid, lenticels absent;
terminal buds ovoid-conical, glabrous. Petiole 5–9 mm, abaxially transversely rugose, adaxially slightly flattened to broadly sulcate, glabrous; leaf blade green, olive or brown when dry, obovate-oblong or obovate-lanceolate, rarely elliptic, 4.5–7.5(–8) × 1.4–2.7(–3) cm, thinly leathery or papery, both surfaces glabrous, midvein impressed adaxially, lateral veins 7–9 pairs, raised abaxially, flattened and evident adaxially, forked and anastomosing near margin, reticulate veins evident abaxially, base broadly cuneate, margin sparsely serrulate, apex abruptly acuminate or acuminate. Flowers not known. Inflorescences: 1-flowered cymes, fasciculate, axillary on current year’s branchlets; persistent scales of flower buds glabrous; bracts deltoid, apex acute, keeled, ciliate; flowers 4-merous. Male inflorescences: pedicels 2–3 mm; bracteoles 2 basal; calyx discoid, ca. 2 mm in diam., 4-lobed, lobes small, ciliate; corolla 6–7 mm in diam., petals 4, ca. 3 mm, basally slightly connate, ciliate; stamens ca. as long as petals, anthers ovoid, ca. 0.75 mm; rudimentary ovary subglobose-pulvinate, minute, apex truncate. Female inflorescences: pedicels ca. 5 mm at flowering; bracteoles 2 basal; calyx as in male flowers; petals free, ca. 2.5 mm; staminodes ca. 2/3 as long as petals, sterile anthers ovoid; ovary globose, stigma thickly discoid. Fruit subglobose, ca. 3 mm, ca. 4 mm in diam., longitudinally sulcate; persistent calyx explanate, quadrangular, ca. 2 mm in diam., ciliate; persistent stigma thickly discoid, evidently 4-lobed; pyrenes 4, subglobose, ca. 2.5 mm, ca. 2 mm in diam., abaxially palmately striate and sulcate, laterally rugose and pitted, endocarp stony. Fl. Mar, fr. Jul.

Thickets, palmately or axially divided, on mountains; 800–1200 m. S Guangxi (Shangsi, Shiwan Dahan) [Vietnam].


小核冬青 xiao he dong qing

Shrubs evergreen, ca. 1.7 m tall. Current year’s branchlets longitudinally angular, glabrous; second year’s branchlets terete, smooth; leaf scars slightly raised, semicircular, lenticels obscure; terminal buds conical, bud scales sulcate, glabrous. Petiole 8–13 mm, abaxially transversely rugose, adaxially narrowly sulcate, glabrous; leaf blade oblong-elliptic or oblong-lanceolate, (6–)7–12 × 2.2–4 cm, leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 8–10 pairs, raised abaxially, minutely raised or ± flat adaxially, straight and ascending, furcate and anastomosing near margin, reticulate veins evident abaxially, obscure adaxially, base obtuse or broadly cuneate, margin slightly reflexed, sparsely crenulate-serrate, teeth black, apex acuminate. Flowers not known. Inflorescences: 1-flowered cymes, pseudoracemose, axillary on current year’s branchlets; rachis 5–7 mm, stout, glabrous or minutely puberulent; fruiting pedicels 5–7 mm, minutely puberulent; bract 1 basal, ovate-deltoid; bracteoles 2, submedian. Fruit globose, 5–6 mm in diam.; persistent calyx explanate, patelliform, glabrous; persistent stigma thinly discoid, 4-lobed; pyrenes 4, broadly ellipsoidal, ca. 2.5 mm, ca. 2 mm in diam., abaxially palmately striate and 3- or 4-sulcate, laterally shallowly pitted, smooth, not striate, endocarp stony. Fl. unknown, fr. Aug–Sep.

Forests, stream banks; ca. 1700 m. NW Yunnan (Gongshan).


平和冬青 ping he dong qing

Shrubs evergreen, 2–3 m tall. Current year’s branchlets erect, slender, angular, glabrous; second year’s branchlets subterete, irregularly rugose, lenticels rounded. Petiole 4–7 mm, slender, abaxially transversely rugose, adaxially narrowly sulcate; leaf blade adaxially brown-green or dark green when dry, oblong-lanceolate or elliptic-lanceolate, 3.5–6 × 1.5–2.5 cm,
thickly leathery, both surfaces glabrous, midvein narrowly impressed adaxially, lateral veins 5–7 pairs, evident abaxially, reticulate veins evident abaxially, base cuneate, margin slightly or deeply undulate, sparsely black sertulate, apex acuminate or long acuminate. Inflorescences: 1-flowered cymes, fasciculate, fascicles 4-flowered, axillary, glabrous; pedicles very short; bracts on distal half of pedicels. Male flowers: calyx 4-lobed, lobes deltoid; petals oblong, ca. 2 mm, basally connate; stamens ca. 3 mm. Female flowers: calyx and petals as in male flowers; ovary terete, stigma discoid. Fruit purple, subglobose, ca. 5 mm in diam.; pyrenes 4, oblong, ca. 4.5 mm, ca. 3 mm in diam., abaxially palmately striate and sulcate or not, laterally irregularly striate and sulcate, endocarp stony. Fl. and fr. Dec.

- Forests or shrub forests on mountains; 1400–2000 m. Guizhou (Bijie), Yunnan (Xundian).


Trees evergreen, small, 4–15 m tall. Branchlets castaneous, terete, longitudinally angular and sulcate, glabrous, lenticels absent; terminal buds lanceolate, bud scales glabrous, ciliate. Petiole 6–9 mm, abaxially plicate-rugose, adaxially deeply sulcate, glabrous throughout; leaf blade green, oblong-ovate, 5–9 × 2–3.5 cm, leathery, both surfaces glabrous, midvein narrowly impressed adaxially, lateral veins 6 or 7 pairs, evident abaxially, obscure adaxially, base rounded or obtuse, margin serrate, apex acuminate or abruptly acuminate, acumen 1–1.2 cm. Male inflorescences: cymes of order 1 (or 2), 1(–3)-flowered, fasciculate, axillary on second and third year’s branchlets; persistent bud scales ovate, ca. 2 mm in diam., pubescent; bracts ovate-deltoid, ca. 2 mm, membranous, apex obtuse, with 2 stipulelike appendages, ciliate; peduncles ca. 1 mm, pubescent; pedicels 1–3 mm, pubescent; bracteoles 2, median, submedian, or rarely close to calyx, ovate, strongly keeled, apex obtuse, ciliate; flowers yellowish, 4-merous; calyx patelliform, ca. 2.5 mm in diam., glabrous, deeply 4-lobed, lobes suborbicular or broadly ovate, ca. 1 × 1 mm, ciliate; corolla 8–9 mm in diam., petals 4, oblong, ca. 3.5 mm, basally slightly coninate, apex sparsely ciliate; stamens ca. as long as or slightly longer than petals, anthers oblong; rudimentary ovary globose, ca. 1 mm in diam., densely puberulent on apical half. Female flowers and fruit not known. Fl. Apr, fr. unknown.

- Forests on mountain slopes; 800–1300 m. SW Hunan (Wugang).


密花冬青 mi hua dong qing

Shrubs or small trees, evergreen, 3–8 m tall. Young branchlets terete, stout, longitudinally angular and sulcate, glabrous; older branchlets longitudinally fissured, leaf scars semi-circular, lenticels absent; terminal buds narrowly conical, puberulent, apically acute. Petiole 8–10 mm, abaxially transversely rugose, adaxially sulcate, glabrous; leaf blade adaxially yellowish, obtangulate, elliptic, oblong, or obovate-oblong, 6–9(–13) × 3–4.2(–4.5) cm, thickly leathery, abaxially sparsely glandular punctate, both surfaces glabrous, midvein impressed adaxially, lateral veins 6–8 pairs, raised abaxially, slightly impressed adaxially, curved ascending, anastomosing near margin, reticulate veins evident on both surfaces, base rounded, rarely obtuse, margin recurved, sparsely crenulate, teeth black and very short, apex abruptly shortly acuminate, acumen deltoid, 3–5 mm, or long acuminate. Inflorescences: cymes, fasciculate,
axillary on second year’s branchlets; flowers yellowish, 4-merous. Male inflorescences: cymes of order 2, 3-flowered; pedicels ca. 1 mm; pedicels 1–2 mm, puberulent; bracts deltoid, puberulent, apex acute; calyx patelliform, 2–2.5 mm in diam., deeply 4-lobed, lobes deltoid, glabrous, apiculate ciliate; corolla ca. 7 mm in diam., petals oblong, ca. 3 mm, apex ciliate; stamens ca. 1/3 as long as petals, anthers ovoid; rudimentary ovary subglobose, ca. 0.5 mm in diam., apex rounded. Female inflorescences: 1-flowered cymes; pedicels 1.5–2 mm, puberulent; bracteoles 2, submedian, ovate-deltoid, puberulent; calyx patelliform, puberulent, ciliate; petals free, elliptic, ca. 2.5 mm, ciliate; staminodes ca. 2/3 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 2 mm, 1.5 mm in diam., glabrous, stigma reflexed, thickly discoid, convex. Fruit red, globose, ca. 5 mm in diam.; fruiting pedicels 1–2 mm, puberulent; bracteoles 2, basal, ovate, ciliate; flowers yellow, 4-merous; calyx patelliform, ca. 2 mm in diam., glabrous, 4-lobed, lobes deltoid-ovate, ca. 1 mm, ciliate; corolla rotate, ca. 7 mm in diam., petals 4, broadly elliptic, ca. 3 × 2 mm, basally slightly connate, apex rounded; stamens ca. 2 mm, anthers ovoid; rudimentary ovary subglobose, ca. 1 mm in diam., apex obtuse, minutely lobed. Female flowers and fruit not known. Fl. Apr-May, fr. unknown.

- Evergreen broad-leaved forests, roadsides, mountain slopes; 2500–3000 m. NW and S Yunnan.


**粗脉冬青 cu mai dong qing**

Shrubs or small trees, evergreen, 2–3.5 m tall; bark brown. Branchlets brownish or gray, subterete, striate, glabrous; terminal buds lanceolate, glabrescent. Petiole 1–1.5 cm, adaxially sulcate; leaf blade adaxially dark green, ovate-oblong or oblong, rarely broadly ovate or suborbicular, (8–)11–14 × 5–7 cm, leathery, abaxially minutely brown punctate, midvein impressed adaxially, lateral veins 7–10 pairs, anastomosing near margin, slightly raised abaxially, strongly raised adaxially, reticulate veins obscure abaxially, raised adaxially, base rounded, margin subentire, slightly reflexed, apex shortly acuminate, rarely rounded. Male inflorescences: cymes of order 1 or 2, 1–3-flowered, fasciculate, axillary; peduncles ca. 1 mm; pedicels ca. 3 mm, puberulent or glabrescent; bracteoles 2, basal; flowers 4-merous; calyx puberulent or glabrescent, lobes deltoid-ovate, ciliate; petals oblong, ca. 3.5 mm, basally slightly connate; stamens ca. 4 mm; rudimentary ovary ovoid. Female flowers not known. Inflorescences: cymes of order 1, 1-located, fasciculate, axillary; fruiting pedicels 5–6 mm, puberulent; bracteoles 2, basal. Fruit (immature) globose, ca. 4 mm in diam.; persistent calyx 4-lobed, lobes broadly deltoid or deltoid-ovate, ciliate; persistent stigma discoid or thinly discoid; pyrenes 4, broadly ovoid, ca. 3 mm, ca. 2 mm in diam., abaxially depressed at center, striate and sulcate, endocarp leathery or subwoody. Fl. Apr-May.

- Forests or thickets on mountains; 500–1000 m. Guangdong (Yangchun, Yangjiang).


**灰冬青 hui dong qing**

*Ilex cinerea* var. *faberi* Loesener.
Shrubs or small trees, evergreen, 3–6 m tall. Branchlets brown or gray, straight, longitudinally angular and sulcate; leaf scars semicircular, slightly raised, lenticels absent; current year’s branchlets minutely pubescent when young; terminal buds conical, ca. 3 mm, bud scales pubescent. Petiole 2–4 mm, minutely pubescent and rugose; leaf blade abaxially greenish, adaxially green, oblong-oblanceolate, 7–15 × 2–4 cm, leathery, adaxially glabrous except on midvein, midvein impressed and adaxially green, oblong-oblanceolate, 7–15 × 2–4 cm, leathery, densely leathery, midvein impressed and glabrous or slightly puberulent near apex; terminal buds conical, glabrous, current year’s branchlets with lenticels often coalescent, second and third year’s branchlets without lenticels. Petiole 8–10 mm, abaxially transversely rugose, adaxially longitudinally sulcate, glabrous or slightly puberulent; leaf blade green, broadly elliptic to lanceolate, 8–13 × 2.5–7 cm, thickly leathery, both surfaces glabrous, midvein impressed, and glabrous or slightly minutely puberulent adaxially, lateral veins 8–10 pairs, raised on both surfaces, branching and anastomosing near base, reticulate veins obscure on both surfaces, base obtuse to cuneate, margin densely sharply serrate, teeth black, apex acuminate, acumen 6–12 mm. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets; flowers yellowish green, 4-merous. Male inflorescences: 3–9-flowered cymes, pubescent; bracts deltoid-ovate, apex with stipulelike appendages; peduncle 1–2 mm; secondary axis ca. 1 mm; pedicels 3–4 mm; bracteoles 2, sub-basal, lanceolate, membranous; calyx patelliform, ca. 2.5 mm in diam., 4-lobed, lobes suborbicular, sparsely pubescent and ciliate; corolla ca. 7 mm in diam., petals 4, oblong, ca. 3 × 2.5 mm, basally slightly connate, apex ciliate. Stamens 4, as long as or shorter than petals; anthers ovoid-oblong; rudimentary ovary globose, ca. 1 mm in diam., glabrous. Female inflorescences: 1-flowered cymes; bracts suborbicular; pedicels 2–3 mm; bracteoles ciliata; calyx subcupulata, ca. 2 mm in diam., pubescent, shallowly 4-lobed, lobes orbicular, ciliate; petals ca. 3 mm, nearly free at base; staminodes ca. 1/2 as long as petals, sterile anthers sagittate; ovary oblong-ellipsoidal, ca. 2 mm, ca. 1.5 mm in diam., pubescent, apex truncate, stigma discoid. Fruit red, globose, ca. 7 mm in diam.; persistent calyx explanate; persistent staminal discoid, 4-lobed; pyrenes 4, obovoid, ca. 4 mm, ca. 3 mm in diam., abaxially pinnately longitudinally striate and sulcate, laterally rugose, endocarp stony. Fl. Mar–Apr, fr. May–Oct.

Mountain forests; high elevations. Guangdong (Hebao Dao), Hainan, Hong Kong [Vietnam].


细脉冬青 xi mai dong qing

Trees evergreen, small, ca. 5 m tall. Young branchlets yellow-brown when dry, terete, longitudinally angular and sulcate, glabrous; older than two year’s branchlets with light-colored lenticels and slightly raised subcircular leaf scars; terminal buds narrowly conical, glabrous, apex acuminate; axillary buds subglobose. Petiole 8–10 mm, abaxially raised and transversely rugose, adaxially narrowly sulcate, glabrous; leaf blade olivaceous when dry, oblong or elliptic to oblong-elliptic, 7–12 × 2.5–4.3 cm, papery, both surfaces glabrous, midvein impressed adaxially, lateral veins 10 or 11 pairs, raised on both surfaces, curved ascending, anastomosing near margin, reticulate veins evident on both surfaces, base obtuse, margin slightly reflexed, sparsely and shallowly crenulate, apex acuminate. Flowers not known. Inflorescence: 1-flowered cymes, pseudodacromose, axillary; pedicels 3–4 mm, glabrous or puberulent; bracteoles 2, basal; calyx as in male flowers; petals ovate-oblong, 2–2.5 × ca. 1.5 mm; staminodes ca. 3/4 as long as petals, sterile anthers ovoid-sagittate; ovary subglobose, stigma discoid, 4-lobed. Infructescences: rachis 5–10 mm thick; fruiting pedicels ca. 5 mm; persistent bracteoles 2, sub-basal. Fruit red, depressed globose, 4–5 mm in diam., minutely turbinate; persistent calyx explanate; persistent staminal discoid thickly discoid, evidently 4-lobed; pyrenes 4, ovoid-trigonous, ca. 2.5 mm, ca. 2 mm in diam., abaxially irregularly reticulate striate, rugose, endocarp stony. Fl. Apr–Jun, fr. Aug–Oct.

• Broad-leaved forests, thickets, slopes; 700–2200 m. E Guizhou, W Hubei, SW Sichuan, NE Yunnan.


中型冬青 zhong xing dong qing

Trees evergreen, 2–10 m tall. Branchlets brown, longitudinally ridged and sulcate, glabrous or slightly puberulent near apex; terminal buds conical, glabrous, current year’s branchlets with lenticels often coalescent, second and third year’s branchlets without lenticels. Petiole 8–10 mm, abaxially transversely rugose, adaxially longitudinally sulcate, glabrous or slightly puberulent; leaf blade green, broadly elliptic to lanceolate, 8–13 × 2.5–7 cm, thickly leathery, both surfaces glabrous, midvein impressed, and glabrous or slightly minutely puberulent adaxially, lateral veins 8–10 pairs, raised on both surfaces, branching and anastomosing near base, reticulate veins obscure on both surfaces, base obtuse to cuneate, margin densely sharply serrate, teeth black, apex acuminate, acumen 6–12 mm. Inflorescences: cymes, fasciculate, pseudopanicle, or pseudoracemose, axillary on current year’s branchlets. Male inflorescences: cymes of order 1 or 2, 1–3-flowered, fasciculate, or pseudopanicle; rachis 4–7 mm; peduncles 1–2 mm; pedicels 2–3 mm, glabrous or puberulent; bracteoles 2, basal; flowers green, 4-merous; calyx patelliform, deeply 4-lobed, lobes ovate-deltoid, not ciliate; corolla rotate, petals 4, oblong, ca. 3 × 2 mm, basally slightly connate; stamens ca. as long as petals, anthers ovoid-oblong; rudimentary ovary subglobose, apex obtuse or minutely depressed. Female inflorescences: 1-flowered cymes, pseudoracemose, axillary; pedicels 3–4 mm, glabrous or puberulent; bracteoles 2, basal; calyx as in male flowers; petals ovate-oblong, 2–2.5 × ca. 1.5 mm; staminodes ca. 3/4 as long as petals, sterile anthers ovoid-sagittate; ovary subglobose, stigma discoid, 4-lobed. Infructescences: rachis 5–10 mm thick; fruiting pedicels ca. 5 mm; persistent bracteoles 2, sub-basal. Fruit red, depressed globose, 4–5 mm in diam., minutely turbinate; persistent calyx explanate; persistent staminal discoid thickly discoid, evidently 4-lobed; pyrenes 4, ovoid-trigonous, ca. 2.5 mm, ca. 2 mm in diam., abaxially irregularly reticulate striate, rugose, endocarp stony. Fl. Apr–Jun, fr. Aug–Oct.

• Broad-leaved forests, thickets, slopes; 700–2200 m. E Guizhou, W Hubei, SW Sichuan, NE Yunnan.
119. Ilex medogensis


墨脱冬青 mo tuo dong qing

Trees evergreen, ca. 8 m tall, ca. 20 cm d.b.h. Branchlets gray-brown, terete; second to third year's branchlets longitudinally fissured, subglabrous; leaf scars slightly raised, circular; current year's sīrate and sūlate, puberulent; terminal buds conical, puberulent. Petiole (0.8–)1–1.5 cm, abaxially rounded, rugose, adaxially longitudinally sūlated, puberulent; leaf bladell elliptic, rarely obovate-elliptic, 8–12 × 3.5–(4.6) cm, thinly leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 8–10 pairs, obliquely ascending, sūlate and anastomosing near margin, raised on both surfaces, reticulate veins evident on both surfaces, base obtuse to subrounded, margin sparsely crenulate, teeth black tipped, apex abruptly acuminated, acumen 8–12 mm. Flowers not known. Infructescences: 1-fruited cymes, pseudoracemose; rachis 3–4 mm; bracts broadly ovate, deltoid, puberulent; fruiting pedicels ca. 1 mm, densely puberulent; bracteoles 2, basal, ovate-deltoid, puberulent. Fruit subglobose, 5–6 mm in diam.; persistent calyx explanate, patelliform, 4-lobed, lobes broadly deltoid, puberulent, ciliate; persistent stigma black, thickly discoid or mammilliform; pyrenes 4, ellipsoidal-oblong, ca. 4 mm, ca. 2.5 mm in diam., abaxially slightly depressed, nearly reticulately sīrate, laterally striate and pitted, endocarp leathery. Fl. unknown, fr. Sep.–Nov.

- Evergreen broad-leaved forests; ca. 800 m. SE Xizang (Médog).

120. Ilex gintonensis


景东冬青 jing dong dong qing

Shrubs or trees, evergreen, 4–10 m tall, glabrous throughout. Current year’s branchlets black brown when dry, longitudinally sīrate and sūlate; second to third year’s branchlets yellowish to yellow-brown, longitudinally rugose; leaf scars slightly raised, semicircular, lenticels absent; terminal buds narrowly conical, ca. 6 mm, glabrous, apex acuminate. Stipules caducous; petiole 5–8 mm, abaxially transversely rugose, adaxially narrowly sūlated; leaf blade obovate or rather ovate when dry, oblong, obovate-elliptic, or ovate-elliptic, rarely ovate or obovate, 5.5–10 × 3–4 cm, papery, midvein shallowly sūlated adaxially, lateral veins 7–10 pairs, raised abaxially, flattened and evident adaxially, sīrate and anastomosing near margin, reticulate veins evident abaxially, obscure adaxially, base obtuse or rounded, margin shallowly sūrate, apex acuminate to long acuminate, acumen 8–15 mm. Male inflorescences: cymes of order 1 or 2, 1- or 3-flowered, fasciculate or pseudopaniculate, axillary on current year’s branchlets; rachis 4–5 mm, sparsely puberulent; basal bract 1, ovate-oblong, ca. 2.5 × 1.5 mm, apex obtuse, sparsely ciliate; pedicels 1.5–2 mm; pedicels 2–3 mm; bracteoles basal, ovate-deltoid, ciliate; flowers white, 4-merous; calyx patelliform, ca. 4 mm in diam., deeply 4-lobed, lobes ovate, ca. 1.5 × 1.5 mm, apex obtuse, ciliate; corolla rotate, ca. 1 cm in diam., petals 4, oblong, ca. 4 × 2.5 mm, basally slightly cuneate, apex rounded, ciliate; stamens 4, 5–7 mm, anthers ovoid, ca. 1 mm; rudimentary ovary ovoid, ca. 1 mm in diam., apex rounded. Female flowers not known. Infructescences: 1-fruited cymes, pseudoracemose; rachis 2–3 mm, glabrous; fruiting pedicels 4–5.5 mm, sparsely puberulent; bracteoles 0.5, basal, ovate-deltoid, ciliate; fruit (immature) globose, 5–6 mm in diam.; persistent calyx explanate; persistent stigma thinly discoid; pyrenes 4, palmatly sīrate and sūlate throughout. Fl. May, fr. Aug.–Oct.

- Forests, hils; 600–1900 m. N and NE Guizhou, W Hubei, Hunan, Jiangxi (Lu Shan), Sichuan.

121. Ilex formosana

Pétersbourg, Sér. 7, 29(3): 46. 1881.

台湾冬青 tai wan dong qing

Shrubs or trees, evergreen, 8–15 m tall; bark gray-brown, smooth. Young branchlets gray-white or gray-brown when dry, terete, longitudinally angular and sūlated, glabrous or slightly puberulent; second to third year’s branchlets thinly fissured; leaf scars semicircular; lenticels absent; terminal buds conical, buds scales ovate-deltoid, firm, margin serrate, ciliate, puberulent. Stipules deltoid, minute; petiole 5–13 mm, abaxially raised and rugose, adaxially broadly sūlated or sūlated, glabrous; leaf blade abaxially greenish, adaxially deep green, slightly shiny, gray-olivaceous when dry, elliptic, elliptic-lanceolate, or oblong-lanceolate, rarely oblanceolate, (3.5–6) × (1.5–3.5) cm, leathery or subleathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 6–8 pairs, evident abaxially, obscure adaxially, reticulate veins often evident abaxially, obscure adaxially, base cuneate, rarely obtuse, margin sparsely crenulate-serrate, or rarely only undulate, apex acuminate to
131a. Ilex formosana var. formosana

Taiwan冬青 (原变种) tai wān dòng qīng (yuán biàn zhǒng)


Trees. Petiole 1.1–1.3 cm; leaf blade elliptic or oblong-lanceolate, 6–10 × 2–3.5 cm, margin sparsely crenulate-serrate or rarely undulate. Female inflorescences: cymes, pseudoracemose. Fruit subglobose, 4–5 mm in diam.; pyrenes ovoid-oblong, ca. 3 mm, 2–2.2 mm in diam. Fl. Mar–May, fr. Jul–Nov.

Evergreen broad-leaved forests, forest margins, shrubby areas, streamsides, mountains; 500–1800 m. Chongqing, Guangxi, Guizhou, Hunan, Sichuan, Yunnan.

1b. Pedicels of male flowers glabrous; leaf blade 7–9 × 2–2.5 cm .............................. 132b. var. glabra

132a. Ilex tetramera var. tetramera

灰叶冬青 hui ye dong qing

Shrubs or trees, evergreen, (1.5–)3.5–12 m tall. Young branchlets yellow-brown, subterete, longitudinally angular and sulcate, glabrous or puberulent in groove near apex; older branchlets gray, fissured; leaf scars flattened; lenticels absent. Stipules deltoid, minute; petiole 4–7 mm, glabrous, adaxially broadly shallowly sulcate; leaf blade oblong-elliptic or oblong-lanceolate, 5–9(–11) × (2–)2.3–3.5 cm, thickly papery or subleathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 7 or 8 pairs, abaxially prominent or raised, adaxially evident or obscure, furcate and anastomosing near margin, base obtuse or rounded, margin slightly recurved, crenulate, apices of teeth black and obtuse, or subentire, apex acuminate to caudate-acuminate, acumen 8–12 mm. Male inflorescences: cymes of order 2, 3-flowered, fasciculate, axillary on first to second year’s branchlets; peduncles very short, ca. 0.5 mm; bracts basal, ovate, ciliate; pedicels 1–3(–5) mm, puberulent or glabrous; bracteoles 2, basal, puberulent or glabrous; flowers yellow-white, 4-merous; calyx patelliform, ca. 2 mm in diam., 4-lobed, lobes deltoid, ciliate; corolla 5–6 mm in diam., petals obovate-oblong, ca. 2 × 1.5 mm, basally slightly connate, apex rounded; stamens longer than petals, anthers ovoid; rudimentary ovary subglobose, apex abruptly acute, minutely lobed. Female flowers not known. Infructescences: 1-fruited cymes, pseudoracemose or fasciculate; rachis 3–7 mm, 2–2.7 mm in diam.; pyrenes ovoid-oblong, ca. 4 mm, 2.2–2.7 mm in diam.

1a. Pedicels of male flowers puberulent; leaf blade 5–9(–11) × (2–)2.3–3.5 cm ......................................................... 132a. var. tetramera

132b. var. glabra

**AQUIFOLIACEAE**

- Evergreen broad-leaved forests, sparse woods; 500–1800 m. Chongqing, Guangxi, Guizhou, Hunan, Sichuan, Yunnan.


无毛灰叶冬青 无毛灰叶冬青


Leaf blade 7–9 × 2–2.5 cm. Pedicels of male flowers ca. 5 mm, glabrous.

- Shrubby areas, mountain slopes; ca. 1300 m. S Yunnan (Menghai).


铜光冬青 铜光冬青

Trees evergreen, 5–6 m tall, glabrous throughout. Young branchlets castaneous, terete, longitudinally angular and sulcate; older than second year’s branchlets with raised, elliptic, paler lenticels; leaf scars slightly raised, crescent-shaped; terminal buds narrowly conical, glabrous. Petiole 1–1.2 cm, abaxially rugose, adaxially deeply sulcate; leaf blade adaxially deep olivaceous, oblong-elliptic, 6–12 × 2.5–4 cm, thinly leathery, midvein impressed adaxially, lateral veins 8–10 pairs, raised abaxially, slightly raised adaxially, anastomosing near margin, reticulate veins raised abaxially, rather evident adaxially, base obtuse to subrounded, margin shallowly serrulate, apex long acuminate. Flowers not known. Inflorescences: 1-fruited cymes; pedicels 1–2 mm; bracteoles 2, basal, ovate-deltoid; calyx lobes orbicular, ciliate; petals free, ovate, ca. 2 × 1.2 mm; staminodes ca. 2/3 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 1.5 mm, ca. 1 mm in diam., apex subtruncate; stigma thinly discoid. Fruit purple-red, subglobose or ellipsoid, 3–5 mm in diam.; persistent stigma thinly discoid, 4-lobed; persistent calyx explanate; pyrenes 4, ellipsoidal-trigonal, 2–2.5(–5) mm in diam.; abaxially obscurely palmate striate and sulcate, laterally striate or rugose. Fl. Feb–May, fr. Sep–Oct.

- Forests, mixed forests, shrubby areas, mountain slopes; (400–)700–2400(–3000) m. Chongqing, S Gansu (Wenxian), Guizhou, Hubei, Hunan, Sichuan, Yunnan.

1a. Leaf blade ovate, ovate-elliptic, or ovate-lanceolate, margin undulate, crenate-serrate, not spiniform (serrate)

1b. Leaf blade oblong, margin spinose-serrate, spines 1–1.5 mm 

**134a. Ilex corallina** var. corallina

珊瑚冬青 (原变种) 珊瑚冬青 (yuan bian zhong)

*Ilex corallina* var. macrocarpa S. Y. Hu; *I. corallina* var. pubescens S. Y. Hu.


- Forests, mixed forests, shrubby areas, mountain slopes; 400–2400(–3000) m. S Gansu (Wenxian), Guizhou, Hubei, Hunan, Sichuan, Yunnan.

**134b. Ilex corallina** var. loeseneri

刺叶珊瑚冬青 刺叶珊瑚冬青


阿里山冬青 阿里山冬青

Trees evergreen, 3–10 m tall. Branchlets brownish, terete, slender, longitudinally angular, glabrous or puberulent; third year’s branchlets with small lenticels and slightly raised, narrow, deltoid leaf scars; terminal buds ovoid, small, glabrous or puberulent. Petiole purple-red, (1–)4–10 mm, abaxially transversely rugose, adaxially shallowly sulcate, glabrous or puberulent; leaf blade abaxially greenish, adaxially deep green, ovate, ovate-elliptic, ovate-lanceolate, or oblong, 4–10(–13) × 1.5–3(–5) cm, leathery, both surfaces glabrous or midvein sparsely puberulent adaxially, midvein impressed adaxially, lateral veins 7–10 pairs, raised on both surfaces, reticulate veins evident on both surfaces, base rounded or obtuse, margin undulate, crenate-serrate, rarely tips of teeth spiny, apex acuminate or acute. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets; peduncle subsessile; bracts ovate-deltoid, ciliate; flowers yellow-green, 4-merous. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; pedicules ca. 1 mm; pedicels ca. 2 mm; bracteoles 2, basal, ovate, ciliate; calyx patelliform, ca. 2 mm in diam., deeply 4-lobed, lobes ovate-deltoid, ciliate; corolla 6–7 mm in diam., petals oblong, ca. 3 × 1.5 mm, basally slightly conenate; stamens ca. as long as petals, anthers oblong, ca. 1 mm; rudimentary ovary subglobose, apex rounded, minutely 4-lobed. Female inflorescences: 1-flowered cymes; pedicels 1–2 mm; bracteoles 2, basal, ovate-deltoid; calyx lobes orbicular, ciliate; petals free, ovate, ca. 2 × 1.2 mm; staminodes ca. 2/3 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 1.5 mm, ca. 1 mm in diam., apex subtruncate, stigma thinly discoid. Fruit purple-red, subglobose or ellipsoid, 3–5 mm in diam.; persistent stigma thinly discoid, 4-lobed; persistent calyx explanate; pyrenes 4, ellipsoidal-trigonal, 2–2.5(–5) mm in diam., abaxially obscurely palmate striate and sulcate, laterally striate or rugose. Fl. Feb–May, fr. Sep–Oct.

- Forests, mixed forests, shrubby areas, mountain slopes; 700–2100 m. Guizhou, Sichuan (Guangyuan), Yunnan.
Trees evergreen, small. Branchlets deep brown-purple, slender, glabrous; older branchlets gray-brown, terete, longitudinally rugose. Petiole 5–8 mm, adaxially sulcate, glabrous; leaf blade abaxially pale brown-green, adaxially dark brown-green, lanceolate or narrowly elliptic, 5–8 × 1.5–2.5 cm, papery, both surfaces glabrous, midvein impressed adaxially, lateral veins 7–12 pairs, raised abaxially, slightly impressed adaxially, anastomosing near margin, base acute or cuneate, margin serrulate, apex caudate, acumen (1.5–)1.8–2(–2.2) cm. Flowers not known. Infructescences: 1-fruited cymes, fasciculate, axillary; flowers 4-merous. Male flowers: petals ovate-oblong, ca. 1 mm, ciliate; calyx patelliform, glabrous, deeply 4-lobed, lobes deltoid, ciliate; corolla rotate, ca. 6 mm in diam., petals oblong, ca. 3 mm, sparsely ciliate, basally slightly connate; stamens ca. as long as petals, anthers oblong; rudimentary ovary subovoid, apex obtuse. Female flowers: petals ca. 4 mm, pubescent; bracteoles 2, submedian, ciliate; calyx as in male flowers; corolla ca. 5 mm in diam., petals ovate-oblong, ca. 2 × 1.5 mm, basally slightly connate; staminodes ca. as long as petals, sterile anthers sagitate; ovary ovoid, ca. 1.5 mm, ca. 1 mm in diam., stigma very convex, 4-lobed. Fruit globose, ca. 6 mm in diam.; fruiting pedicel 5–6 mm; persistent calyx explanate, quadangular, ca. 2.5 mm in diam., ciliate; persistent stigma thinly discoid; pyrenes 4, ellipsoidal, ca. 3.5 mm, 2.5–3 mm in diam., abaxially palmately striate, nearly not sulcate, endocarp woody. Fl. Apr., fr. Jun–Sep.


麻栗坡冬青 ma li po dong qing

Trees, rarely shrubs, evergreen, 5–15 m tall, glabrous throughout. Branches brown to black-brown when dry, longitudinally angular and sulcate, smooth; second year’s branchlets castaneous; leaf scars slightly raised, crescent-shaped; lenticels absent; terminal buds ovoid-conical, glabrous, acumen acute. Petiole 9–10 mm, abaxially convex, transversely rugose, adaxially deeply sulcate; leaf blade adaxially deep green, oblong-elliptic, rarely ovate, (5–)6.5–11.5 × (2.5–)3.5–4 cm, thinly leathery, midvein impressed adaxially, lateral veins 7–10 pairs, raised abaxially, flattened to slightly impressed adaxially, furcate and anastomosing near margin, reticulate veins evident on both surfaces, base rounded or obtuse, margin slightly recurved, sparsely and shallowly serrulate, apex abruptly caudate-acuminate; acumen 1–1.5 cm, straight or slightly curved. Flowers not known. Infructescences: 1-fruited cymes, fasciculate, axillary on current year’s branchlets; rachis nearly absent; fruiting pedicels ca. 3 mm, glabrous; bracteoles 2, basal, ovate-deltoid, glabrous, ca. 1 mm. Fruit (immature) ellipsoidal, ca. 5 mm, 3.5–4 mm in diam.; persistent calyx explanate, ca. 2 mm in diam., deeply 4-lobed, lobes ovate-deltoid; persistent stigma thickly discoid, shallowly 4-lobed; pyrenes 4, ellipsoidal, 3.5–4 mm, ca. 2 mm in diam., abaxially palmately striate and sulcate. Fl. unknown, fr. Jun.

137. Ilex cyrtura Merrill, Brittonia 4: 101. 1941.

弯尾冬青 wan wei dong qing

Trees evergreen, ca. 12 m tall. Current year’s branchlets slender, longitudinally angular and sulcate, glabrous or sparsely pubescent along groove; second year’s branchlets smooth, glabrous; leaf scars crescent-shaped; lenticels absent. Petiole 7–12 mm, adaxially narrowly sulcate, puberulent, distal half narrowly winged by decurrent leaf base; leaf blade abaxially greenish, adaxially green, elliptic or obovate-elliptic, 6–11 × 2–4 cm, subleathery, abaxially glabrous, adaxially glabrous except on midvein, midvein impressed, sparsely puberulent adaxially, lateral veins 7 or 8 pairs, conspicuous abaxially, obscure adaxially, reticulate veins obscure on both surfaces, base obtuse or cuneate, margin shallowly serrate, teeth black, apex long and often falcate-caudate, acumen 1.5–2 cm. Infructescences: 1-flowered cymes, fasciculate, axillary on current year’s branchlets, pubescent; bracts broadly elliptic, ciliate; flowers yellow, 4-merous. Male inflorescences: pedicels ca. 1 mm; bracteoles 2, subbasal, ovate, ca. 1 mm, ciliate; calyx patelliform, glabrous, deeply 4-lobed, lobes deltoid, ciliate; corolla rotate, ca. 6 mm in diam., petals oblong, ca. 3 mm, sparsely ciliate, basally slightly connate; stamens ca. as long as petals, anthers oblong; rudimentary ovary subovoid, apex obtuse. Female inflorescences: pedicels ca. 4 mm, pubescent; bracteoles 2, submedian, ciliate; calyx as in male flowers; corolla ca. 5 mm in diam., petals ovate-oblong, ca. 2 × 1.5 mm, basally slightly connate; staminodes ca. as long as petals, sterile anthers sagitate; ovary ovoid, ca. 1.5 mm, ca. 1 mm in diam., stigma very convex, 4-lobed. Fruit globose, ca. 6 mm in diam.; fruiting pedicel 5–6 mm; persistent calyx explanate, quadangular, ca. 2.5 mm in diam., ciliate; persistent stigma thinly discoid; pyrenes 4, ellipsoidal, ca. 3.5 mm, 2.5–3 mm in diam., abaxially palmately striate, nearly not sulcate, endocarp woody. Fl. Jun–Sep.

Tibetan broad-leaved mountain forests; 700–1800 m. Guangdong (Conghua), Guangxi, Guizhou (Suyang, Xifeng), NW Yunnan (Gongshan) [Bhutan, N Myanmar].


假香冬青 jia xiang dong qing

Trees evergreen, 7–10 m tall, glabrous throughout; bark gray-brown, smooth, fissured. Young branchlets yellowish or brown, longitudinally angular and sulcate, second to third year’s branchlets longitudinally fissured, with raised leaf scars, lenticels absent. Petiole 1–1.2 cm, abaxially rounded, transversely rugose, adaxially sulcate; leaf blade ovate-obovate on both surfaces when dry, elliptic, oblong, or oblong-elliptic, 6–12 × 2–4 cm, papery to thinly leathery, midvein impressed adaxially, lateral veins (7–)11 pairs, raised on both surfaces, furcate and anastomosing near margin, reticulate veins slightly raised on both surfaces, base obtuse or subrounded, margin serrate, slightly recurved, apex acumenulate to caudate-acuminate, acumen 1–2 cm. Infructescences: cymes, fasciculate, axillary on current year’s branchlets; flowers 4-merous. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles very short; pedicels 1–2 mm, glabrous; calyx patelliform, glabrous, ca. 2.5 mm in diam., 4-lobed, lobes ovate-deltoid, apex acute, ciliate; corolla rotate, ca. 5 mm in diam., petals oblange-oblrate, ciliate, basally slightly connate; stamens ca. as long as petals, anthers oblong; rudimentary ovary subglobose, apex depressed, stigmas distinctly connate; pyrenes 4, ellipsoidal, ca. 3.5 mm, 2.5–3 mm in diam., abaxially palmately striate, nearly not sulcate, endocarp woody. Fl. Apr., fr. Jun–Sep.
void-oblong, ca. 4 mm, ca. 3 mm in diam., both ends obtuse or rounded, abaxially palmately 5-striate and sulcate, laterally striate and sulcate, endocarp stony. Fl. (Feb–)Jun–Jul, fr. Aug–Oct.

Forests, mountain slopes; 2100–3000 m. SW Yunnan [NE India].


广南冬青  guang nan dong qing

Trees evergreen, 6–15 m tall; bark gray. Current year’s branchlets gray-green, slender, longitudinally angular and sulcate, glabrous; second to third year’s branchlets brown-yellow, leaf scars convex, deltoid-semicircular, lenticels absent; terminal buds narrowly conical, glabrous, apically acuminate, bud scales sparsely ciliate. Stipules caducous; petiole 5–9 mm, raised abaxially, narrowly sulcate adaxially; leaf blade oblong-elliptic or obovate-elliptic, 4–8 × (1.3–)2–2.5 cm, leathery, lateral veins 9–11 pairs, conspicuous abaxially, obscure adaxially, reticulate veins evident only abaxially, base obtuse or broadly cuneate, margin undulate, conspicuously serrate, apex acuminate-caudate or falcate. Inflorescences: cymes, fasciculate, axillary on current year’s branchlets; flowers 4-merous. Male inflorescences: cymes of order 1 or 2; 1–3-flowered; peduncles nearly absent; pedicels very short, ca. 1 mm, glabrous; bracteoles 2, basal, ovate, ca. 1.5 mm, apex obtuse, ciliate; calyx patelliform, ca. 3 mm in diam., deeply 4-lobed, lobes ovate, ca. 1 mm, ciliolate; corolla rotate, 5–6 mm in diam., petals oblong, ca. 2.5 × 2 mm, basally slightly connate, apex rounded; stamens shorter than petals, anthers ovoid, ca. 1 mm; rudimentary ovary ovoid, ca. 1 mm in diam., apex obtuse-rounded, shallowly 4-lobed. Female inflorescences: 1-flowered cymes; pedicels 2–3 mm; bracteoles 2, basal, ciliate; calyx puberulent or glabrescent, lobes often keeled; corolla erect, 3–4 mm in diam., petals free, ovate, ca. 2.5 mm, ciliate; staminodes ca. as long as petals, sterile anthers ovoid, small; ovary ovoid, ca. 2 mm, ca. 1 mm in diam., stigma discoid. Fruit red, globose or subglobose, 5–7 mm in diam., pubescent (under lens); persistent calyx explanate, quadrangular, ca. 2 mm in diam.; persistent stigma thinly discoid or navel-like; pyrenes 4, ovoid or subglobose, 3–4 mm, 1.5–2.5 mm in diam., both ends obtuse, abaxially palmately striate, longitudinally slightly 1-sulcate, laterally rugose and pitted, endocarp stony. Fl. Mar–May, fr. Aug–Nov.

Evergreen broad-leaved forests, thickets, forest margins, sparse woods, mountains; (100–)300–1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan].


团花冬青 tuan hua dong qing

Trees evergreen, ca. 13 m tall, ca. 30 cm d.b.h. Young branchlets slender, longitudinally ridged and sulcate, glabrous or glabrescent; terminal buds narrowly conical, bud scales glabrous, ciliate. Stipules very minute, obscure; petiole 8–15 mm, abaxially raised, transversely sulcate, adaxially narrowly sulcate, glabrous; leaf blade ovate or subovate-elliptic when dry, shiny, oblong or oblong-elliptic, rarely ovate-elliptic, 6–12 × 2–4 cm, subleathery, both surfaces glabrous, midvein impressed and glabrous adaxially, laterally veins 8–10 pairs, raised abaxially, evident adaxially, obliquely ascending, reticulate veins obscure, base obtuse, cuneate, or rarely rounded, margin serrate, apex acuminate, acumen 8–15 mm. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets; bracts ovate, ciliate. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles ca. 1 mm; pedicels 1–2 mm; bracteoles 2, basal, deltoid, ciliate; flowers 4-merous; calyx patelliform, ca. 2 mm in diam., deeply 4-lobed, lobes deltoid or suborbicular, ciliate; corolla 7–8 mm in diam., petals oblong, ca. 3.5 × 2 mm, basally slightly connate; stamens ca. as long as petals, sterile anthers ovoid, small; ovary ovoid, ca. 2 mm, ca. 1 mm in diam., stigma discoid. Fruit red, globose or subglobose, 5–7 mm in diam., pubescent (under lens); persistent calyx explanate, quadrangular, ca. 2 mm in diam.; persistent stigma thinly discoid or navel-like; pyrenes 4, ovoid or subglobose, 3–4 mm, 1.5–2.5 mm in diam., both ends obtuse, abaxially palmately striate, longitudinally slightly 1-sulcate, laterally rugose and pitted, endocarp stony. Fl. Mar–May, fr. Aug–Nov.
Ilex subodorata

Trees evergreen, ca. 12 m tall. Branchlets brownish, castaneous, or purple, leaf scars raised, lenticels absent, glabrous; terminal buds conical, glabrous, bud scales ciliate. Stipules obscure, caducous; petiole 8–12 mm, adaxially narrowly and deeply sulcate, pubescent or glabrous; leaf blade adaxially brown or gray-brown when dry, shiny, elliptic-lanceolate or oblanceolate, 6–9 × 2–3 cm, leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 7–9 pairs, raised abaxially, obscure adaxially, anastomosing near margin, reticulate veins obscure on both surfaces, base cuneate, margin strongly serrate, teeth black and apiculate, apex acuminate, acumens 5–12 mm. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets, pubescent; bracts ovate, ciliate; flowers 4-merous. Male inflorescences: cymes of order 2, 3-flowered; peduncles 1–2 mm; pedicels ca. 4 mm; bracteoles 2, basal. Fruit red, depressed globose, ca. 4 mm, ca. 3 mm in diam., petals oblong, basally slightly connate; stamens ca. as long as petals; rudimentary ovary ovoid. Female flowers not known. Infructescences: cymes of order 2 or 3, 2–4-fruited, fasciculate, axillary or laterally at base on young branchlets; peduncle 4–5(–10) mm; fruiting pedicels 4–5 mm. Fruit red, globose, ca. 5 mm in diam.; persistent calyx 5-lobed, lobes broadly deltoid, ciliate; persistent stigma papillate, striate; pyrenes 5, ellipsoidal, ca. 3 mm, ca. 2 mm in diam., abaxially striate, not sulcate, laterally striate, endocarp leathery. Fl. Jun, fr. Aug–Nov.

- Sparse forests, stream sides in valleys; 600–1600 m. N Guangdong (Ruyuan, Yangshan).

Ilex omeiensis

Shrubs or trees, evergreen, 2–11 m tall. Branchlets gray-brown or black when dry, stout, terete, glabrous; current year’s branchlets longitudinally striate and plicate; second to third year’s longitudinally minutely fissured, leaf scars slightly raised, semicircular, lenticels obscure; terminal buds subglobose, small, glabrous. Stipules persistent, deltoid, 0.7–1.5 mm, apically acute; pediole 1.2–2 cm, thick, abaxially rounded, transversely rugose, adaxially sulcate, glabrous; leaf blade abaxially green, adaxially deep green, shiny, broadly elliptic or oblong-elliptic, 8–20 × 3.5–7 cm, thickly leathery, both surfaces glabrous, midvein abaxially raised, adaxially impressed, lateral veins 6–8 pairs, slightly raised on both surfaces, arcuate, anastomosing near margin, reticulate veins obscure on both surfaces, base obtuse or subrounded, margin entire, apex shortly acuminate. Inflorescences: cymes, fasciculate, fascicles composed of 5–9 cymes, axillary on second to third year’s branchlets or leaf scars, pubescent; bracts deltoid, ca. 2 × 1.7 mm, apex acute. Male inflorescences: cymes of order 3; peduncles 2–2.5 cm; secondary axis 2–3 mm; pedicels 6–8 mm; bracteoles basal, minute; flowers yellowish, 5(or 6)-merous; calyx patelliform, 3–4 mm in diam., puberulent, deeply 5- or 6-lobed, lobes deltoid, ca. 1.5 × 1.2 mm, apex obtuse, ciliate; corolla rotate, ca. 6 mm in diam., petals ovate-elliptic, ca. 2.5 × 1.7 mm, basally slightly connate; stamens shorter than petals, anthers ellipsoid; rudimentary ovary subglobose, ca. 1 mm in diam. Female inflorescences: cymes of order 2; peduncles 7–12 mm; pedicels 4–7 mm; bracteoles 1 or 2, subbasal; flowers 6- or 7-merous; calyx ca. 3.5 mm in diam., deeply 6- or 7-lobed; corolla sub erect, ca. 4 mm in diam., petals 6 or 7, ovate, ca. 1.5 mm, basally slightly connate; staminodes very small, ca. 1/2 as long as petals, sterile anthers cordate; ovary ovoid, ca. 2 mm, ca. 1.5 mm in diam. at base, stigma papillate, rarely cristate. Fruit red, globose, 3.5–4 mm in diam.; persistent calyx patelliform; persistent stigma thickly discoid; stylopodium 6 or 7, oblong, ca. 2 mm, ca. 1 mm in diam., trigonous in cross section, abaxially smooth, 3-istrigate, striae slightly impressed, sometimes anastomosing at both ends, endocarp leathery. Fl. May–Jun, fr. Aug–Oct.

- Mixed forests, mountain slopes; 500–1800 m. Sichuan (Emei Shan, Hongya, Pingshan).

**微脉冬青 wei mai dong qing**

Trees or shrubs, evergreen, (2–)15 m tall, glabrous throughout; bark pale black-brown. Branchlets brown or black-brown, terete; current year’s branchlets finely angular; second year’s branchlets fissured, lenticels pale, elliptic; leaf scars semicircular, convex; terminal buds ovoid-conical, small. Stipules deltoid, ca. 1 mm, apically acute; petiole terete, 1.5–2.5 cm, rather thick, abaxially rugose, adaxially narrowly sulcate; leaf blade olivaceous or brown-olivaceous, oblong-elliptic or ovate, 9–19 × 3–6.5 cm, leathery, midvein narrowly impressed adaxially, lateral veins 15–22 pairs, raised on both surfaces, parallel, furcate and anastomosing near margin, reticulate veins raised abaxially, flattened and evident adaxially, base rounded or obtuse, margin entire, apex caudate-acuminate, acumen long, 2–3 cm. Inflorescences: cymes or compound cymes, pseudo-pannate or rarely fasciculate, axillary on second year’s branchlets, very rarely solitary at base of new branchlets; rachis 4–30 mm. Male inflorescences: cymes of order 4, or compound cymes with cymes of order 3; peduncles 7–11 mm, slightly flattened, longitudinally rugose; basal bracts broadly deltoid; secondary axis 1–3 mm; pedicels 1–2 mm; bracteoles 2, basal; flowers white or yellow, 5- or 6-merous; calyx patelliform, 2–3 mm in diam., lobes ovate-deltoid, ca. 0.5 × 1 mm, margin slightly erose, ciliata, apex obtuse; corolla rotate, 4–5 mm in diam., petals obovate, ca. 2.5 × 1.5 mm, basally slightly connate, apex rounded; stamens slightly shorter than petals, anthers ovoid-ovoid; rudimentary ovary subglobose, apex obtuse. Female inflorescences: cymes of order 3, or compound cymes with cymes of order 2; peduncles (2–)3–5–(–12) mm; pedicels 2–3 mm; calyx as in male flowers; corolla erect, 3–4 mm in diam., petals obovate, ca. 1.5 mm, basally slightly connate; staminodes ca. 1/2 as long as petals, sterile anthers ciliate; ovary ovoid-globose, ca. 1.5 mm, stigma capitate, 5–7-lobed. Fruit red, globose, 3–4 mm in diam.; persistent calyx patelliform, ca. 3 mm in diam.; persistent calyx navel-like or thinly discoid; pyrenes 5–7, oblanceolate, ca. 2 mm, ca. 1 mm in diam., trigonous in cross section, abaxially 3-striate, striae slightly raised, sometimes branched, laterally smooth, endocarp leathery. Fl. Feb–Apr, fr. Jun–Dec. 2n = 40.

**Female inflorescences:** peduncles

5–12 mm ............................................. 145a. var. *venulosa*

1b. **Female inflorescences:** peduncles

c.a. 2 mm .......................................... 145b. var. *simplicifrons*

145a. *Ilex venulosa* var. *venulosa*

**微脉冬青**

*Female inflorescences: cymes; peduncles 5–12 mm.*

Evergreen broad-leaved forests, mixed forests, mountain slopes; 1800–2700 m. S and SW Yunnan [Bangladesh, Bhutan, NE India, N Myanmar].


**短柄微脉冬青 duan geng wei mai dong qing**

*Female inflorescences: more compact, much reduced cymes, fewer flowered; peduncles ca. 2 mm.*

**Forests:** 900–1200 m. SW Yunnan (Tengchong) [NE India].


**黔桂冬青 qian gui dong qing**

Shrubs or trees, evergreen, ca. 8 m tall. Current year’s branchlets slender, longitudinally deeply sulcate, sparsely puberulent; second year’s branchlets subquadrangular, ridged; third year’s branchlets longitudinally plicate-rugose, minutely fissured, leaf scars slightly raised, subcrescent-shaped; terminal buds small, scales narrow, apically acute. Stipules persistent, callous, narrowly deltoid, apically acute; petiole 5–8 mm, abaxially rugose and glabrous, adaxially narrowly and deeply sulcate, puberulent; leaf blade brown-olivaceous, shiny when dry, lanceolate, elliptic, elliptic-lanceolate, or narrowly oblong-elliptic, 5–8 × 1.5–3 cm, papery, midvein raised and glabrous abaxially, impressed adaxially, lateral veins 9–11 pairs, raised abaxially, evident adaxially, reticulate veins evident abaxially, base cuneate or acute, rarely obtuse, margin entire or apically few serrate, apex long acuminate. Male flowers not known. Female inflorescences: cymes of order 1–3, 1–5-flowered, fasciculate or pseudo-paniculate, axillary, puberulent, sessile; rachis 3–12 mm; basal bracts persistent, broadly deltoid, apex acute; peduncles 3–7 mm; pedicels 3–5 mm, bracteoles 2, basal; 1-flowered pedicels ca. 5 mm, bracteoles 2, submedian; flowers 6- or 7-merous; calyx patelliform, ca. 2 mm in diam., deeply lobed, lobes ovate-deltoid, margin erose, not ciliata, apex acute; corolla rotate, 4–5 mm in diam., petals oblong, 1.5–2 mm, basally slightly connate; staminodes ca. 1/2 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 1.5 mm, ca. 1 mm in diam., stigma thickly discoid. Fruit red, castaneous or black when dry, ovoid-subglobose, ca. 4 mm, ca. 3 mm in diam.; persistent calyx subrotate, 2.5–3 mm in diam.; persistent style sometimes evident; persistent stigma thickly discoid; pyrenes 6, ellipsoidal, ca. 3 mm, ca. 1 mm in diam., abaxially rugose, 3-striate, not sulcate, laterally smooth, endocarp leathery. Fl. Jun–Jul, fr. Aug–Nov.

*Evergreen broad-leaved forests, mountains; 500–800 m. Guangdong, Guangxi, Guizhou (Dushan), Huan [Vietnam].*


**毛冬青 mao dong qing**

Shrubs or small trees, evergreen, 3–8 m tall. Branchlets gray-brown, somewhat zigzag, subquadrangular, densely hirsute or villous, longitudinally ridged and rugose; leaf scars slightly raised, nearly crescent-shaped; lenticels absent; terminal buds often poorly developed or absent. Stipules persistent, deltoid, hirsute, apically acute; petiole 2.5–5 mm, densely hirsute; leaf blade olivaceous or deep olivaceous when dry, elliptic, oblong, obovate, or narrowly ovate, 2–(6–)10 × 1–2.5(–7) cm, thickly papery, papery, or membranous, both surfaces hirsute, midvein flattened or slightly impressed adaxially, densely hirsute, lateral veins 4 or 5 pairs, evident abaxially, obscure adaxially, anas-
Branchlets densely villous. Leaf blade oblong or obovate, 4–10 × 2–7 cm, thickly papery, apex abruptly acuminate. Inflorescences pseudopaniculate; flowers white. Fruit ca. 3 mm in diam.; pyrenes 6 or 7, ca. 2.3 mm, ca. 0.8 mm in diam., abaxially not sulcate, endocarp leathery. Fl. Jun.

- Evergreen broad-leaved forests; 500–1000 m. W Guangxi (Bose, Lingyun), S Guizhou (Libo), SE Yunnan (Funing, Yanshan).


Ilex hainanensis C. J. Qi & Q. Z. Lin; I. rotunda Thunberg var. hainanica Loesener.

Trees evergreen, 5–8 m tall. Branchlets brown or black, rather zigzag, slender; current year’s branchlets subquadrangular, rugose, glabrescent, leaf scars raised, narrowly crescent-shaped, lenticels absent; terminal buds minute, often poorly developed. Petiole 5–10 mm, abaxially rounded, glabrous, adaxially deeply and narrowly longitudinally sulcate, puberulent in groove; leaf blade ovate or brown-ovate when dry, elliptic or obovate-oblong to ovate-oblong, 5–9 × 2.5–5 cm, thinly leathery or papery, midvein raised and glabrous abaxially, impressed and puberulent adaxially, lateral veins (6 or 7 or)9 or 10 pairs, slightly raised on both surfaces, anastomosing near margin, reticulate veins evident on both surfaces, base obtuse or rounded, margin entire or undulate and shallowly serrate distally, apex abruptly acuminete or acute. Inflorescences: cymes, fasciculate or pseudopaniculate, axillary on second year’s branchlets, sparsely shortly puberulent; bracts caducous, deltoid. Male inflorescences: cymes of order 1–3, 1–3-flowered; pedicels 1–3 mm; bracteoles 2, 1–3 mm. Female inflorescences: cymes of order 1–3, 1–3-flowered; pedicels 1–3 mm; bracteoles 2, 1–3 mm; pedicels 1–2 mm; bracteoles 2, 1–3 mm; pedicels 1–3 mm. Inflorescences fuscate; flowers pink. Fruit ca. 4 mm in diam.; pyrenes 5 or 6 or 7 or 8, ca. 3 mm, abaxially longitudinally and broadly sulcate, endocarp leathery or subwoody. Fl. Apr.–May–Jun. Fr. Aug.–Nov. 2n = 40*.

- Evergreen broad-leaved forests, forest margins, shrubby areas, streamsides, roadsides; (sea level to)100–1000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Taiwan, SE Yunnan, Zhejiang.

147a. Ilex pubescens var. pubescens

毛冬青 (原变种) mao dong qing (yuan bian zhong)

Ilex pubescens var. pubescens H. T. Chang; I. trichoclada Hayata (1913), not Loesener (1901).

1a. Leaf blade 2–6 × 1–2.5(–3) cm, apex acute or shortly acuminate; flowers pink .......................................................... 147a. var. pubescens

1b. Leaf blade 4–10 × 2–7 cm, apex abruptly acuminete; flowers white .......................................................... 147b. var. kwangsiensis

147b. Ilex pubescens var. kwangsiensis

420 AQUIFOLIACEAE

Branchlets densely hirsute. Leaf blade elliptic or narrowly ovate, 2–6 × 1–2.5(–3) cm, papery or membranous, apex acute or shortly acuminete. Inflorescences fuscate; flowers pink. Fruit ca. 4 mm in diam.; pyrenes (5 or)6 or 7, ca. 3 mm, abaxially longitudinally and broadly sulcate, endocarp leathery or subwoody. Fl. Apr.–May, fr. Aug.–Nov.

- Evergreen broad-leaved forests, forest margins, shrubby areas, streamsides, roadsides; (sea level to)100–1000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangxi, Taiwan, Zhejiang.

147b. Ilex pubescens var. kwangsiensis Handel-Mazzetti, Sinensia 3: 189. 1933.

广西毛冬青 guang xi mao dong qing
elliptic lenticels; second year’s branchlets gray, subterete, with very dense lenticels. Petiole 3–7 mm, adaxially sulcate or sub-flat, puberulent or glabrescent; leaf blade narrowly elliptic, elliptic, or oblong-elliptic, rarely ovate-elliptic or oblong, 6–10 × 2–3.5 cm, leathery, abaxially glabrous, inconspicuously and minutely glandular punctate, adaxially glabrous except on midvein, midvein narrowly impressed and puberulent adaxially, lateral veins obscure abaxially, evident adaxially, base obtuse or cuneate, margin entire, apex acute or obtuse, rarely shortly acuminate or retuse. Male inflorescences: cymes of order 1 or 2(or 3), 1–3(or 4)-flowered, fasciculate, axillary on current year’s branchlets or on leaf scars of second or third year’s; peduncules 2–2.5 mm; pedicels 4.5–6 mm, puberulent; bracteoles basal, deltoid, puberulent; flowers 5-merous; calyx patelliform, 5-lobed, lobes deltoid-ovate, puberulent, ciliate; petals 5, broadly oblong, ca. 4 mm, basally slightly connate; stamens ca. as long as petals; rudimentary ovary ovoid. Female flowers not known. Infructescences: 1-fruited cymes, fasciculate, fascicles 3- or 4-flowered, axillary; fruiting pedicels 6–8 mm, puberulent; persistent bracteoles basal, deltoid, puberulent. Fruit red, globose, ca. 5 mm in diam.; persistent calyx 4- or 5-lobed, lobes broadly deltoid, puberulent, ciliate; persistent stigma mammilliform or cylindrical; pyrenes 5, ellipsoidal, ca. 3 mm, ca. 2 mm in diam., abaxially striate, endocarp leathery. Fl. May, fr. Nov.

- Forests on hill slopes; 200–300 m. Guangxi, Yunnan.


Shrubs evergreen, ca. 12 m tall. Current year’s branchlets angular and sulcate, slightly puberulent or glabrous; second year’s branchlets gray-white, with strongly raised semicircular leaf scars; terminal buds puberulent. Petiole 5–8 mm, abaxially rugose, puberulent, adaxially narrowly sulcate; leaf blade olivaceous when dry, shiny, oblong-elliptic, rarely elliptic or lanceolate-elliptic, 4–8 × 1.3–3.2 cm, leathery, glabrous except on midvein, midvein impressed adaxially, lateral veins 9 or 10 pairs, slightly evident on both surfaces, base obtuse or broadly cuneate, margin entire or inconspicuously serrate at apex, apex shortly acuminate or acute. Flowers not known. Infructescences: 1-fruited cymes, solitary or fasciculate, fascicles 2–4-flowered, axillary on first to second year’s branchlets; fruiting pedicels 3–5 mm, puberulent, basal scales numerous, puberulent, ciliate. Fruit subglobose, 5–6.5 mm in diam.; persistent calyx patelliform, 6-lobed, lobes broadly deltoid, apex acute or obtuse, ciliate; persistent stigma mammilliform, very convex; pyrenes 6, ellipsoidal, 3–4 mm, 1.5–2 mm in diam., abaxially longitudinally 3-striate and 2-sulcate, laterally thinly striate, endocarp leathery. Fl. unknown, fr. Oct.

- Forests on mountain slopes; 1200–2200 m. Yunnan.


小金冬青 xiao jin dong qing

Shrubs evergreen, 1–2 m tall. Branchlets gray-white, terete, longitudinally angular. Petiole ca. 5 mm, abaxially rounded, adaxially longitudinally sulcate; leaf blade abaxially greenish, adaxially green, shiny, linear or narrowly lanceolate, 6–9 × ca. 0.8 cm, leathery, abaxially densely glandular punctate, midvein impressed adaxially, lateral veins obscure, base cuneate, margin minutely obtusely serrate, apex acuminate. Male inflorescences: 1-flowered cymes, fasciculate, fascicles 3–5-flowered, axillary; rachis very short or nearly absent; pedicels ca. 2 mm; flowers 4-merous, yellow-green; calyx cupular, 4-lobed, lobes ovate-deltoid, ca. 0.5 mm; petals free, ovate-oblong, ca. 3 mm; stamens 4, filaments ca. 2 mm, anthers oblong, ca. 1 mm; rudimentary ovary ovoid, apex rather flattened. Female flowers not known. Infructescences: 1-fruited cymes, solitary or few fascicled; fascicles 2-flowered, axillary; fruiting pedicels ca. 4 mm. Fruit (immature) subglobose, ca. 5 mm in diam., longitudinally 8-sulcate. Fl. Mar.–May, fr. Jun.–Oct.

- Dense forests, stream banks; 400–600 m. Guangdong (Xiaojin).


庆元冬青 qing yuan dong qing

Trees evergreen, ca. 18 m tall; bark gray-brown. Current year’s branchlets castaneous. Petiole ca. 1 cm, adaxially sulcate; leaf blade adaxially green, shiny, broadly ovate or ovate-elliptic, 5–10 × 2.5–5 cm, thickly leathery, abaxially glandular punctate, midvein distal half raised and proximal half impressed adaxially, lateral veins 10–13 pairs, evident abaxially, obscure adaxially, base broadly cuneate, margin entire, apex acuminate, acumen obtuse, retuse. Flowers not known. Infructescences: 1-fruited cymes, fasciculate; fascicles 4–6-flowered, axillary; fruiting pedicels 4–5 mm, pubescent. Fruit red, globose, ca. 5 mm in diam.; persistent calyx 5–7-lobed, lobes orbicular, pubescent, ciliate; persistent stigma discoid; pyrenes 6, ellipsoidal, ca. 7 mm, 3–4 mm in diam., abaxially 3-striate and 2-sulcate, endocarp subwoody. Fl. unknown, fr. Nov.

- Evergreen broad-leaved forests in valleys, mountain slopes; 600–1000 m. Fujian, Zhejiang (Qingyuan).


河滩冬青 he tan dong qing

Shrubs or trees, evergreen, 4–5 m tall. Current year’s branchlets castaneous, longitudinally angular and sulcate, hirsute or subglabrous; second to third year’s branchlets gray, terete, longitudinally striate and lenticels obscure; leaf scars raised, semicircular; terminal buds conical-lanceolate, densely pilose. Stipules deltoid, minute, pilose; petiole 3–8 mm, abaxially rounded, adaxially pilose, sulcate, narrowly winged by decurrent leaf base; leaf blade lanceolate or oblong-lanceolate, 3–6–(8) × 0.5–1.4 cm, subleathery, both surfaces pilose when young, glabrescent, or adaxially glabrous and midvein pilose, midvein impressed adaxially, lateral veins 6–8 pairs, slightly raised abaxially, obscure adaxially, anastomosing near margin, pilose abaxially, reticulate veins obscure, base acute or cuneate, margin subentire, often 1- or 2-serrulate near apex, recurved when dry, apex acute or obtuse, mucronate. Infructescences: cymes, fasciculate, axillary on second year’s branchlets, pilose or minutely
puberulent; basal scales of flower buds persistent, broadly deltoid, pilose. Male inflorescences: cymes of order 2, 3-flowered; peduncles 3–6 mm; pedicels 1.5–2.5 mm; bracteoles 1, basal, or absent; flowers white, 5- or 6-merous; calyx cupular, ca. 3 mm in diam., pilose or minutely puberulent, deeply 5- or 6-lobed, lobes deltoid-ovate, ciliate; corolla rotate, 5–6 mm in diam., petals ovate-oblong, ca. 2 mm; stamens slightly shorter than petals, anthers oblong; rudimentary ovary pulvinate or subglobose, apex acute or mucronate. Female inflorescences: cymes of order 1 (or 2), 1–3-flowered; pedicels 4–5 mm, densely pilose or minutely puberulent; bracteoles 2, submedian, pilose; peduncles of cymes 5–6 mm; pedicels ca. 3 mm; flowers 5–8-merous; calyx cyathiform, 3–4 mm in diam., lobes deltoid, pilose; corolla ca. 6 mm in diam., petals oblong, ca. 3 mm, basally slightly conuate; staminodes ca. 2/3 as long as petals, sterile anthers sagittate; ovary ovoid, style evident, stigma capitate, pubescent. Fruit red, ovoid-ellipsoidal, 5–6 mm, 4–5 mm in diam.; persistent calyx patelliform, ca. 3.5 mm in diam., petals deltoid, not ciliate; corolla rotate, 6–7 mm in diam., petals oblong, ca. 3.5 × 2.5 mm, not ciliate, basally slightly connate; stamens ca. as long as petals, anthers ovoid-oblong; rudimentary ovary conical, apex obscurely lobed. Female inflorescences: 1-flowered cymes; pedicels 4–6 mm, globose or puberulent, base bracteolate; calyx as in male flowers; petals free, oblong, ca. 2 mm; staminodes ca. 1/2 as long as petals, sterile anthers sagittate; ovary subglobose, ca. 1 mm in diam., style evident, stigma capitate. Fruit red, globose, 4–5 mm in diam.; fruiting pedicel 5–10 mm, globose or puberulent; persistent calyx explantate, ca. 4 mm in diam., lobes acute; persistent style evident, ca. 0.5 mm, stigma capitate; pyrenes 6 or 7, oblong, ca. 3.5 mm, ca. 1.5 mm in diam., smooth, abaxially with a single slender ridge, slightly branched toward lower end, endocard leathery. Fl. Apr.–Jun, fr. Jul.–Oct.

- Branchlets hirsute; both surfaces of young leaves and inflorescences pilose
- Branchlets nearly glabrous; adaxial surface of leaf blade glabrous except on midvein; inflorescences minutely puberulent

153a. *Ilex metabaptista* var. *metabaptista*

河滩冬青 (原变种) he tan dong qing (yuan bian zhong)


- Branchlets hirsute; both surfaces of young leaves and inflorescences pilose
- Branchlets nearly glabrous; adaxial surface of leaf blade glabrous except on midvein; inflorescences minutely puberulent

153b. *Ilex metabaptista* var. *bodinieri* (Loesener) G. Barriera, comb. nov.

紫金牛叶冬青 zi jin niu ye dong qing


厚叶冬青 hou ye dong qing


Shrubs or small trees, evergreen, 2–7 m tall; bark gray-brown. Current year’s branchlets red-brown, longitudinally angular and ridged, glabrous; second and third year’s branchlets gray-brown, slightly stout, longitudinally fissured, lenticels elliptic, numerous but inconspicuous; leaf scars slightly raised, semicircular; terminal buds narrowly conical, bud scales loose, glabrous, ciliate. Stipules deltoid, minute, glabrous; petiole 4–8 mm, adaxially narrowly sulcate, glabrous; leaf blade adaxially deep green, shiny, elliptic or oblong-elliptic, 5–9 × 2–3.5 (–6.5) cm, thickly leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins and reticulate veins obscure on both surfaces, base cuneate, obtuse, or rounded, margin entire, sometimes revolute, apex acuminate or shortly obtusely pointed. Inflorescences: cymes, fasciculate, axillary on second or current year’s branchlets; bracts ovate, glabrous. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; pedicels 5–10 mm, glabrous; bracteoles 2, subbasal; flowers white, 5–8-merous; calyx patelliform, ca. 3.5 mm in diam., lobes deltoid, not ciliate; corolla rotate, 6–7 mm in diam., petals oblong, ca. 3.5 × 2.5 mm, not ciliate, basally slightly connate; stamens ca. as long as petals, anthers ovoid-oblong; rudimentary ovary conical, apex obscurely lobed. Female inflorescences: 1-flowered cymes; pedicels 4–6 mm, glabrous or puberulent, base bracteolate; calyx as in male flowers; petals free, oblong, ca. 2 mm; staminodes ca. 1/2 as long as petals, sterile anthers sagittate; ovary subglobose, ca. 1 mm in diam., style evident, stigma capitate. Fruit red, globose, 4–5 mm in diam.; fruiting pedicel 5–10 mm, glabrous or puberulent; persistent calyx explantate, ca. 4 mm in diam., lobes acute; persistent style evident, ca. 0.5 mm, stigma capitate; pyrenes 6 or 7, oblong, ca. 3.5 mm, ca. 1.5 mm in diam., smooth, abaxially with a single slender ridge, slightly branched toward lower end, endocard leathery. Fl. Apr–May, fr. Jul–Nov.

- Branchlets hirsute; both surfaces of young leaves and inflorescences pilose
- Branchlets nearly glabrous; adaxial surface of leaf blade glabrous except on midvein; inflorescences minutely puberulent


长柄冬青 chang bing dong qing

Trees evergreen, ca. 7 m tall. Branchlets gray, terete, stout, puberulent when young, glabrescent, minutely fissured; lenticels minute, inconspicuous; leaf scars raised, subcircular; terminal buds puberulent. Stipules broadly deltoid, acutely apical; petiole terete, 8–10 mm, thick, abaxially rugose, adaxially narrowly sulcate; leaf blade abaxially pale, adaxially gray-olivaceous, rather shiny when dry, oblong or obovate-oblong, proximal half nearly cuneate, 15–25 × 5–7 cm, thickly leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 12–15 pairs, raised abaxially, obscure adaxially, anastomosing near margin, reticulate veins evident abaxially, obscure adaxially, base rounded or obtuse, margin entire, recurved when dry, apex
broadly acute. Flowers not known. Inflorescences: 1-flowered cymes, fasciculate, fascicles 9–16-flowered, axillary on second year’s branchlets; bracts broadly deltoid, apex acute; fruiting pedicels 2.5–3.2 cm, puberulent, bracteoles 1 or 2, inserted below middle on pedicels. Fruit shiny, brown when dry, subglobose, ca. 8 mm, smooth, densely yellow punctate; persistent calyx expanate, ca. 7 mm in diam., puberulent, 6-lobed, lobes suborbicular or reniform, ca. 1.5 × 3 mm, minutely ciliate or glabrous; persistent stigma mammilliform; pyrenes 5 or 6, elliptoidal, ca. 5 mm, 1–2 mm in diam., abaxially longitudinally 3-striate, laterally reticulately striate, mature endocarp not seen. Fl. May, fr. Jun–Nov.

3-striate, laterally reticulately striate, mature endocarp not seen.

- Forests, valleys; ca. 600 m. Hainan (Baoting, Qiongzhong).


石枚冬青 shi mei dong qing

Trees evergreen, 5–11 m tall; bark gray-white, scabrous. Young branchlets brownish, terete; lenticels conspicuous; leaf scars raised, subcircular. Petiole black-brown when dry, ca. 1.2 cm, abaxially rounded, transversely rugose, adaxially longitudinally sulcate, glabrous; leaf blade abaxially slightly pale yellow, adaxially yellowish brown when dry, elliptic or broadly elliptic, 7.5–10 × 3.5–5.5 cm, leathery, abaxially not punctate when dry, both surfaces glabrous, midvein impressed adaxially, lateral veins 6–8 pairs, obliquely ascending, anastomosing near margin, slightly raised abaxially, evident adaxially, reticulate veins evident abaxially, base rounded, margin entire, apex acuminate. Flowers not known. Inflorescences: 1-flowered cymes; fasciculate, fascicles 2–10-flowered; axillary; axis 3–8 mm, ca. 2 mm in diam.; bracts gray-white when dry, broadly deltoid, ca. 0.7 mm. Fruit subglobose, 4–5 mm in diam.; fruiting pedicel 5–7 mm; bracteole 1, deltoid, at middle to lower part; persistent calyx 3–4 mm in diam., 4- or 5-lobed, lobes orbicular; persistent stigma shortly cylindric or narrowly mammilliform, papillate, ca. 1 mm tall; pyrenes 4 or 5, lanceolate, ca. 4.5 mm, abaxially 3-striate, laterally smooth, endocarp leathery. Fl. unknown, fr. Oct.

- Sandy ocean beaches; sea level. Hainan (Lingshi, Wanning).


蕉岭冬青 jia liang dong qing

Trees evergreen, ca. 30 m tall. Current year’s branchlets brownish, slender, longitudinally angular and sulcate, pubescent; second year’s branchlets gray-brown, pubescent, lenticels circular, convex. Petiole 5–7 mm, adaxially longitudinally sulcate, puberulent; leaf blade olivaceous when dry, narrowly elliptic or elliptic-lanceolate, rarely narrowly oblong-elliptic, 4.5–6 × 1.4–2.1 cm, leathery, glabrous except on midvein adaxially, midvein impressed adaxially, lateral veins 7 or 8 pairs, slightly conspicuous abaxially, obscure adaxially, reticulate veins obscure on both surfaces, base cuneate, margin entire, apex acuminate, acumens 5–10 mm. Male flowers not known. Female inflorescences: 1-flowered cymes, fasciculate, axillary on first to third year’s branchlets; flowers 4-merous; pedicels ca. 5 mm, pubescent; bracteoles basal, deltoid, pubescent; calyx patelliform, pubescent, lobes broadly deltoid; ovary ovoid, ca. 3 mm, ca. 2 mm in diam., 4-loculed, densely pubescent, persistent style evident, stigma capitate. Fruit not known. Fl. May, fr. unknown.

- Dense forests at summits of hills and in hilly areas; 600–700 m. Guangdong (Jiaolong).


谷木叶冬青 gu mu ye dong qing

*Ilex memecylifolia* var. *oblongifolia* Champion ex Bentham.

Trees evergreen, 15–20 m tall, rarely shrubs, ca. 2 m tall. Young branchlets slender, longitudinally angular and sulcate, very shortly puberulent; third year’s branchlets gray, smooth; lenticels absent; leaf scars raised, semicircular; terminal buds ovoid, puberulent. Stipules persistent, deltoid, minute; petiole 5–7 mm, abaxially rounded, adaxially narrowly sulcate, puberulent; leaf blade abaxially greenish, adaxially deep green, shiny or not, ovate-oblong or obovate, 4.85 × 1.2–3.3 cm, leathery to thickly leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 5 or 6 pairs, and reticulate veins obscure on both surfaces, base cuneate or obtuse, margin entire, apex acuminate or obtuse. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets, often with a dormant bud; flowers white, fragrant, 4- or 5-merous. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles 1–3 mm; bracts deltoid, puberulent; pedicels 3–6 mm, puberulent; bracteoles 2, basal or subbasal, or absent; calyx patelliform, ca. 2 mm in diam., lobes 5 or 6, deltoid, margin erose, apex obtuse, ciliate; corolla rotate, 5–6 mm in diam., petals 5 or 6, oblanceolate, basally slightly connate; stamens ca. as long as petals, anthers ovoid; rudimentary ovary subglobose. Female inflorescences: 1-flowered cymes; pedicels 6–8 mm, puberulent; bracteoles 1 or 2, basal, puberulent; calyx and corolla as in male flowers; staminodes ca. 3/4 as long as petals, sterile anthers and filaments puberulent; ovary subovoid, 1.5–2 mm in diam., style evident, ca. 1 mm, stigma capitate. Fruit red, globose, 5–6 mm in diam.; fruiting pedicel 6–8(–10) mm, puberulent; persistent calyx expanate, ca. 3 mm in diam.; persistent stigma columnar, ca. 1 mm; pyrenes 4 or 5, elliptoidal-oblong, 4–5 mm, ca. 2 mm in diam., reticulately striate, endocarp leathery, rugose, hairy. Fl. Mar–Apr, fr. Jul–Dec.

Dense forests, sparse forests, mixed forests, shrubby areas, roadsides; 300–600 m. Fujian, Guangdong, Guangxi, Guizhou, Jiangxi [N Vietnam].

**Ilex sinica** (Loesener) S. Y. Hu, J. Arnold Arbor. 31: 231. 1950.

中华冬青 zhong hua dong qing


Trees evergreen, 5–13(–20) m tall, or shrubs, ca. 2 m tall; bark gray. Branchlets gray-green, terete; current year’s branchlets longitudinally angular and sulcate, densely downy-pilose; second and third year’s branchlets with circular lenticels, leaf scars semicircular, small; terminal buds conical, apically acute, scales sparse, downy-pilose. Stipules drill-like, deltoid, 1–1.5 mm, puberulent, apex acuminate; petiole 5–9 mm, puberulent,
longitudinally sulcate; leaf blade oblong or oblong-elliptic, 5–11(–13) × 2.3–4 cm, leathery, abaxially sparsely puberulent or glabrescent, adaxially glabrous except on midvein, midvein raised and downy-pilose abaxially, deeply narrowly sulcate adaxially, lateral veins 10–14 pairs, obscure on both surfaces, rarely abaxially evident, reticulate veins obscure on both surfaces, base obtuse, margin entire, apex acuminate, acumens 5–20 mm. Inflorescences: cymes, fasciculate, axillary on first to second year’s branchlets; bracts lanceolate, 1–2 mm, puberulent. Male inflorescences: cymes of order 2, 3-flowered; peduncles 2–3 mm, puberulent; flowers white, 4- or 5-merous; calyx cyathiform, 2–2.5 mm in diam., puberulent, 4–6-lobed, lobes deltoid, apex acute, rarely sparsely ciliate; corolla rotate, ca. 6 mm in diam., petals oblong, basally slightly connate; stamens ca. as long as or longer than petals; rudimentary ovary ovoid, ca. 1 mm in diam., rostellate. Female inflorescences: 1-flowered cymes; pedicels 4–6 mm, puberulent; bracteoles 2, basal, scalelike; flowers 6(–9)-merous; calyx 3–4 mm in diam., lobes deltoid, puberulent, ciliate; corolla rotate, ca. 6 mm in diam., petals 6(–9); staminodes slightly shorter than petals, sterile anthers cordate, slightly puberulent; ovary globose, ca. 2 mm in diam., style evident, ca. 0.5 mm, stigma capitulate. Fruit red, globose, 4–5 mm in diam.; fruiting pedicel 5–8 mm, glabrescent; persistent calyx exannulate, ca. 3 mm in diam.; persistent style evident, style puberulent; pyrenes 6, oblong, ca. 3 mm, 1–1.5 mm in diam., both ends obtuse, abaxially reticulately striate, endocarp leathery, smooth.


Trees small to shrubs, evergreen, ca. 4 m tall. Branchlets yellow-brown or castaneous, terete, glabrous; current year’s branchlets longitudinally angular-sulcate; third year’s branchlets smooth; lenticels absent; leaf scars raised, deltoid; terminal buds ovoid, scales sparse, glabrous. Stipules persistent, deltoid, ca. 1 mm, aciculate apically; petiole 4–8 mm, abaxially rounded and rugose, adaxially deeply sulcate, narrowly winged on distal half; leaf blade abaxially greenish, adaxially green, shiny, obcordate, obovate, or rarely obovate-elliptic, 2.7–6 × 1.3–2.5 cm, thickly leathery, abaxially punctate, both surfaces glabrous, midvein abaxially raised, glabrous, adaxially deeply impressed, very sparsely puberulent, lateral and reticulate veins obscure on both surfaces, base cuneate or acute, margin recurved, entire, apex rounded and retuse, rarely obtuse. Inflorescences: cymes, fasciculate, axillary on second to third year’s branchlets. Male inflorescences: cymes of order 2, 3-flowered; basal bracts tricuspidate, puberulent; peduncles 2–3 mm, sparsely puberulent; pedicels 3–4 mm; bracteoles absent, or 1 or 2, basal, deltoid, puberulent; calyx patelliform, ca. 3 mm in diam., puberulent, 5–7-lobed, lobes orbicular, sparsely ciliate or not ciliate; corolla rotate, ca. 7 mm in diam., petals 4 or 5, oblong, ca. 2.5 mm, not ciliate, basally slightly connate; stamens nearly as long as petals, anthers oblong-oval; rudimentary ovary globose, middle distinctly 4- or 5-lobed, apex papillate. Female flowers not known. Inflorescences: 1-fruited cymes; fruiting pedicels 8–10 mm, puberulent; bracteoles 1 or 2, basal. Fruit red, globose, ca. 5 mm in diam.; persistent calyx exannulate, suborbicular, ca. 4 mm in diam.; persistent stigma capitulate; pyrenes 5 or 6(6 or 7), ellipsoidal, 2–3 mm, 1–1.3 mm in diam., adaxially 2- or 3-striate, laterally smooth, endocarp leathery. Fl. Apr.–May, fr. Jul.–Oct.


Shrubs evergreen, 1–2.5 m tall; bark gray-white. Branchlets castaneous, slender; current year’s branchlets longitudinally striate-sulcate, very sparsely puberulent; second to third year’s glabrescent; lenticels numerous, evident; leaf scars semicircular; terminal buds conical, scales sparse, puberulent. Stipules minute, deltoid; petiole 6–10 mm, abaxially rugose, glabrous, adaxially longitudinally and deeply sulcate; leaf blade abaxially greenish, adaxially deep green, shiny, linear-lanceolate, 4.5–12 × 0.8–2.2 cm, leathery, abaxially punctate, both surfaces glabrous, midvein impressed adaxially, lateral veins 9–12 pairs, anastomosing near margin, evident abaxially, reticulate veins obscure, base cuneate, margin recurved, entire, apex rounded, or retuse. Flowers not known. Inflorescences: 1-fruited cymes, solitary or few fascicled, fascicles 2-fruited, axillary on first to second year’s branchlets; fruiting pedicels ca. 5 mm. Fruit brown-yellow or rarely brownish when dry, globose, 5–6 mm in diam.; exocarp leathery; persistent calyx cup-shaped, 4-lobed, lobes orbicular; persistent stigma papillate; pyrenes 4, ca. 5 mm, ca. 3 mm in diam., ovoid-ellipsoidal, abaxially 1–3-striate, not sulcate. Fl. unknown, fr. Jul.–Aug.

Trees evergreen, small, 4–8 m tall, glabrous throughout; bark gray-brown. Branchlets terete, longitudinally angular-sulcate; leaf scars slightly raised. Petiole 3–4 mm, adaxially longitudinally sulcate, distal end winged by decurrent leaf base; leaf blade obovate, 4.5–5.5 × 2–2.5 cm, leathery, adaxially small brown glandular punctate, midvein slightly impressed adaxially, lateral veins 6–8 pairs, obliquely ascend, anastomosing near margin, slightly raised abaxially, evidently adaxially, reticulate veins obscure, base cuneate, margin recurved, entire, apex rounded, or retuse. Flowers not known. Inflorescences: 1-fruited cymes, solitary or few fascicled, fascicles 2-fruited, axillary on first to second year’s branchlets; fruiting pedicels ca. 5 mm. Fruit brown-yellow or rarely brownish when dry, globose, 5–6 mm in diam.; exocarp leathery; persistent calyx cup-shaped, 4-lobed, lobes orbicular; persistent stigma papillate; pyrenes 4, ca. 5 mm, ca. 3 mm in diam., ovoid-ellipsoidal, abaxially 1–3-striate, not sulcate. Fl. unknown, fr. Jul.–Aug.
subovoid, apex obtuse, inconspicuously 6-lobed. Female inflorescences: cymes of order 1(2 or 3)-flowered; pedicels 1–2 cm, puberulent; calyx as in male flowers; corolla choricarpous, petals oblanceolate, ca. 3 mm; stamens ca. 1/3 as long as petals, sterile anthers sagittate; ovary globose-ovoid, ca. 2 mm in diam., styles ca. 1 mm, stigma capitately pubescent. Fruit red, globose, ca. 6 mm in diam.; fruiting pedicle 1–2 cm; persistent calyx explanate, ca. 5 mm in diam., lobes orbicular, ciliate; persistent stigma columnar-mammilliform; pyrenes 4–6, ellipsoidal, 4.5–5 mm, ca. 2 mm in diam., both ends pointed, abaxially longitudinally 3- to 4-ridged, not sulcate, laterally smooth or 1-ridged, endocarp leathery. Fl. Apr, fr. Jul–Oct.

Sparse forests, shrubby areas, mountain slopes; 200–300 m. S Guangxi [N Vietnam].


湿生冬青 shi sheng dong qing

Shrubs or small trees, evergreen, 3–7.5 m tall; bark gray-black. Terminal buds ovoid, scales rugose, puberulent or glabrescent. Petiole 1.3–1.5 cm, glabrous, longitudinally sulcate adaxially; leaf blade abaxially greenish, adaxially green, shiny, elliptic, elliptic-lanceolate, or oblance-lanceolate, (58–15 × 2.5–4.5) mm, leathery or thickly leathery, abaxially glandular punctate, both surfaces glabrous, midvein impressed and narrowly sulcate adaxially, lateral veins 10 or 11 pairs, obscure abaxially, evident adaxially, or, as reticulate veins, inconspicuous on both surfaces, base obtuse or acuminate and denture, margin entire, apex long acuminate, acumen 1–2 cm, rarely abruptly shortly acuminate or acute. Inflorescences: cymes, fasciculate, axillary at base of current year's branchlets. Male inflorescences: cymes of order 2, 3-flowered; flowers 6-merous; peduncles 4–5 mm, puberulent; pedicels 5–7 mm, flattened, puberulent; calyx puberulent, lobes deltoid or deltoid-ovate, ciliate; petals oblong-elliptic, ca. 4 mm, basally slightly connate; stamens ca. 3 mm; rudimentary ovary globose, punctate. Female flowers not known. Infructescences: 1-fruited cymes, fascicles 3–7-flowered; fruiting pedicels 8–13(–15) mm, puberulent; bracteoles 1(2), subbasal, deltoid. Fruit red, globose, 5–7 mm in diam.; persistent calyx shallowly cup-shaped, ca. 4 mm in diam., puberulent, slightly 4-lobed, lobes orbicular, ciliate; persistent stigma mammilliform, apex truncate, slightly 4-lobed; pyrenes 4 or 5, oblong-trigonous, 5–6 mm, ca. 2.5 mm in diam., smooth, endocarp leathery. Fl. Feb–Apr, fr. May–Dec.

Dense forests, mixed forests, stream banks, valleys; middle elevations. Guangdong, Guangxi, Hainan, S Taiwan [Cambodia, N Vietnam].


徽四冬青 wei ao dong qing

Shrubs evergreen. Branchlets castaneous when dry, terete, slender, puberulent, older ones with elliptic lenticels; terminal buds ovoid-conical, puberulent. Stipules persistent, deltoid, acutely acute; petiole 8–12 mm, abaxially rounded and rugose, adaxially puberulent, broadly and shallowly sulcate; leaf blade brown-olivaceous when dry, broadly elliptic, 5.7 × 2–3 cm, leathery, abaxially punctate, glabrous except on midvein, midvein raised on both surfaces, lateral veins 7–9 pairs, and reticulate veins obscure on both surfaces, base obtuse, margin entire, apex shortly acuminate, acumen retuse. Male flowers not known. Female inflorescences: 1-flowered cymes, fasciculate, axillary on second year's branchlets; bracts broadly deltoid, puberulent, tricuspitate; pedicels 4–5 mm, puberulent; bracteoles 2, subbasal, deltoid, puberulent; flowers yellowish, 4-merous, rarely 5-merous; calyx patelliform, ca. 2.5 mm in diam., puberulent, deeply 4-lobed, lobes obtuse, apiculate, ciliate; corolla rotate, ca. 5 mm in diam., petals free, ovate, ca. 2.5 mm, not ciliate; stamens ca. 1/2 as long as petals, sterile anthers ovoid-cordate, glabrous; ovary ovoid-subglobose, ca. 1 mm in diam., style evident, very short, stigma discoid. Fruit not known. Fl. Jun, fr. unknown.

Evergreen broad-leaved forests, mountains; 500–2000 m. S Guangxi [Xing'an].


凸脉冬青 tu mai dong qing

Shrubs or trees, evergreen, 6–15 m tall. Current year's
branchlets subterete, longitudinally angular, glabrous; second to third year’s branchlets longitudinally fissured; lenticels numerous, conspicuous; leaf scars narrowly crescent-shaped, flattened; terminal buds broadly ovoid, puberulent. Stipules deltoid, apically acute; petiole 1–1.2 cm, glabrous, abaxially rugose, adaxially longitudinally and deeply sulcate; leaf blade brown, shiny when dry, ovate, elliptic, or oblong, 6–9 × 1.5–4.5 cm, thickly leathery, abaxially punctate, both surfaces globose, mid-vein flattened or slightly raised adaxially, lateral veins 9 or 10 pairs, anastomosing near margin, conspicuous abaxially, obscure adaxially, reticulate veins evident abaxially only, base rounded or obtuse, rarely cuneate, margin entire, apex abruptly and shortly acuminate, acumen 5–7 mm, retuse or obtuse. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets, bracts puberulent. Male inflorescences: cymes of order 2, 3-flowered; peduncles 1.5–3 mm; pedicels ca. 2 mm, glabrescent; bracteoles 2, basal; flowers 5- or 6-merous; calyx petaliform, ca. 3.5 mm in diam., shallowly 6-lobed, lobes orbicular, ciliate; corolla rotate, 6–7 mm in diam., oblong, petals ovate-elliptic oblong, ca. 3 mm, basally slightly connate; stamens ca. as long as petals, anthers oblong; rudimentary ovary pubescent, apiculate obtuse. Female inflorescences: 1-flowered cymes; pedicels 5–8 mm, puberulent; bracteoles 2, median; calyx ca. 4 mm in diam., oblong, lobes orbicular, ciliate; petals 6–8, ovate-oblong, ca. 3 mm, basally slightly connate; staminodes ca. 3/4 as long as petals, sterile anther sagittate; ovary ovoid, stigma navel-like. Fruit red, ovoid, 4–6 mm in diam.; persistent calyx explanate, orbicular, lobes ciliate; persistent stigma navel-like; pyrenes 4, ellipsoidal, ca. 4 mm, 1.8–2 mm in diam., both ends pointed, longitudinally a little connate; staminodes ca. 3/4 as long as petals, sterile anthers ovoid; rudimentary ovary subglobose, apex acute; ovary ovoid, stigma navel-like. Fruit red, ovoid, 1.5–2.5 cm, leathery or thickly leathery, abaxially minutely, deeply colored glandular punctate, adaxially glabrous except on midvein, midvein impressed and puberulent adaxially, lateral veins 7–9 pairs, slightly evident abaxially or obscure on both surfaces, reticulate veins absent, base obtuse or rounded, margin entire, apex caudate-acuminate, acumen long, 8–20 mm, narrow. Inflorescences: cymes, pseudopaniculate, fasciculate, or pseudodoracemose, axillary on second year’s branchlets. Male inflorescences: cymes of order (1 or)2, (1 or)3-flowered, pseudopaniculate; rachis 4–15 mm, puberulent, slightly colored glandular punctate, apiculate; peduncles ca. 4 mm; pedicels ca. 2 mm, puberulent or glabrous; bracteoles 2, basal, or absent; flowers milky white, 4- or 5-merous; calyx petaliform, ca. 2.5 mm, deeply 4-lobed, lobes eroded, apex obtuse, minutely ciliate; corolla rotate, petals ovate, basally slightly connate; stamens 4, slightly shorter than petals, anthers ovoid-oblong; rudimentary ovary subglobose, apex truncate, 4-sulcate. Female inflorescences: 1-flowered cymes, fasciculate or pseudodoracemose, densely puberulent or glabrous; pedicels 2–4 mm, puberulent or glabrous; flowers 4- or 5-merous; calyx lobes deltoid, apex acute, ciliate or glabrous; corolla erect, petals ovate-oblong, ca. 2 × 1 mm; staminodes ca. 3/4 as long as petals, sterile anthers ovoid; ovary subglobose, ca. 2 mm in diam., stigma thickly discoid, convex. Fruit red, globose, 3–4 mm in diam.; persistent calyx expanate, 2–3 mm in diam.; persistent stigma subcolumnar or discoid, convex, style evident; pyrenes 4 or 5, ellipsoidal, ca. 2.5 mm, 1–3 mm in diam., smooth, abaxially 3-sulcate, not sulcate, endocarp leathery. Fl. Jul, fr. Sep–Oct.

- Evergreen broad-leaved forests, mixed forests, mountain slopes; 1300–2800 m. Yunnan.

1a. Branchlets and pedicels puberulent

................................. 168a. var. longecaudata

1b. Branchlets and pedicels glabrous ............ 168b. var. glabra


长尾冬青 chang wei dong qing

Trees or shrubs, evergreen, (1–)3–10 m tall. Branchlets gray to brownish when dry, terete, slender; second to third year’s branchlets with conspicuous, circular lenticels; leaf scars semi-circular, convex; current year’s branchlets longitudinally plicate-sulcate, puberulent or glabrous; terminal buds conical, small, bud scales puberulent, ciliate. Stipules persistent, subuliform-deltoid; petiole 6–10 mm, abaxially longitudinally plicate, adaxially longitudinally sulcate, puberulent; leaf blade adaxially green, slightly shiny or opaque, ovate-elliptic or elliptic, 4–9 × 1–2.5 cm, leathery or thickly leathery, abaxially minutely, deeply colored glandular punctate, adaxially glabrous except on midvein, midvein impressed and puberulent adaxially, lateral veins 7–9 pairs, slightly evident abaxially or obscure on both surfaces, reticulate veins absent, base obtuse or rounded, margin entire, apex caudate-acuminate, acumen long, 8–20 mm, narrow. Inflorescences: cymes, pseudopaniculate, fasciculate, or pseudodoracemose, axillary on second year’s branchlets. Male inflorescences: cymes of order (1 or)2, (1 or)3-flowered, pseudopaniculate; rachis 4–15 mm, puberulent or glabrous; bracts oblong-ovate, thickly leathery, sparsely puberulent, ciliate, apex acute; peduncles ca. 4 mm; pedicels ca. 2 mm, puberulent or glabrous; bracteoles 2, basal, or absent; flowers milky white, 4- or 5-merous; calyx petaliform, ca. 2.5 mm, deeply 4-lobed, lobes eroded, apex obtuse, minutely ciliate; corolla rotate, petals ovate, basally slightly connate; stamens 4, slightly shorter than petals, anthers ovoid-oblong; rudimentary ovary subglobose, apex truncate, 4-sulcate. Female inflorescences: 1-flowered cymes, fasciculate or pseudodoracemose, densely puberulent or glabrous; pedicels 2–4 mm, puberulent or glabrous; flowers 4- or 5-merous; calyx lobes deltoid, apex acute, ciliate or glabrous; corolla erect, petals ovate-oblong ca. 2 × 1 mm; staminodes ca. 3/4 as long as petals, sterile anthers ovoid; ovary subglobose, ca. 2 mm in diam., stigma thickly discoid, convex. Fruit red, globose, 3–4 mm in diam.; persistent calyx expanate, 2–3 mm in diam.; persistent stigma subcolumnar or discoid, convex, style evident; pyrenes 4 or 5, ellipsoidal, ca. 2.5 mm, 1–3 mm in diam., smooth, abaxially 3-sulcate, not sulcate, endocarp leathery. Fl. Jul, fr. Sep–Oct.

- Evergreen broad-leaved forests, mixed forests, mountain slopes, 500–1600 m. E and N Guangdong (Dabu, Ruyuan), Hainan [Vietnam].


粗毛冬青 cu mao dong qing

Trees evergreen, small, ca. 8.5 m tall. Branchlets, terminal buds, pedioles, inflorescence bracts, and calyx densely gray-white villous-striate; branchlets ashy white, terete, striate; terminal buds shortly conical, outer scales rostrate-curved. Stipules minute and thinly membranous, or caducous; petiole 7–10 mm, adaxially deeply sulcate; leaf blade elliptic, 4–7.5 × 1–2 cm, subleathery, amber punctate abaxially, midvein glabrous, deeply impressed adaxially, lateral veins 6–8 pairs, slightly raised abaxially, obscure adaxially, base acute to attenuate, margin entire or subentire, shallowly undulate, on distal half with glandular black tips, apex acuminate or caudate-acuminate, acumen 5–10–15 mm, mucronate. Flowers not known. Infructescences: 1-fruited cymes, solitary or fasciculate, fascicles 2–4-fruited, axillary on current year’s branchlets; axis ca. 1 mm, or absent; bracts ovate, ca. 0.5 mm, apex acute; fruiting pedicels 2–4 mm. Fruit red, globose-quadrangular, 2.5–3 mm, 1.5–2 mm in diam., deeply 4–8-sulcate; exocarp very thin, rugose and sulcate, villose-striose with dense, rigid, erect and appressed, gray-white trichomes; persistent calyx expanate, patelliform, 1–2 mm in diam., 4-lobed, lobes broadly ovate, apex obtuse; persistent stigma black, thickly discoid, shallowly 4-lobed; pyrenes 4, broadly ovate, trigonous, 2–2.5 mm, 1.5–2 mm in diam., both ends obtuse or rounded, abaxially 1-sulcate, 3–5-sulcate, striae parallel or curved, laterally ridged, not sulcate, 2- or 3-sulcate and reticulate-pitted, endocarp leathery. Fl. unknown, fr. Jul.

- Forests, mountains; 600–1400 m. Guangdong (Xinfeng).

168a. var. longecaudata

................................. 168a. var. longecaudata

168b. var. glabra

原变种 yuan bian zhong

长尾冬青 chang wei dong qing (yuan bian zhong)

Shrubs or trees. Branchlets puberulent. Leaf blade leathery, lateral veins slightly evident abaxially. Pedicels puberulent. Fruit: persistent calyx ca. 3 mm in diam.; pyrenes 5.

无毛长尾冬青  wu mao chang wei dong qing


Evergreen broad-leaved forests, mountain slopes; 100–1800 m. SW Fujian (Shanghang), Guangdong, Guangxi, Guizhou (Dushan), Hunan (Yanling), Zhejiang.


皱柄冬青  zhou bing dong qing


Trees evergreen, 4–13(–15) m tall; bark gray. Branchlets brown, slender, glabrous or sparsely puberulent; third year’s branchlets longitudinally fissured, with numerous, rounded lenticels; leaf scars raised, semicircular; current year’s branchlets longitudinally angular and sulcate; terminal buds conical, glabrous, apically acute, bud scales ciliate. Stipules broadly deltoid; petiole 7–15(–18) mm, abaxially transversely rugose, adaxially glabrous or sparsely puberulent, narrowly and deeply sulcate; leaf blade abaxially greenish, adaxially green, shiny, elliptic, broadly elliptic, or ovate-elliptic, 4–11 × 2–4.5 cm, thinly leathery or leathery, abaxially brown glandular punctate, rarely not punctate, both surfaces glabrous, midvein slightly raised or flat adaxially, lateral veins 6–9 pairs, raised abaxially, evident or obscure adaxially, anastomosing near margin, reticulate veins obscure, base obtuse, rounded, or broadly cuneate, margin entire, sometimes slightly revolute, apex (shortly or) long acuminate, acumen to 1–1.5 cm. Male flowers not known. Female inflorescences: cymes of order 1 or 2, 1(or 3)-fruited; fruiting pedicels 3–5(-8) mm; cymes of order 2: peduncles ca. 5 mm. Fruit globose, ca. 4 mm in diam.; persistent calyx explanate, 4- or 5-lobed, ciliate; persistent stigma slightly raised, discoid, 4-lobed; pyrences 4(or 5), subglobose, 1.7–2 mm, 1.2–1.8 mm in diam., abaxially 3-striate, not sulcate, laterally smooth, endocarp leathery. Fl. and fr. Aug.–Oct.

Trees, rarely shrubs, evergreen, ca. 9 m tall; bark brown. Current year’s branchlets slender, longitudinally rugose, pubescent; third year’s branchlets terete, pubescent; leaf scars raised, linear; lenticels obscure; terminal buds conical, densely pubescent. Stipules persistent, deltoid, pubescent; petiole ca. 5 mm, pubescent, longitudinally and shallowly sulcate adaxially; leaf blade adaxially olivaceous, slightly shiny when dry, elliptic, obovate-elliptic, or subrhombic; 2–4.5 × 1–2 cm, leathery, abaxially glandular punctate, both surfaces sparsely puberulent, impressed adaxially, lateral veins 4 or 5 pairs, slightly evident abaxially, obscure adaxially, reticulate veins obscure, base cuneate, margin entire, apex shortly acuminate or obtuse, acumen retuse. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets. Male inflorescences: cymes of order 1(or 2), 1(or 3)-fruited; fruiting pedicels 3–5(-8) mm; cymes of order 2: peduncles ca. 5 mm. Fruit globose, ca. 4 mm in diam.; persistent calyx explanate, 4- or 5-lobed, ciliate; persistent stigma slightly raised, discoid, 4-lobed; pyrences 4(or 5), subglobose, 1.7–2 mm, 1.2–1.8 mm in diam., abaxially 3-striate, not sulcate, laterally smooth, endocarp leathery. Fl. and fr. Aug.–Oct.


海岛冬青  hai dao dong qing


Shrubs or trees, evergreen, to 12 m tall; bark gray-brown. Branchlets slender, puberulent; third year’s branchlets longitudinally rugose; leaf scars raised, semicircular; lenticels conspicuous; current year’s branchlets longitudinally ridged; terminal buds conical, small, puberulent. Stipules deltoid, puberulent, apically acute; petiole 4–8 mm, adaxially longitudinally broad and shallowly sulcate, puberulent; leaf blade brown-green when dry on both surfaces, adaxially slightly shiny, broadly elliptic or subrhombic-elliptic, 3–5 × 1.5–2.5 cm, leathery, abaxially minutely black glandular punctate, adaxially glabrous except on midvein, midvein slightly raised abaxially, slightly impressed or flattened and puberulent adaxially, lateral veins 4–6 pairs, obscure on both surfaces, reticulate veins obscure, base broadly cuneate or acute, margin entire, apex abruptly shortly acuminate, tip obtuse and retuse. Inflorescences: cymes, fasciculate, axillary. Male inflorescences: cymes of order 2 or 3, 3–7-flowered, puberulent or rarely glabrescent; bracts puberulent, tricuspidate; peduncles 4–5 mm; pedicels 2–3 mm; bracteoles minute, puberulent; flowers 4- or 5-merous; calyx patelliform, ca. 2 mm in diam., puberulent, shallowly 4-lobed, rarely 5-lobed, lobes orbicular, densely ciliate; corolla rotate, 4–5 mm in diam., petals 4, oblong, ca. 1.7 mm, basally slightly connate; stamens shorter than petals, anthers oblong; rudimentary ovary subglobose, central part slightly retuse. Female flowers not known. Inflorescences: cymes of order 1(or 2), 1(or 3)-fruited, fruiting pedicels 3–5(-8) mm; cymes of order 2: peduncles ca. 5 mm. Fruit globose, ca. 4 mm in diam.; persistent calyx explanate, 4- or 5-lobed, ciliate; persistent stigma slightly raised, discoid, 4-lobed; pyrences 4(or 5), subglobose, 1.7–2 mm, 1.2–1.8 mm in diam., abaxially 3-striate, not sulcate, laterally smooth, endocarp leathery. Fl. and fr. Aug.–Oct.

Dense forests; 100–1800 m. SW Fujian (Shanghang), Guangdong, Hainan (Baoting, Ledong), Taiwan (Taizhong, Xinzhu) [Japan (Ryukyu Islands)].


黄杨冬青 huang yang dong qing

Trees, rarely shrubs, evergreen, ca. 9 m tall; bark brown. Current year’s branchlets slender, longitudinally rugose, pubescent; third year’s branchlets terete, pubescent; leaf scars raised, linear; lenticels obscure; terminal buds conical, densely pubescent. Stipules persistent, deltoid, pubescent; petiole ca. 5 mm, pubescent, longitudinally and shallowly sulcate adaxially; leaf blade adaxially olivaceous, slightly shiny when dry, elliptic, obovate-elliptic, or subrhombic; 2–4.5 × 1–2 cm, leathery, abaxially glandular punctate, both surfaces sparsely puberulent, impressed adaxially, lateral veins 4 or 5 pairs, slightly evident abaxially, obscure adaxially, reticulate veins obscure, base cuneate, margin entire, apex shortly acuminate or obtuse, acumen retuse. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets. Male inflorescences: cymes of order 1(or 2), 1(or 3)-fruited; fruiting pedicels 3–5(-8) mm; cymes of order 2: peduncles ca. 5 mm. Fruit globose, ca. 4 mm in diam.; persistent calyx explanate, 4- or 5-lobed, ciliate; persistent stigma slightly raised, discoid, 4-lobed; pyrences 4(or 5), subglobose, 1.7–2 mm, 1.2–1.8 mm in diam., abaxially 3-striate, not sulcate, laterally smooth, endocarp leathery. Fl. and fr. Aug.–Oct.

● Evergreen broad-leaved forests, mixed forests, mountain valleys; 1300–2800 m. Yunnan.
persistent. Fruit red, globose, 4–5 mm in diam.; persistent calyx pedicels ca. 5 mm, densely puberulent; bracteoles 2, submedian, explanate, ca. 2.5 mm in diam.; persistent calyx puberulent, (4 or)5-lobed, lobes broadly deltoid-ovate or suborbicular, unequal, 3 larger, 2 smaller, ciliate; persistent stigma capitate; pyrenes 4 or 5, ovoid, ca. 3 mm, ca. 2 mm in diam., abaxially palmately striate and sulcate, laterally smooth, neither striate nor sulcate, endocarp leathery. Fl. unknown, fr. Aug.


保亭冬青 bao ting dong qing

Shrubs or trees, evergreen, 3–8 m tall, glabrous throughout; bark gray-black. Branchlets gray-white, slender, leaf scars raised, circular; terminal buds when present globose, glabrous. Stipules often obscure; petiole 4–5 mm, adaxially longitudinally sulcate; leaf blade abaxially greenish, adaxially green, slightly shiny, oblong-elliptic or elliptic-lanceolate, 4–5.5 × 1.5–2.5 cm, leathery, abaxially brown punctate, midvein impressed adaxially, laterally veins 4 or 5 pairs, evident or obscure abaxially, obscure adaxially, reticulate veins sometimes evident abaxially, base obtuse or cuneate, often decurrent, margin entire, apex obtuse, rounded, or sometimes retuse. Male inflorescences: cymes of order 2, 3-flowered, fasciculate, axillary on second year’s branchlets; pedicels 3–4 mm; pedicels ca. 1 mm, glabrous; flowers white, 4-merous; calyx ca. 2 mm in diam., glabrous, deeply 4-lobed, lobes erose at margin, apex rounded or obtuse, ciliate; corolla ca. 5 mm in diam., petals obovate, ca. 2 mm, basally slightly connate; stamens ca. 2/3 as long as petals; rudimentary ovary subovoid, papillate, rostrate. Female flowers not known. Infructescences: 1-fruited cymes, solitary or few fascicled, fascicles 3-4-fruited, axillary; fruiting pedicels 3–5 mm; bracteoles 2, median. Fruit red, globose, ca. 5 mm in diam.; persistent calyx explanate, ca. 2.5 mm in diam., glabrous, 4-lobed, lobes orbicular or deltoid, ciliate; persistent style evident, stigma capitate; pyrenes 4, broadly ellipsoid, ca. 3.7 mm, ca. 2.3 mm in diam., abaxially longitudinally 3- or 4-striate, not sulcate, striae adhering to endocarp, not easily deciduous, endocarp leathery. Fl. Oct–Dec, fr. Nov–Jan.


石生冬青 shi sheng dong qing

Shrubs evergreen, ca. 3 m tall. Current year’s branchlets slender, longitudinally ridged, gray-brown, puberulent; second year’s branchlets gray, terete, lenticellate. Petiole 4–6 mm, abaxially rounded, rugose, adaxially flattened or slightly longitudinally sulcate; leaf blade abaxially brownish, adaxially olivaceous, shiny when dry, broadly elliptic, 4–5.5 × 2–3.5 cm, leathery, abaxially glabrous, adaxially puberulent or glabrescent, midvein sulcate adaxially, lateral veins 4 or 5 pairs, slightly evident and rugose abaxially, obscure adaxially, reticulate veins obscure on both surfaces, base obtuse, margin entire, apex obtuse or rounded. Flowers not known. Infructescences: 1-fruited cymes, fasciculate, axillary or lateral at base of young branchlets; fruiting pedicels 5–9 mm, puberulent, median or above; bracteoles 2, ovate, puberulent. Fruit (immature) globose, ca. 4 mm in diam.; persistent calyx puberulent, (4 or)5-lobed, lobes broadly deltoid-ovate or suborbicular, unequal, 3 larger, 2 smaller, ciliate; persistent stigma capitate; pyrenes 4 or 5, ovoid, ca. 3 mm, ca. 2 mm in diam., abaxially palmately striate and sulcate, laterally smooth, neither striate nor sulcate, endocarp leathery. Fl. Apr–May, fr. Jul–Oct.

● Dense or sparse forests, mountains; 800–1500 m. Fujian, Guangdong, S Guangxi (Shangsi).


贵州冬青 gui zhou dong qing

Trees or shrubs evergreen. Current year’s branchlets brown, subterete, slender, smooth and shiny, longitudinally sulcate, punctate, puberulous; second year’s branchlets gray, terete. Petiole 5–8 mm, adaxially narrowly sulcate or subflattened, glabrous; leaf blade abaxially brownish, adaxially olivaceous-brown when dry, elliptic-oblong, 5–9 × 2–2.5 cm, papery, both surfaces glabrous, midvein raised on both surfaces, lateral veins 9–12 pairs, slightly raised on both surfaces, reticulate veins evident on both surfaces, base obtuse, margin subentire, apex acuminate or long acuminate, acumen 8–13 mm. Flowers not known. Infructescences: 1-fruited cymes, fasciculate, fascicles 3–5-fruited, axillary; fruiting pedicels 2–3 mm, longitudinally angular and sulcate, puberulent or glabrescent; bracteoles 2, basal or subbasal, deltoid. Fruit black when dry, globose, ca. 4 mm in diam.; persistent calyx glabrous, 4-lobed, lobes suborbicular; persistent stigma discoid; pyrenes 4, ellipsoid, ca. 3 mm, ca. 1 mm in diam., abaxially palmately striate and slightly sulcate, endocarp woody. Fl. and fr. unknown.

● Guizhou.

175. Ilex oligodonta Merrill & Chun, Sunyatsenia 1: 67. 1930.

流齿冬青 shu chi dong qing

Shrubs evergreen, 1–3(–5) m tall. Branchlets gray or yellowish, terete, puberulent; lenticels numerous and conspicuous; leaves scars circular, convex; current year’s branchlets slender, longitudinally angular; terminal buds conical, densely puberulent. Stipules deltoid, minute, puberulent; petiole 3–6 mm, puberulent, longitudinally and broadly sulcate adaxially; leaf blade brown-olivaceous when dry, shiny or opaque adaxially, oblong-elliptic or oblong-lanceolate, 2.5–7.5 × 1–2 cm, leathery, abaxially puberulent or glabrescent, adaxially slightly puberulent or only midvein puberulent, midvein slightly raised abaxially, glabrous or puberulent, flat or slightly impressed adaxially, lateral veins 5–7 pairs, obscure on both surfaces, reticulate veins absent, base obtuse or broadly cuneate, margin entire or with 1 or 2 bristly teeth at distal end, apex long acuminate, acumen 7–15 mm. Inflorescences: cymes, fasciculate, axillary on leaves or scales, puberulent. Male inflorescences: cymes of order 2 or 3, 3–7-flowered; peduncles 3–6 mm; secondary axis 1–2 mm; pedicels 1–3 mm; bracteoles 1 or 2, basal, ciliate; flowers white, fragrant, 4-merous; calyx petalliform, puberulent, shallowly 4-lobed, lobes ovate, ciliate; corolla rotate, ca. 5 mm in diam., petals ovate-oblong, ca. 2 mm, basally slightly connate; stamens
ovoid, ca. 1.8 mm, ca. 1.5 mm in diam., stigma discoid, convex, cymes; calyx and corolla as in male flowers; staminodes ca. 2/3 ca. as long as petals, anthers oblong, ca. 1 mm; rudimentary known. Fl. May, fr. Jul–Oct. 4-lobed. Fruit red, globose; persistent calyx explanate, lobes orbiculare, ciliate; persistent stigma discoid, convex; pyrenes unknown. Fl. May, fr. Jul–Oct. 2n = 40*.

- Dense forests, thickets, mountains; 800–1200 m. Fujian, Guangdong, S Hunan (Yizhang).


亮叶冬青 liang ye dong qing

Trees evergreen, small, ca. 6 m tall. Current year’s branchlets longitudinally angular, puberulent or glabrescent; second year’s branchlets gray, glabrous. Petiole 6–8 mm, puberulent, longitudinally sulcate adaxially; leaf blade abaxially brown, adaxially dark oliveaceous, very nitid or nitid when dry, elliptic or oblong-elliptic, rarely ovate-elliptic, 5.5–9 × 2.7–4 cm, leathery, abaxially glabrous except on midvein, midvein proximal half adaxially raised, distal half gradually flat or impressed, puberulent, lateral veins 8–10 pairs, evident or obscure adaxially, reticulate veins obscure on both surfaces, base obtuse or cuneate, rarely subrounded, margin subentire, sometimes sparsely inconspicuously serrulate, apex acuminate. Flowers not known. Infuctescences: 1-fruited cymes, fasciculate, fascicles 2–4-fruited, axillary; fruiting pedicels 8–10 mm. Red fruit. Glabrous; persistent calyx patelliform, glabrous, 4-lobed, lobes suborbicular or broadly deltoid-ovate, not ciliate; persistent stigma discoid or capitulate; pyrenes 4, ovoid, ca. 4 mm, ca. 2.5 mm in diam., abaxially slightly convex, neither striate nor sulcate, endocarp leathery. Fl. unknown, fr. Aug.–Oct.

- Dense or sparse forests, mixed forests, mountain slopes; 800–1300 m. Guangxi, S Hunan (Yizhang), NE Jiangxi (Guangfeng).


缙云冬青 jin yun dong qing

Trees evergreen, ca. 6 m tall. Current year’s branchlets longitudinally ridged and sulcate, sparsely puberulent or subglabrous; second to third year’s branchlets terete, smooth, glabrous, lenticellate. Stipules deltoid, minute; petiole 4–6 mm, abaxially rugose, glabrous, adaxially sulcate; leaf blade abaxially greenish, adaxially deep green, shiny, oblong or obovate-elliptic, 6–12 × 3–4.5 cm, leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 10–14 pairs, obscure abaxially slightly raised adaxially, reticulate veins obscure, base broadly cuneate to subrounded, margin entire on proximal half, serrulate with 1 or 2 pairs of teeth on distal half, apex acuminate. Flowers not known. Infuctescences: 1-fruited cymes, fasciculate, rarely solitary, fascicles 2–3-fruited, axillary; fruiting pedicels 6–7 mm, puberulent. Fruit red, globose, 4–5 mm in diam.; persistent calyx 4- or 5-lobed, lobes deltoid, puberulent; persistent stigma capitulate or mammilliform; pyrenes 4, ovoid, ca. 2.5 mm, 1–1.2 mm in diam., smooth, abaxially slightly convex, 3-striate, endocarp leathery. Fl. unknown, fr. Nov.

- Evergreen broad-leaved forests, mountains; 700–800 m. Chongqing.


拟长尾冬青 ni chang wei dong qing

Shrubs evergreen, ca. 2 m tall. Branchlets yellowish brown or gray; old branchlets terete, leaf scars convex, semicircular; lenticels convex, elliptic; current year’s branchlets longitudinally angular and sulcate, puberulent; terminal buds narrowly conical, small, densely puberulent. Petiole 4–6 mm, abaxially transversely rugose and glabrous, adaxially longitudinally broadly sulcate, puberulent; leaf blade adaxially oliveaceous when dry, elliptic or oblong-elliptic, 4–6 × 1.5–2.2 cm, leathery, abaxially glabrous, not punctate, adaxially glabrous except on midvein, midvein flat or slightly raised adaxially, lateral veins 7–10 pairs, evident abaxially, obscure adaxially, reticulate veins obscure on both surfaces, base obtuse, margin entire, apex long acuminate, acumen 5–10 mm. Flowers not known. Infuctescences: 1-fruited cymes, solitary or few fascicled, fascicles 3-fruited, axillary on current year’s branchlets; fruiting pedicels 2.5–4.5 mm, quadrangular, glabrous. Fruit globose, 3.5–4 mm in diam.; persistent calyx patelliform, deeply 4- or 5-lobed, lobes broadly deltoid, minutely ciliate; persistent stigma thickly discoid, shallowly lobed; pyrenes 4 or 5, oblong-ellipsoidal, ca. 3.5 mm, ca. 1.5 mm in diam., abaxially shallowly 3- or 4-striate, not sulcate or shallowly sulcate, endocarp leathery. Fl. unknown, fr. Aug.

- Mountain forests; ca. 2600 m. W Yunnan (Longling).


早田氏冬青 zao tian shi dong qing

Trees evergreen, ca. 12 m tall; bare pale gray-black. Branchlets slender, puberulent; second to third year’s branchlets with numerous large raised lenticels and leaf scars; current year’s branchlets longitudinally ridged and sulcate; terminal buds conical, puberulent, apically acute. Stipules narrowly deltoid, apically acute; petiole 4–7 mm, pubescent, longitudinally shallowly sulcate adaxially, narrowly winged by decurrent leaf base on distal half; leaf blade adaxially oliveaceous when dry, elliptic or ovate-elliptic, 3–5 × 1–2 cm, leathery, adaxially glabrous except on midvein, midvein raised on both surfaces, puberulent adaxially, lateral veins 7 or 8 pairs, obscure on both surfaces, base obtuse or acute, margin entire, apex long acuminate, acumen 5–10 mm, tip obtuse or retuse. Flowers not known. Infuctescences: 1-fruited cymes, fasciculate or pseudofasciculate, axillary on second year’s branchlets; central axis ca. 4 mm; bracts narrowly deltoid, pubescent; fruiting pedicels 5–7 mm, longitudinally striate and sulcate, pubescent; bracteoles 2, mediant. Fruit red, globose, 4–7 mm in diam.; persistent calyx horizontally stretched, subexplanate-patelliform, ca. 2 mm in diam., quadrangular, 4-lobed, lobes orbicular, ciliate; persistent stigma capitulate; pyrenes 4, ellipsoidal, ca. 4 mm, 1.5–2 mm in diam., abaxially convex, longitudinally 3-striate, laterally smooth, endocarp leathery. Fl. summer, fr. autumn to Feb.

Forests; 200–300 m. Taiwan (Nantou, Taizhong, Yilan) [Japan].

尾叶冬青  
wei ye dong qing

Shrubs or trees, evergreen, 2–10 m tall; bark gray-white, smooth. Branchlets gray-brown, terete, smooth, glabrous; lenticels absent; leaf scars slightly raised, semicircular; current year’s branchlets longitudinally angular and sulcate, glabrous; terminal buds convex, scales glabrous, ciliate. Stipules deltoid, minute, apically acute; petiole 5–9 mm, rugose abaxially, glabrous, longitudinally sulcate adaxially; leaf blade abaxially greenish, adaxially oliveaceous-brown, shiny, ovate or obovate-oblong, 3–7(–8) × (1–)1.5–3.5(–4) cm, thickly leathery, both surfaces glabrous, midvein slightly raised abaxially, flat adaxially, lateral veins 7 or 8 pairs, slightly raised, evident or obscure on both surfaces, anastomosing near margin, reticulate veins absent, base obtuse, rarely rounded, margin entire, apex abruptly caudate-acuminate, acumen 6–13 mm, often falcate. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets; bracts deltoid, often tricispicate; flowers white, 4-merous. Male inflorescences: cymes of order 2 or 3, 3–5-flowered, peduncles 3–8 mm; secondary axis 1–2 mm or shorter; pedicels 2–8(–15) mm; bracteoles 2, basal, or absent; calyx patelliform, 4-lobed, lobes deltoid, ciliate; corolla rotate, 4–5 mm in diam., petals oblong, ca. 2 × 1.5 mm, basally slightly connate, margin entire or erose, ciliate or not; stamens shorter than petals, anthers oblong; rudimentary ovary subglobose, ca. 1 mm in diam., apex slightly lobed. Female inflorescences: 1-flowered cymes; pedicels (2–)4–7 mm, glabrous; bracteoles 2, submedian; calyx and corolla as in male flowers; staminodes ca. 1/3 as long as petals; sterile anthers sagittate, ovoid-elliptic, or elliptic-lanceolate, 5–10 × 1.5–3.5 cm, leathery, both surfaces glabrous, midvein deeply impressed adaxially, lateral veins 9 or 10 pairs, anastomosing near margin, obscure on both surfaces, reticulate veins obscure abaxially, evident adaxially, base rounded, rarely obtuse, margin entire, apex caudate-acuminate, acumen 8–15 mm. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets; basal bracts leathery, tricispicate; flowers 4-merous. Male inflorescences: cymes of order 2 or 3, 3–5-flowered; peduncles 3–5 mm; pedicels ca. 3 mm; bracteoles 2, basal, or absent; calyx patelliform, ca. 2.5 mm in diam., apex apiculate; ovary ovoid, ca. 2 mm in diam.; stigma thickly deltoid, puberulent. Fruit globose, ca. 4 mm in diam.; persistent calyx explanate, ca. 2.5 mm in diam., 4-lobed, lobes deltoid, ciliate; corolla rotate, ca. 4 mm in diam., petals ovate, 2–2.5 mm, basally rather connate; stamens nearly as long as petals; rudimentary ovary pulvinate, rostellate. Female inflorescences: 1-flowered cymes; pedicels ca. 5 mm; bracteoles 2, basal, apex acute, ciliate; calyx and corolla as in male flowers; staminodes ca. 1/3 as long as petals, sterile anthers sagittate, glabrous, apex puberulent, ovary subglobose, styliferous, stigma capitulate, 4-lobed. Fruit globose, ca. 5 mm in diam.; persistent calyx explanate, ca. 3 mm in diam.; persistent stigma discoid; pyrenes 2, ovoid-trigonous, ca. 2.5 mm, ca. 1.5 mm in diam., abaxially slightly longitudinally raised, 3-striate, not sulcate, laterally smooth, endocarp leathery. Fruits May–Jun, fr. Aug–Oct.

- Mountain forests, broad-leaved forests in valleys, thickets, hills; 400–1900 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, NE Yunnan, Zhejiang.

1a. Pedicels of male flowers 2–8 mm, margin of petals entire; pedicels of female flowers 4–7 mm.  180a. var. *wilsonii*

1b. Pedicels of male flowers 8–15 mm, margin of petals erose; pedicels of female flowers 2–3 mm.  180b. var. *handel-mazzettii*

180a. *Ilex wilsonii* var. *wilsonii*

尾叶冬青(原变种)  
wei ye dong qing (yuan bian zhong)

*Ilex memecylifolia* Champion ex Bentham var. *plana* Loesener.

Leaf blade 3–4(–6) × 1–2(–2.6) cm, with longer acumen. Male flowers: pedicels 2–8 mm; petal margin not ciliate, entire. Female flowers: pedicels 4–7 mm.

- Broad-leaved forests in valleys, thickets, hills; 400–1900 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, NE Yunnan, Zhejiang.


武冈尾叶冬青  
wu gang wei ye dong qing

Leaf blade 6–8 × (2–)2.5–4 cm, with shorter acumen. Male flowers: pedicels 8–15 mm; petal margin erose, minutely ciliate. Female flowers: pedicels 2–3 mm.

- Mountain forests; 900–1300 m. SW Hunan (Wugang).


福建冬青  
fu jian dong qing

Shrubs evergreen, 3–4 m tall, glabrous throughout or puberulent on current year’s branchlets and pedicels. Branchlets gray, terete, slender, longitudinally fissured and rugose, lenticels absent; current year’s branchlets longitudinally striate and sulcate; terminal buds conical, glabrous. Stipules deltoid, minute, apically acute; petiole 5–7 mm, shallowly sulcate, distal half rugose, winged by decurrent leaf blade; leaf blade brown-oliveous when dry, opaque on both surfaces, ovate, ovate-oblong, ovate-elliptical, or elliptic-lanceolate, 5–10 × 1.5–3.5 cm, leathery, both surfaces glabrous, midvein deeply impressed adaxially, lateral veins 9 or 10 pairs, anastomosing near margin, obscure on both surfaces, reticulate veins obscure abaxially, evident adaxially, base rounded, rarely obtuse, margin entire, apex caudate-acuminate, acumen 8–15 mm. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets; bracts deltoid, often tricispicate; flowers 4-merous. Male inflorescences: cymes of order 2 or 3, 3–5-flowered; peduncles 3–5 mm; pedicels ca. 3 mm; bracteoles 2, basal, or absent; calyx patelliform, ca. 2.5 mm in diam., glabrous, 4-lobed, lobes deltoid, ovate, margin erose, ciliate; corolla rotate, ca. 4 mm in diam., petals ovate, 2–2.5 mm, basally rather connate; stamens nearly as long as petals; rudimentary ovary pulvinate, rostellate. Female inflorescences: 1-flowered cymes; pedicels ca. 5 mm; bracteoles 2, basal, apex acute, ciliate; calyx and corolla as in male flowers; staminodes ca. 1/3 as long as petals, sterile anthers sagittate, glabrous, apex puberulent, ovary subglobose, styliferous, stigma capitulate, 4-lobed. Fruit globose, ca. 5 mm in diam.; persistent calyx explanate, ca. 3 mm in diam.; persistent stigma discoid; pyrenes 2, ovoid, ca. 2.5 mm, ca. 2 mm in diam., abaxially reticulately striate, not sulcate. Fruits Apr–Jun, fr. Aug–Oct.

- Forests, thickets on mountains; 600–900 m. Fujian.

There are two forms distinguishable by the indumentum of the current year’s branchlets: *f. fukienensis* has glabrous branchlets, while *f. puberula* C. J. Tseng & H. H. Liu (Bull. Bot. Res., Harbin 1(1–2): 34. 1981) has puberulent branchlets.


滇西冬青  
dian xi dong qing

Shrubs or trees, evergreen, ca. 7 m tall. Young branchlets thick, longitudinally angular and sulcate, puberulent or glabrous; older branchlets longitudinally fissured, rugose; lenticels conspicuously raised; leaf scars deltoid, very convex; terminal buds...
Trees, to 6 m tall. Branchlets glabrous. Leaf blade ovate, elliptic, or oblong, midvein glabrous adaxially.
as petals, sterile anthers sagittate; ovary subglobose, ca. 1.5 mm in diam. Fruiting pedicel 3–4 mm. Fruit red, globose, 3–4 mm in diam.; exocarp membranous; mesocarp fleshy; persistent calyx explanate, patelliform, ca. 3 mm in diam., ciliate; persistent stigma mammilliform; pyrenes 5 or 6, oblong, ca. 1.5 mm, ca. 0.5 mm in diam., both ends obtuse, smooth, abaxially and laterally longitudinally 1-striate, endocarp leathery. Fl. Jul, fr. Sep–Nov.

Shrub forests on mountain slopes; (1800–)2600–3000 m. Yunnan [N Myanmar].

平核冬青 ping he dong qing

Shrubs evergreen. Second year’s branchlets gray-brown, terete, longitudinally fissured; current year’s branchlets gray-brown, ridged, puberulent or glabrescent; terminal buds conical, puberulent. Petiole 5–6 mm, puberulent or glabrescent; leaf blade abaxially brownish, adaxially olivaceous, shiny when dry, elliptic or oblong-elliptic, rarely ovate-elliptic, 7–8.5 × ca. 3 cm, papyry, both surfaces glabrous, midvein raised on both surfaces, lateral veins 8–10 pairs, conspicuous abaxially, obscure adaxially, base obtuse, margin entire, apex abruptly ciliate-acuminate, acumen 1–1.5 cm. Flowers not known. Infructescences: 1-fruited cymes, fasciculate, fascicles 2- or 3-fruited, axillary; fruiting pedicels 4–6 mm, puberulent; persistent bracteoles 2, deltoid near base. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets, pubescent or glabrescent, pubescent. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles ca. 1 mm; pedicels ca. 1 mm; flowers pink, 4(or 5)-merous; calyx patelliform, ca. 1.5 mm in diam., pubescent, slightly 4-lobed, lobes orbicular, margin erose, ciliate; corolla rotate, ca. 4.5 mm in diam., petals elliptic, basally slightly conuate, not ciliate; stamens ca. 1/2 as long as petals, anthers oblong; rudimentary ovary rostellate. Female inflorescences: 1-flowered cymes, fascicles 2- or 3-flowered; pedicels ca. 1 mm, bracteoles 2, above middle; calyx and corolla as in male flowers; staminodes ca. 3/4 as long as petals, sterile anthers coriaceous; ovary ovoid, ca. 0.7 mm in diam.; style evident, stigma discoid, convex. Fruit red, globose, ca. 3.5 mm in diam.; fruiting pedicel ca. 1 mm, pubescent; persistent calyx cup-shaped, pubescent, ciliate; persistent stigma thickly discoid or capitate, 4(or 5)-lobed; pyrenes 4, broadly ellipsoidal, ca. 3 mm, ca. 2 mm in diam., both ends acute, cross section trigonous, abaxially 3-striate, not sulcate, laterally smooth, endocarp leathery. Fl. Apr–Aug, fr. Aug–Dec.

● Forest margins or thickets on mountain slopes. Sichuan.

蒋英冬青 jiang ying dong qing

Trees evergreen. Branchlets brown, glabrous, longitudinally angular and sulcate; second year’s branchlets with sparse lenticels; terminal buds pubescent or glabrescent, bud scales un wrinkled. Petiole 7–10 mm, narrowly sulcate adaxially, glabrous; leaf blade abaxially brownish, adaxially olivaceous when dry, narrowly oblong or elliptic-oblong, 3.5–5.5 × 1.5–2 cm, leathery, both surfaces glabrous, midvein impressed adaxially, lateral veins 8–10 pairs, slightly evident abaxially, obscure adaxially, reticulate veins inconspicuous on both surfaces, base obtuse, margin serrulate, apex shortly acuminate, rarely obtuse. Flowers not known. Infructescences: 1-fruited cymes, solitary or few fascicled, fascicles 2- or 3-fruited, axillary; fruiting pedicels 4–5 mm, puberulent; persistent bracteoles 2, deltoid near base. Fruit red or deep purple when dry, globose, 3–4 mm in diam.; persistent calyx 5-lobed, lobes deltoid; persistent stigma crest ed or thinly discoid when mature; pyrenes 5, ellipsoidal-oblong, ca. 2 mm, ca. 1 mm in diam., abaxially longitudinally 1-striate, not sulcate, endocarp leathery. Fl. and fr. unknown.

● Mixed forests; 3000–4000 m. W Yunnan (Diancang Shan).

矮冬青 ai dong qing

Ilex hanceana Maximowicz var. anhweiensis Loesener; I. hanceana var. lohfuensis (Merrill) Chun.

Shrubs or trees, evergreen, 2–6 m tall. Branchlets gray-black or dark castaneous, slender, densely pubescent; old branchlets with lenticels nearly absent; leaf scars semicircular, convex; terminal buds narrowly conical, densely pubescent. Stipules persistent, narrowly deltoid, ca. 1 mm, densely pubescent; petiole 1–2 mm, densely pubescent, flat or shallowly sulcate adaxially; leaf blade abaxially greenish, adaxially deep green, shiny, oblong or elliptic, rarely obovate or orbiculate, 1–2.5 × 0.5–1.2 cm, thinly leathery or papery, both surfaces glabrous except on midvein, midvein pubescent on both surfaces, lateral veins 7–9 pairs, slightly evident on both surfaces, reticulate veins obscure on both surfaces, base cuneate, margin entire, slightly reflexed, apex retuse. Inflorescences: cymes, fasciculate, axillary on second year’s branchlets, pubescent or glabrescent, pubescent. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles ca. 1 mm; pedicels ca. 1 mm; flowers pink, 4(or 5)-merous; calyx patelliform, ca. 1.5 mm in diam., pubescent, slightly 4-lobed, lobes orbicular, margin erose, ciliate; corolla rotate, ca. 4.5 mm in diam., petals elliptic, basally slightly conuate, not ciliate; stamens ca. 1/2 as long as petals, anthers oblong; rudimentary ovary rostellate. Female inflorescences: 1-flowered cymes, fascicles 2- or 3-flowered; pedicels ca. 1 mm, bracteoles 2, above middle; calyx and corolla as in male flowers; staminodes ca. 3/4 as long as petals, sterile anthers coriaceous; ovary ovoid, ca. 0.7 mm in diam.; style evident, stigma discoid, convex. Fruit red, globose, ca. 3.5 mm in diam.; fruiting pedicel ca. 1 mm, pubescent; persistent calyx cup-shaped, pubescent, ciliate; persistent stigma thickly discoid or capitate, 4(or 5)-lobed; pyrenes 4, broadly ellipsoidal, ca. 3 mm, ca. 2 mm in diam., both ends acute, cross section trigonous, abaxially 3-striate, not sulcate, laterally smooth, endocarp leathery. Fl. Apr–Aug, fr. Aug–Dec.

● Evergreen broad-leaved forests, sparse forests, shrub forests, mountain slopes; (100–)200–1000(–1300) m. S Anhui (Qimen, Xiu ning), Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Zhejiang.

双齿冬青 shuang chi dong qing

Trees evergreen, ca. 15 m tall. Branchlets gray, terete; leaf scars semicircular, raised; lenticels sparse, slightly scabrous, glabrous; current year’s branchlets longitudinally angular and sulcate, densely puberulent; terminal buds conical, puberulent. Petiole 2–4 mm, puberulent, shallowly sulcate adaxially; leaf blade abaxially greenish, adaxially deep green, obovate or obovate-oblong, 1.5–2.8 × 1–1.5 cm, leathery, both surfaces glabrous except on midvein adaxially, midvein flat or slightly raised abaxially, raised and puberulent adaxially, lateral veins 5–7 pairs, anastomosing near margin, distinct or obscure abaxially, obscure adaxially, reticulate veins obscure, base obtuse-rounded, margin entire except 1(or 2) pair(s) of teeth at apex, apex truncate-rounded, retuse, or emarginate, with triangular
acumen extended at center. Inflorescences: cymes of order 1 or 2, 1–3-flowered, fasciculate, axillary on first to second year’s branchlets; pedicels quadrangular, sparsely puberulent or glabrous, base with ovate-triangular, puberulent bracteoles; flowers very small, calyx 5-lobed, lobes deltoid, puberulent, ciliate; petals, stamens, and ovary not known. Fruit not known. Fl. Dec, fr. unknown.

- Forests at mountain summits; 2400–2500 m. SE Yunnan (Jinping).


矮杨梅冬青  ai yang mei dong qing

Trees evergreen, small, ca. 3 m tall. Branchlets gray-brown, terete, longitudinally angular and sulcate, densely puberulent; older branchlets longitudinally fissured, with raised, semicircular leaf scars, glabrescent; terminal buds conical, densely puberulent. Petiole 2–4 mm, abaxially glabrous, adaxially puberulent and shallowly sulcate; leaf blade abaxially greenish, adaxially green and opaque, obovate, 1–1.8 × 0.6–1.2 cm, thickly leathery, abaxially glabrous, adaxially glabrous except on midvein, midvein slightly raised abaxially, impressed and puberulent adaxially, lateral veins inconspicuous on both surfaces, reticulate veins obsolete on both surfaces, base obtuse or broadly cuneate, margin recurved, entire, apex cordate, retuse. Male inflorescences: cymes of order 1 or 2, 1–3–flowered, fasciculate, axillary on second year’s branchlets; peduncles 2–3 mm; pedicels 0.5–1.5 mm, puberulent; bracteoles 1 or 2, basal, ovate-deltoid, densely puberulent, ciliate; flowers white, 4-merous; calyx patelliform, ca. 1.5 mm in diam., puberulent, 4(or 5)-lobed, lobes broadly ovate, ciliate; corolla rotate, ca. 3 mm in diam., petals elliptic, ca. 2 × 1.5 mm, basally slightly connate; stamens ca. 3/4 as long as petals, anthers oblong; rudimentary ovary globose, ca. 0.7 mm in diam., apex flat. Female flowers and fruit not known. Fl. May, fr. unknown.

- Forests on limestone mountains; ca. 1100 m. SE Yunnan (Malipo, Xichou).


凹叶冬青 ao ye dong qing

_Ilex menziesii_ Champion ex Bentham var. nummularia Champion ex Bentham.

Shrubs or trees, evergreen, 8–13(–15) m tall; bark gray-white or gray-brown. Young branchlets purple-brown, longitudinally ridged and sulcate, puberulent; older branchlets brown, subterete, slightly puberulent or glabrescent, longitudinally fissured; lenticels absent; terminal buds conical, puberulent, apically acute. Stipules persistent, deltoid, ca. 1 mm; petiole 4–5 mm, sulcate, sparsely minutely puberulent; leaf blade abaxially greenish, adaxially green, shiny, ovate or obovate, rarely obovate-elliptic, 2–4 × 1.5–2.5 cm, leathery, abaxially deeply colored punctate, both surfaces glabrous, midvein slightly raised or flat on both surfaces, lateral veins 8–10 pairs, evident abaxially, obscure adaxially, reticulate veins sometimes evident abaxially, base obtuse, margin entire, apex retuse or emarginate, or shortly and abruptly acuminate. Inflorescences: cymes, fasciculate, axillary on first to second year’s branchlets. Male inflorescences: cymes of order 1 or 2, 1–3-flowered, puberulent; bracts deltoid, puberulent; peduncles 1–1.5 mm; pedicels 0.5–1 mm; bracteoles 1, basal, or absent; flowers white, 4-merous; calyx patelliform, ca. 1.8 mm in diam., puberulent, deeply 4-lobed, lobes orbicular, ciliate; corolla rotate, ca. 4 mm in diam., petals oblong-ovate, basally slightly connate; stamens shorter than petals, anthers oblong; rudimentary ovary pulvinate, rostellate. Female flowers not known. Inflorescences: 1-fruited cymes, few fascicled; fruiting pedicels 1.5–2 mm, puberulent, bracteoles 2, basal or median. Fruit red, compressed globose, 3–4 mm in diam.; persistent calyx explanate, subquadrangular, puberulent, 4-lobed, lobes ovate, ciliate; persistent stigma discoïdal, convex; pyrenes 4, ellipsoidal-obovoid, ca. 3.5 mm, ca. 1.5 mm in diam., abaxially slightly raised 3-striate, not sulcate, smooth, endocarp leathery. Fl. Jun–Jul, fr. Aug–Nov.

- Dense forests, valleys; 600–1900 m. Fujian (Liancheng), Guangdong, Guangxi, Hainan (Yizhang), Jiangxi.


青茶香 qing cha xiang

_Ilex buxifolia_ Hance, J. Bot. 14: 364. 1876, not Gardner (1845).

Shrubs or trees, evergreen, 2–10 m tall. Young branchlets slender, longitudinally angular and sulcate, puberulent; older branchlets with raised, crescent-shaped leaf scars, lenticels absent; terminal buds conical, puberulent. Stipules persistent, deltoid, apically acute; petiole 2–5 mm, puberulent, sulcate or flat adaxially; leaf blade abaxially greenish, adaxially green, slightly shiny, obovate or obovate-oblong, 2.5–3.5 × 1–2 cm, thickly leathery, both surfaces glabrous except on midvein adaxially, midvein flat or slightly impressed adaxially, lateral veins 7 or 8 pairs and reticulate veins obsolete on both surfaces, base obtuse or cuneate, margin entire, apex shortly acuminate, obtuse, or rounded, sometimes retuse. Inflorescences: cymes, solitary or fasciculate, axillary on second year’s branchlets, puberulent, bracts deltoid, puberulent. Male inflorescences: cymes of order 2, 2- or 3-flowered, fasciculate; peduncles 1–2 mm; pedicels 1–1.5 mm; bracteoles 1 or 2, basal; flowers white, 4-merous; calyx patelliform, ca. 2 mm in diam., pubescent, shallowly 4-lobed, lobes orbicular, ciliate; corolla ca. 3 mm in diam., petals ovate, basally slightly connate; stamens shorter than petals; rudimentary ovary conical, center depressed. Female inflorescences: 1-flowered cymes, solitary; pedicels ca. 1.5 mm, puberulent; bracteoles 2, basal, lanceolate; calyx and corolla as in male flowers; staminodes ca. 3/4 as long as petals, sterile anthers ciliate; ovary subglobose-ovoid, ca. 1.3 mm in diam., stigma broadly discoid. Fruit red, globose, ca. 5 mm in diam.; fruiting pedicel ca. 2.5 mm, puberulent; persistent calyx explanate, quadrangular, 4-lobed, lobes deltoid, ciliate; persistent stigma thinly discoid, shallowly 4- or 5-lobed; pyrenes 4, broadly ellipsoidal or ovoid-ellipsoidal, ca. 4 mm, ca. 3 mm in diam., abaxially longitudinally raised and furcate-striate, laterally smooth, endocarp leathery. Fl. May–Jul, fr. Jul–Dec.

- Shrub forests, mountain slopes; 900–1800 m. SW Fujian (Shanghang), Guangdong, Guangxi, Hainan (Ledong), Hunan.

溪畔冬青 | xi pan dong qing
---|---

Shrubs evergreen, ca. 2 m tall. Young branchlets dark brown; older branchlets gray-black, glabrescent. Petiole 3–9 mm, adaxially longitudinally sulcate, puberulent or glabrous; leaf blade abaxially greenish, adaxially green, elliptic or obovate-elliptic, (0.7–)1–3.5 × (0.4–)0.7–1.7 cm, thickly leathery, abaxially punctate, glabrous except at base, adaxially puberulent at base when young, midvein flat abaxially, deeply impressed, puberulent adaxially, lateral veins very inconspicuous on both surfaces, base cuneate, margin entire, apex retuse, not obtuse. Inflorescences: cymes, fasciculate or solitary, axillary, puberulent. Male inflorescences: cymes of order 1 or 2, 1–3-flowered; peduncles 3–6 mm; pedicels 4–8 mm; bracteoles 2, above middle; flowers 5– or 6-merous, rarely 7-merous; calyx patelliform, ca. 2 mm in diam., glabrous, lobes suborbicular, not ciliate; corolla white, rotate, ca. 5 mm in diam., petals 5 or 6, rarely 7, oblong, 4.5–5.5 mm, glabrous, apex rounded; stamens 5 or 6, rarely 7, ca. 1/2 as long as petals; rudimentary ovary subglobose. Female inflorescences: 1-flowered cymes, solitary, or few fascicled, fascicles 2-flowered; pedicels 6–9 mm; bracteoles 2, below middle; calyx and corolla as in male flowers; staminodes 5–7, glabrous; ovary globose, stigma discoid. Fruit red, compressed globose, ca. 3 mm in diam.; fruiting pedicel 6–9 mm; persistent calyx explanate, ca. 2 mm in diam.; persistent stigma discoid; pyrenes 5 or 6, rarely 7, ellipsoidal, ca. 1.5 mm, abaxially raised striate, not sulcate, endocarp leathery. Fl. May, fr. unknown.


薄叶冬青 | bo ye dong qing
---|---
*Ilex burmanica* Merrill; *I. fragilis f. kingii* Loesener; *I. fragilis f. subcoriacea* C. J. Tseng; *I. opienensis* S. Y. Hu.

Shrubs or small trees, deciduous, 3–5 m tall. Branchlets castaneous, glabrous; older branchlets suberete, longitudinally striate-sulcate, lenticels conspicuous, ovate or orbicular, raised; spur branchlets 1–1.5 cm, very rugose, with persistent leaf scars and bud scales; terminal buds ovoid, bud scales ovate, ciliate. Stipules deltoid, minute; petiole purplish, 5–15 mm, glabrous; leaf blade abaxially greenish, adaxially deep green, ovate or elliptic, 4–8 × 3–5 cm, membranous, papery, or subleathery, both surfaces glabrous or hirsute-pubescent, midvein impressed adaxially, lateral veins 8–10 pairs, reticulate veins evident only abaxially, base rounded to obtuse, margin serrate, apex acuminate. Male inflorescences: 1-flowered cymes, fasciculate or solitary, axillary on scales or basal leaves; pedicels 3–6 mm, glabrous; flowers 6–8-merous; calyx patelliform, ca. 4 mm in diam., deeply lobed, lobes unequal in shape and size, often ovate or deltoid-ovate to broadly ovate, ciliate; petals yellow-green, oblong, 2–2.5 × ca. 1.5 mm, basally slightly connate; stamens ca. 1/2 as long as petals; rudimentary ovary pulvinate, depressed at center. Female inflorescences: 1-flowered cymes, solitary, axillary on scales, rarely to leaves; pedicels 2–3 mm, glabrous; flowers 6–8(–16)-merous; calyx patelliform, ca. 4 mm in diam., deeply lobed, lobes ovate to broadly ovate, ciliate; petals as in male flowers; staminodes ca. 1/3 as long as petals, sterile anthers cadate; ovary depressed globose, style present, ca. 1.5 mm, stigma capitulate or crested. Fruit red, depressed globose, 4–6 mm in diam.; persistent calyx explanate; persistent stigma discoid; fruiting pedicel ca. 5 mm; pyrenes 6–8(–13), ellipsoidal, 2–2.5 mm, ca. 1.5 mm in diam., axially longitudinally striate, laterally striate or not, endocarp woody. Fl. May–Jun, fr. Sep–Oct. 

n = 18, 2n = 36.

Sparse forests, broad-leaved, *Tsuga*, or shrub forests, mountains, grazing land; 1500–3000 m. Guizhou (Weining), Sichuan, S and SE Xizang, Yunnan [Bhutan, India, N Myanmar, Nepal].

Further research is needed on the distributional range of this taxon.


小果冬青 | xiao guo dong qing
---|---

Trees deciduous, 12–20 m tall. Branchlets thick, glabrous or pubescent, with conspicuous, large, circular or oblong, often coalescent white lenticels. Stipules broadly deltoid, small; petiole 1.5–3.2 cm, slender, glabrous, abaxially plicate-rugose, adaxially flat; leaf blade abaxially greenish, adaxially deep green, ovate, ovate-elliptic, or ovate-oblong, 7–13 × 3–5 cm, membranous or papery, both surfaces glabrous or abaxially pubescent, midvein slightly impressed adaxially, lateral veins 5–8 pairs, reticulate veins raised on both surfaces, base rounded or broadly cuneate, often oblique, margin subentire or aristate-serrate, apex long acuminate. Inflorescences: compound cymes, cymules of order 3 or 4, solitary, axillary on current year’s branchlets, glabrous; peduncles ca. 12–14 mm, plicate, rugose; secondary axis 2–7 mm; bracts absent; tertiary axis with bracts broadly deltoid, acute; pedicels 2–3 mm, glabrous or pilose; bracteole 1, basal, deltoid. Male flowers 5– or 6-merous; calyx patelliform, shallowly 5- or 6-lobed, lobes obtuse, glabrous or ciliate, or axially pilose; corolla rotate, petals oblong, 1.2–1.5 mm, basally slightly connate; stamens ca. as long as petals, anthers ovoid-oblong; rudimentary ovary subglobose and rostellate. Female flowers 6–8-merous; calyx deeply 6-lobed, lobes obtuse, ciliate; petals oblong, ca. 1 mm, basally slightly connate; staminodes ca. 1/2 as long as petals, sterile anthers sagitate; ovary conical-ovoid, ca. 1 mm in diam., stigma discoid. Fruit red or yellow, globose, ca. 3 mm in diam.; persistent calyx explanate; persistent stigma thickly discoid, convex, 6–8-lobed; pyrenes 6–8, ellipsoidal, ca. 2 mm, ca. 1 mm in diam., ends obtuse, abaxially slightly rugose, longitudinally 1-sulcate, laterally smooth, endocarp leathery. Fl. May–Jun, fr. Jul–Oct.

Evergreen broad-leaved forests, mountains; 500–1900 m. Anhui, Fujian, Guangdong, Guanxi, Guizhou, Hainan, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Japan, Vietnam].

大豆冬青 duo mai dong qing

Ilex micrococca Maximowicz var. polyneura Handel-Mazzetti, Symb. Sin. 7: 654. 1933; I. polyneura var. glabra S. Y. Hu.

Trees deciduous, ca. 20 m tall. Current year’s branchlets castaneous, shiny, with conspicuous elliptic lenticels, glabrous; second year’s branchlets gray-brown, longitudinally angular and sulcate, raised, semicircular. Stipules scale-form, ca. 1.5 × 1 mm; petiole 1.5–3 cm, abaxially rounded, glabrous, adaxially deeply sulcate, puberulent in groove; leaf blade oblong-elliptic or ovate-elliptic, 8–15 × 3.5–6.5 cm, papery or thinly leathery, abaxially minutely puberulent, especially on lateral veins, adaxially glabrous, midvein impressed adaxially, Anastomosing near margin, lateral veins 10–20 pairs, reticulate veins evident on both surfaces, base rounded or obtuse, rarely oblique, margin finely sharply serrate, apex long acuminate. Inflorescences: cymes umbrelliform, solitary, axillary on current year’s branchlets; secondary axis usually absent or shorter than pedicels; peduncles 6–9 mm, slightly compressed, sparsely puberulent; bracts absent; pedicels 2.5–4 mm, sparsely puberulent; bracteoles 2, basal; flowers white, 6- or 7-merous. Male flowers: calyx patelliform, ca. 2 mm in diam., deeply 6- or 7-lobed, lobes deltoid, glabrous, margin erose; corolla rotate, ca. 4 mm in diam., petals ovate, ca. 2 mm, basally slightly connate; stamens ca. as long as or slightly shorter than petals, anthers oblong, ca. 1 mm; rudimentary ovary pyramidal and rostellate, apex lobed. Female flowers: calyx and corolla as in male flowers; petals oblong, ca. 1.5 mm, basally slightly connate; staminodes ca. 1/2 as long as petals; sterile anthers sagittate; ovary ovoid, ca. 2 mm in diam., stigma discoid. Fruit globose, ca. 4 mm in diam.; fruiting pedicel 2.5–4.5 mm, puberulent; bracteoles basal, deltoid; flowers 4–6-merous; calyx rotate, ca. 4 mm in diam., petals ovate, margin erose; staminodes ca. 1/2 as long as petals; sterile anthers sagittate; ovary ovoid, ca. 1.5 mm in diam., stigma discoid. Fruit red, globose, ca. 5 mm in diam.; fruiting pedicel 2–2.5 cm, hirsute; persistent calyx exlanate, suborbicular, 5- or 6-lobed, lobes orbicular, hirsute, ciliate; persistent stigma discoid, shallowly 5- or 6-lobed; pyrenes 4 or 5, rarely 6, broadly ellipsoid, 2–2.5 mm, 1–1.2 mm in diam., smooth, not striate, not sulcate, endocarp leathery. Fl. May, fr. Oct.

Forest margins, shrub forests, mountain slopes; 500–1600 m. Fujian (Nanping), Hunan, Jiangxi, Sichuan, Zhejiang [Japan].

197. Ilex macrocarpa Oliver, Hooker’s Icon. Pl. 18: t. 1787. 1888.

大果冬青 da guo dong qing

Trees deciduous, 5–10(–17) m tall. Branchlets castaneous or gray-brown; lenticils conspicuous, glabrous or pubescent; spur branchlets 4–10 cm. Stipules very minute, often obscure; petiole 1–1.2 cm, adaxially narrowly sulcate, sparsely minutely puberulent; leaf blade abaxially greenish, adaxially deep green, ovate or ovate-elliptic, rarely oblong-elliptic, (3–)4–13(–15) × (2–)4–6 cm, papery, both surfaces glabrous or sparsely and minutely puberulent when young, or pubescent, midvein abaxially raised, glabrous or sometimes sparsely and minutely puberulent, adaxially flat or impressed, sparsely and minutely puberulent or glabrous, lateral veins 8–10 pairs, raised abaxially, flat or slightly raised adaxially, Anastomosing near margin, reticulate veins evident on both surfaces, base rounded or obtuse, margin shallowly serrate, apex acuminate to shortly acuminate. Male inflorescences: cymes of order 1–3, 1–5-flowered, solitary or fasciculate, axillary on first to second year’s branchlets; peduncles 2–3 mm; pedicels 3–7 mm, glabrous or pubescent; flowers white, 5- or 6-merous; calyx patelliform, shallowly 5- or 6-lobed, lobes deltoid-ovoid, ciliate; corolla ca. 7 mm in diam., petals obovate-oblong, ca. 3 × 1.5–2 mm, basally slightly connate; stamens ca. as long as petals, anthers oblong; rudimentary ovary ovate, apex slightly retuse. Female inflorescences: 1-flowered cymes, solitary, axillary on leaves or scales; pedicels 6–18 mm, glabrous or pubescent; bracteoles 2, basai; flowers 7–9–merous; calyx ca. 5 mm in diam., shallowly 7–9-lobed, lobes ovate-deltoid, apex obtuse or rounded, ciliate; corolla 1–1.2 cm in diam.; staminodes ca. 2/3 as long as petals, sterile anthers sagittate, ovary ovate-ovoid, base ca. 3 mm in diam., style present, stigma columnar, glabrous. Fruit black, globose, 1–1.4 cm in diam.; fruiting pedicel 1–3.3 cm; persistent calyx exlanate; persistent stigma columnar; pyrenes 7–9, oblong, laterally compressed, abaxially 3-striate, 2-sulcate, laterally reticulately striate and sulcate, endocarp stony. Fl. Apr–May, fr. Oct–Nov.
AQUIFOLIACEAE

● Forests, mountains, valleys, roadsides; 400–4500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, Sichuan, Yunnan, Zhejiang.

1a. Fruiting pedicels 1.4–3.3 cm, often more than 2 × as long as petioles .................................................. 197c. var. longipedunculata

1b. Fruiting pedicels ca. as long as or slightly longer than petioles.

2a. Branchlets, leaves, and inflorescences glabrous .......... 197a. var. macrocarpa

2b. Branchlets, leaves, and inflorescences pubescent .......... 197b. var. reevesiae

197a. Ilex macrocarpa var. macrocarpa

大果冬青 (原变种) da guo dong qing (yuan bian zhong)

Ilex macrocarpa var. macrocarpa [G. Don] Britton et al. var. longipedunculata S. Y. Hu; I. macrocarpa var. trichophylla Loesener; I. montana Torrey & A. Gray var. henryi Loesener; I. macrocarpa var. hupehensis (Loesener) Fernald.

Branchlets glabrous. Leaf blade ovate or ovate-elliptic, rarely oblong-elliptic, 4–13(–15) × (3–)4–6 cm, both surfaces glabrous or midvein sparsely puberulent. Inflorescences glabrous. Fruiting pedicels ca. as long as or slightly longer than petioles.

● Forests, mountains; 400–4500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, S Shaanxi, Sichuan, Yunnan, Zhejiang.

197b. Ilex macrocarpa var. reevesiae (S. Y. Hu) S. Y. Hu, J. Arnold Arbor. 30: 274. 1949 ["reevesiae"].

柔毛冬青 rou mao dong qing


Branchlets puberulent. Leaf blade ovate, 3–10 × 2–5.5 cm, both surfaces pubescent. Inflorescences pubescent. Fruiting pedicels ca. as long as or slightly longer than petioles.

● Forests in valleys, roadsides; 500–900 m. S Shaanxi (Luyang). Sichuan (Chengdu, Guangan, Guanyuan).


长梗冬青 chang geng dong qing

Branchlets glabrous. Leaf blade ovate or ovate-elliptic, pubescent at least on midvein adaxially. Fruiting pedicels 1.4–3.3 cm, often more than 2 × as long as petioles.

● Forests on mountain slopes; 600–2200 m. S Anhui, Guangxi, Guizhou, Hubei, Hunan, Jiangsu (Yixing), Sichuan, Yunnan, Zhejiang.

198. Ilex chapaensis Merrill, J. Arnold Arbor. 21: 373. 1940.

沙坝冬青 sha ba dong qing

Ilex howii Merrill & Chun; I. megistocarpa Merrill.

Trees deciduous, 9–16 m tall. Branchlets castaneous, minutely sparsely puberulent or glabrescent, with numerous con-

spicuous lenticels and raised leaf scars; spur branchlets 3–5 mm, with scales and raised leaf scars. Stipules persistent, deltoid, minute; petiole 1.2–3 cm, adaxially deep and narrowly sulcate, distal ends narrowly winged by decurrent leaf base, glabrous; leaf blade brown-olivaceous when dry, ovate-elliptic or oblong-elliptic to elliptic, 5–11 × 3–3.5 cm, papery or thinly leathery, both surfaces glabrous, rarely puberulent on both surfaces when young, midvein impressed adaxially, lateral veins 8–10 pairs, raised abaxially, slightly impressed or flat adaxially, glabrous, anastomosing near margin, reticulate veins evident abaxially, base obtuse or acute, rarely rounded, margin crenulate-serulate, apex shortly acuminate or obtuse, rarely rounded. Male inflorescences: cymes of order 1–3, 1–5-flowered, pseudo-fasciculate; peduncles 1–2 mm; pedicels 2–4 mm; 1-flowered pedicels ca. 3 mm, puberulent; bracteoles 2, basal; flowers 6–8-merous; calyx ca. 4 mm in diam., glabrous or puberulent, 6–8-lobed, lobes orbicular, ciliate; petals obovate-oblong, 4–5 mm, basally slightly connate, ciliate; stamens ca. as long as petals, anthers ovoid-oblong; rudimentary ovary conical, rostellate, apex shallowly lobed. Female inflorescences: 1-flowered cymes, solitary, axillary at scales of spur branchlets, rarely at leaf axis; pedicels 6–10 mm, puberulent; bracteoles 2, basal; calyx 6–7-lobed, as in male flowers; corolla suberect, ca. 8 mm in diam., petals ca. 4 mm; staminodes ca. 2/3 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 2 mm, style present, puberulent, stigma capitulate, ca. 2 mm, conspicuously lobed. Fruit green when mature (black when drying), globose, 1.2–2 cm in diam.; persistent calyx explanate; persistent stigma columnar; pyrenes 6 or 7, oblong, ca. 1.3 cm, ca. 4 mm in diam., abaxially 3-striate, 2-sulcate, laterally 1- or 2-striate and sulcate, endocarp bony. Fl. Apr., fr. Oct.–Nov.

Sparse forests, mixed forests on mountains; 500–3000 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, SE Yunnan [N Vietnam].


秤星树 cheng xing shu

Shrubs deciduous, ca. 3 m tall. Branchlets castaneous, slender, glabrous; lenticels light colored; spur branchlets rugose, with persistent scales and leaf scars. Stipules persistent, deltoid, minute; petiole 3–8 mm, abaxially subrounded, glabrous, adaxially sulcate; leaf blade abaxially greenish, adaxially green, ovate or ovate-elliptic, (3–)4–6–8 × (1.5–)2–3.5 cm, membranous, abaxially glabrous, adaxially puberulent, midvein impressed adaxially, lateral veins 5 or 6 pairs, raised abaxially, flat adaxially, anastomosing near margin, reticulate veins evident on both surfaces, base obtuse to subrounded, margin serrate, apex ciliate-acuminate, acumen (3–)6–10–15 mm. Male inflorescences: 1-flowered cymes, solitary or fasciculate, fascicles 2–5-flowered, axillary on leaves or scales; pedicels 4–6–9 mm; flowers white, 4- or 5-merous; calyx patelliform, 2.5–3 mm in diam., glabrous, 4- or 5-lobed, lobes broadly deltoid or orbicular, margin erose, ciliate; corolla rotate, ca. 6 mm in diam., petals suborbicular, ca. 2 mm in diam., basally slightly connate, rarely ciliate; stamens ca. 3/4 as long as petals, filaments ca. 1.5 mm, anthers oblong, ca. 1 mm; rudimentary ovary pulvinate, rostell-
late. Female inflorescences: 1-flowered cymes, solitary, axillary on leaves or scales; pedicels 1–2 cm, glabrous; flowers 4–6-merous; calyx deeply 4–6-lobed, ca. 3 mm in diam., lobes ciliate; corolla rotate, petals suborbicular, ca. 2 mm in diam., basally slightly conuate; staminodes ca. 1 mm, sterile anthers sagittate; ovary ovoid, ca. 1.5 mm in diam., style present, stigma thickly discoid. Fruit black, globose or ellipsoidal, 5–7(–8) mm in diam., longitudinally striate and sulcate; fruiting pedicel 2–3 cm; persistent calyx exlanate, lobes ciliate; persistent stigma capitae or thickly discoid, style evident; pyrenes 4–6, obovoid-ellipsoidal, ca. 5(8) mm, ca. 2(3) mm in diam., abaxially 3-striate and sulcate, laterally striate, nearly smooth or sulcate, adaxial keel sharp, endocarp stony. Fl. Mar, fr. Apr–Oct.

Sparse forests on slopes, shrubby areas, roadsides; 400–1000 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Taiwan, Zhejiang [Philippines, ?Vietnam].

1a. Fruit globose, 5–7 mm in diam., pyrenes 4–6 ......................................................... 199a. var. asprella

1b. Fruit ellipsoidal, ca. 8 mm in diam., pyrenes 6 ......................................................... 199b. var. tapuensis

199a. Ilex asprella var. asprella

199b. Ilex asprella var. tapuensis

AQUIFOLIACEAE

Ilex gracilipes

Trees deciduous, glabrous throughout. Second year’s branchlets castaneous when dry, shiny, lenticels conspicuous; spur branchlets ca. 1 cm., ca. 2.5 mm in diam., rugose with scales and leaf scars. Stipules deltoid, minute; petiole 5–14 mm, adaxially sulcate, distal end narrowly winged by decurrent leaf base; leaf blade olivaceous when dry, ovate, 4–8.5 × 2.5–5 cm, thickly papery, midvein slightly impressed adaxially, lateral veins 5–7 pairs, evident abaxially, obscure adaxially, reticulate veins evident abaxially, base acute, margin sparsely crenulate-serrate, apex obtuse or shortly and broadly acuminate. Inflorescences: cymes of order 1 or 2, 1- or 3-flowered, solitary or fasciculate, axillary on scales and leaves. Male inflorescences: cymes of order 1 or 2, 1- or 3-flowered; pedicels ca. 3 mm; pedicels 3–4 mm; bracteoles basal, glabrous, ciliate; calyx patelliform, shallowly 4–6-lobed, lobes ovate, margin erose, ciliate; corolla rotate, ca. 1 cm in diam., petals oblong, ca. 4 × 2.5 mm, basally slightly conuate; stamens shorter than petals, anthers oblong; rudimentary ovary pulvinate, depressed at center. Female inflorescences: 1-flowered cymes, fascicles 3-flowered; pedicels 1.2–1.7 cm; calyx patelliform, ca. 2.5 mm in diam., 5- or 6-lobed, lobes orbicular, ciliate; corolla rotate, ca. 5 mm in diam., petals ovate, ca. 2 × 1.5 mm, basally slightly conuate; stamens ca. 2/3 as long as petals, sterile anthers sagittate; ovary globose, ca. 1 mm in diam., stigma mammilliform. Fruit globose, ca. 6 mm in diam., endocarp woody. Fl. Jul, fr. unknown.

Forests; sea level to 400 m. Taiwan (Huoshao Dao, Lan Yu) [Japan].


Ilex rhamnifolia Merrill.

Shrubs deciduous, 1–3(–4) m tall. Branchlets slender, pubescent at base, thickened, lenticels numerous and conspicuous; spur branchlets 3–5 mm, rugose with persistent scales and leaf scars. Stipules persistent, deltoid, minute; petiole 5–11 mm, adaxially narrowly sulcate, pubescent; leaf blade abaxially greenish, adaxially green, ovate, 2–5(–6) × 1–3(–3.5) cm, membranous or thinly papery, both surfaces sparsely pubescent, or glabrescent except on veins puberulent, midvein impressed adaxially, lateral veins 4 or 5 pairs, raised abaxially, flat adaxially, anastomosing near margin, reticulate veins obscure on both surfaces, base cuneate and attenuate, margin serrate, apex acute or very shortly acuminate, rarely obtuse. Inflorescences: cymes, solitary, axillary on scales or leaves; flowers white, fragrant, 4- or 5-merous. Male inflorescences: cymes of order 2, 3-flowered; peduncles 0.5–2 mm; pedicels 1.5–3 mm, glabrous; bracteoles 2, basal, deltoid, ciliate; calyx patelliform, ca. 2.5 mm in diam., deeply 4-lobed, lobes broadly deltoid, ciliate; corolla rotate, ca. 7 mm in diam., petals orbicular-ovate, ca. 3 mm in diam., basally slightly connate, margin erose, sparsely ciliate; stamens 4 or 5, anthers oblong; rudimentary ovary ovoid, rostellate, apex lobed. Female inflorescences: 1-flowered cymes; pedicels 3–4 mm; bracteoles 2, basal, ciliate; calyx and corolla as in male flowers; staminodes ca. 2/3 as long as petals, sterile anthers sagittate; ovary ovoid, ca. 1.5 mm in diam., stigma thickly discoid, shallowly 4-lobed. Fruit black, globose, ca. 7 mm in diam., longitudinally angular and sulcate when dry; persistent calyx explanate, subquadrantriangular; persistent stigma discoid, 4-lobed; pyrenes 4, ellipsoidal, ca. 2 cm in diam., ends acute, abaxially deeply rugose and reticulately striate and sulcate, endocarp bony. Fl. Apr–May, fr. Jun–Sep.

● Sparsely forests, shrub forests in valleys, roadsides; 100–1200 m.

*Jiangxi*.

Shrubs or small trees, deciduous, 3–5 m tall. Current year’s branchlets castaneous or purple-brown, sparsely puberulent or glabrescent, longitudinally angular, with pale lenticels; second year’s branchlets gray, with dense lenticels; spur branchlets ca. 5 mm, with scales and leaf scars. Petiole 1–2 cm, adaxially sulcate, glabrous; leaf blade olivaceous when dry, obovate-elliptic or elliptic, 5–8 × 1.8–3.3 cm, papery, both surfaces puberulent or glabrous except on veins puberulent, midvein slightly raised abaxially, flat or impressed adaxially, lateral veins 6–8 pairs, evident on both surfaces, reticulate veins obscure, base cuneate or attenuate, margin serrate on distal half, apex sharply acuminate, acumens 5–8 mm. Flowers not known. Infructescences: 1-flowered cymes, solitary, axillary on leaves or scales of spur branchlets; fruiting pedicels 4–8(–10) mm. Fruit black when dry, elliptoidal, 1–1.5 cm, 6–8 mm in diam., longitudinally angular and sulcate; persistent calyx discoid, 5-lobed, lobes deltoid-ovate, slightly obtuse; persistent stigma mammilliform or capitulate; pyrenes 4 or 5, ellipsoid, 7–9 mm, 1.5–2.5 mm in diam., abaxially 3-serrate and 2-sulcate, laterally striate, endocarp bony. Fl. unknown, fr. Jun–Oct.

- Sparse forests, thickets, mixed forests on mountain slopes; 700–1000 m. N Guangdong (Ruyuan), Hunan (Xinhuan, Zhijiang), Jiangxi.


*Da bing dong qing*


Trees deciduous, 10–13(–17) m tall; bark gray-brown, smooth. Branchlets gray-brown, longitudinally angular, with conspicuous lenticils, glabrous; spur branchlets 4–30 mm, rugose with persistent bud scales and leaf scars. Stipules deltoid, minute; petiole 1–2 cm, adaxially narrowly and deeply sulcate, hirsute; leaf blade adaxially green, ovate or broadly elliptic, 4–8 × 2.5–4.5 cm, papery or membranous, abaxially glabrous or sparsely puberulent, adaxially glabrous except on veins, midvein flat, puberulent adaxially, lateral veins 6–8 pairs, raised abaxially, flat adaxially, anastomosing near margin, reticulate veins evident abaxially, base cuneate or obtuse, margin sharply serrate, apex acuminate or acute. Male inflorescences: 1-flowered cymes, fasciculate; fascicles 2–5-flowered; pedicels 4–7 mm, pubescent; calyx patelliform, ca. 2.5 mm in diam., slightly 5-lobed, lobes ca. 1 × 1 mm, margin erose, ciliate; corolla reflexed, rotate, ca. 5 mm in diam., petals oblong, ca. 2 × 1.5 mm, minutely ciliate; stamens 5, shorter than petals, anthers oblong; rudimentary ovary pulvinate, depressed at center. Female inflorescences: 1-flowered cymes, solitary, or fasciculate, axillary to scales or rarely to leaves of spur branchlets, or to leaves; pedicels 6–7 mm, glabrous; flowers 5- or 6-merous; calyx and corolla as in male flowers; staminodes ca. 3/4 as long as petals, sterile anthers coriaceous; ovary ovoid, ca. 1.7 mm, ca. 1.5 mm in diam., glabrous, stigma thickly discoid. Fruit red, globose, ca. 5 mm in diam.; fruiting pedicel 6–7 mm; persistent calyx exappendage, persistent stigma discoid, convex, shallowly 5- or 6-lobed; pyrenes 5, oblong, 4–5.5 mm, ca. 2 mm in diam., abaxially longitudinaly reticulately striate and sulcate, endocarp bony. Fl. May–Jun, fr. Oct–Nov.

- Mixed forests, forest margins, thickets, roadsides, mountains; 500–1900(–2100) m. Anhui, Fujian (Chong’an), Henan, Hubei, Hunan, Jiangxi, Zhejiang [Japan, Korea].

204. *Ilex tsoi* Merrill & Chun, Sunyatsenia 1: 66. 1930 [‘*tsoii*’].

紫果冬青  *zi guo dong qing*

Shrubs or small trees, deciduous, 4–8 m tall; bark gray-black. Branchlets castaneous, yellowish brown, or dark gray, glabrous, lenticels elliptic, conspicuous; spur branchlets rugose, with bud scales and leaf scars, glabrous. Stipules persistent, broadly deltoid, minute; petiole 6–10 mm, adaxially sulcate, glabrous; leaf blade abaxially greenish, adaxially dark green, ovate or ovate-elliptic, (2.5–)5–10 × (1–)3–5 cm, papery, abaxially glabrous, adaxially puberulent, midvein impressed adaxially, laterally veins 8–10 pairs, slightly raised on both surfaces, anastomosing near margin, or nearly obscure or inconspicuous on both surfaces, reticulate veins evident on both surfaces, base rounded or obtuse, margin finely sharply serrate, apex acuminate. Male inflorescences: 1-flowered cymes, solitary or fasciculate, fascicles 2- or 3-flowered, axillary on leaves of current year’s branchlets or on scales of spur branchlets; pedicels 3–4 mm, glabrous, 6-merous; calyx patelliform, ca. 4 mm in diam., deeply 6-lobed, lobes deltoid or ovate, unequal in size, ca. 1 × 1 cm, apex acute, rarely rounded, ciliate; corolla rotate, 6–7 mm in diam., petals oblong, ca. 2 × 1.5 mm, basally slightly connate, apex rounded, very minutely ciliate; stamens shorter than petals, anthers oblong; rudimentary ovary pulvinate, center flat. Female inflorescences: 1-flowered cymes, solitary, axillary to scales or rarely leaves; pedicels 1–3 mm, glabrous; calyx and corolla as in male flowers; staminodes very minute, ca. 1/5 as long as petals, sterile anthers coriaceous; ovary ovoid, ca. 2 mm in diam., stigma thickly discoid, convex. Fruit purple-black, globose, 6–8 mm in diam.; persistent calyx exappendage, stellate; persistent stigma thickly discoid or capitulate, convex; fruiting pedicel 1–3 mm; pyrenes 6, oblong, ca. 5 mm, ca. 2.5 mm in diam., abaxially longitudinally striate and sulcate, laterally reticulately striate and sulcate, endocarp bony. Fl. May–Jun, fr. Jun–Aug.

- Dense or sparse forests, thickets in valleys, roadsides; 300–2000 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Zhejiang.