



- 19a. Leaf blade obovate or spatulate, apex rounded, retuse, base cuneate; inflorescence terminal ..... 82. *V. dendrocharis*
- 19b. Leaf blade elliptic or oblong-elliptic or ± obovate, apex obtuse to rounded or obtuse-acuminate; inflorescences terminal and axillary.
- 20a. Leaf blade elliptic, obovate-elliptic, or obovate-oblong, 7–17 × 4–8 mm, apex obtuse to rounded, base cuneate ..... 80. *V. moupinense*
- 20b. Leaf blade oblong-elliptic, 2.2–2.6 × 1–1.2 cm, apex obtuse-acuminate, base broadly cuneate ..... 81. *V. haitangense*
- 12b. Flowers solitary or in axillary racemes; anthers with spurs or not.
- 21a. Leaf margin entire, rarely glandular serrulate; corolla broadly campanulate to urceolate-campanulate, anthers with two distinct, rarely inconspicuous, spreading or erect spurs.
- 22a. Flowers solitary, or racemes to 2.5 cm, 1–6-flowered; leaf blade to 4 × 2 cm, apex emarginate to obtuse, rarely acute or acuminate; usually epiphytic.
- 23a. Inflorescence subcapitate, with several subsistent, basal imbricate inflorescence bracts; leaf blade 8–11 × 3–4.5 cm, apex abruptly acuminate; branch and leaf blade densely setiferous ..... 60. *V. lanigerum*
- 23b. Flowers solitary or in short racemes, without subsistent basal inflorescence bracts; leaf blade to 4 × 2 cm, apex rounded, obtuse, or emarginate, rarely acute; plant not densely setiferous.
- 24a. Leaf apex rounded or acute.
- 25a. Leaf blade 2.5–3.8 × 1–2 cm, apex acute to abruptly acute; raceme pubescent and mixed glandular pilose ..... 61. *V. cuspidifolium*
- 25b. Leaf blade to 3 × 1.4 cm, apex acute, rounded, or obtuse-acuminate; raceme glabrous or pubescent.
- 26a. Inflorescence very short, 1–3-flowered; pedicels ca. 1 mm, pubescent; corolla pale green ..... 65. *V. brevipedicellatum*
- 26b. Inflorescence 0.6–2 cm, 3–6-flowered; pedicels 1–3 mm, glabrous; corolla white or red (unknown in *V. lamprophyllum*).
- 27a. Leaf blade oblong-obovate, 2–3 × 0.9–1.4 cm, apex acute; calyx lobes 2.5–3 mm, apex subulate ..... 62. *V. lamprophyllum*
- 27b. Leaf blade obovate or broadly obovate, 0.8–2 × 0.6–1.1 cm, apex rounded; calyx lobes 1.5–2 mm, apex obtuse to acute.
- 28a. Corolla red, urceolate; calyx lobes ca. 1.5 mm, apex acute ..... 63. *V. conchophyllum*
- 28b. Corolla white, campanulate; calyx lobes 1.5–2 mm, apex obtuse ..... 64. *V. sinicum*
- 24b. Leaf apex ± emarginate.
- 29a. Pedicel and calyx hispid; flowers solitary or 2 or 3 together in short raceme.
- 30a. Flowers 2 or 3; calyx lobes lanceolate-subulate, 4–5 mm ..... 66. *V. craspedotum*
- 30b. Flowers 1 or 2; calyx lobes triangular-ovate, ca. 2 mm ..... 67. *V. sciaphilum*
- 29b. Pedicel and calyx glabrous, pubescent or puberulous; flowers 1–6 in long to short racemes.
- 31a. Pedicels 0.5–1 cm, glabrous; inflorescences 1–2.5 cm.
- 32a. Leaf blade elliptic, 1.5–2.6 × 0.9–1.2 cm; filaments 0.5–1 mm, tubules ca. 3 × as long as thecae ..... 68. *V. papillatum*
- 32b. Leaf blade obovate-elliptic, 2.5–3(–5) × 1–2 cm; filaments ca. 2 mm, tubules ca. 2 × as long as thecae ..... 69. *V. emarginatum*
- 31b. Pedicels 3–5(–9) mm, pilose or glabrous; inflorescence to 5 mm.
- 33a. Flowers 1 or 2; calyx lobes ciliolate and usually glandular along margin ..... 73. *V. pseudotonkinense*
- 33b. Flowers (1 or)2 or 3(–5); calyx lobes glabrous or ciliate along margin.
- 34a. Leaf blade glaucous abaxially; pedicels 3–5 mm, pedicel and calyx glabrous or villous ..... 70. *V. chengiae*
- 34b. Leaf blade not glaucous abaxially; pedicels 6–9 mm, pedicel and calyx pubescent, pilose, or glabrous.
- 35a. Leaf blade oblong-obovate; inflorescence 1- or 2-flowered; pedicels thickening upwards; corolla white ..... 71. *V. saxicola*
- 35b. Leaf blade elliptic; inflorescence (1- or)2- or 3(–5)-flowered; pedicels hardly thickening upwards; corolla red ..... 72. *V. triflorum*
- 22b. Raceme usually 2.5 cm or longer, (3–)5–10(or more)-flowered, and/or leaf blade at least (1.5–)4 × (0.35–)2 cm, apex acute, acuminate, or caudate, rarely obtuse or emarginate; terrestrial.
- 36a. Leaf blade with ± glandular serrulate or entire margin, abaxially glaucous, sparsely glandular setose on midvein.
- 37a. Leaf blade 4–6 × 2–4 cm, margin densely glandular serrulate; pedicels 3–5 mm; bracts leaflike, broadly elliptic, 1–2 cm ..... 1. *V. glaucoalbum*

- 37b. Leaf blade 7–13 × 4–6.5 cm, margin sparsely glandular setose or entire; pedicels 4–12 mm; bracts elliptic, ca. 1.2 cm ..... 2. *V. gaultheriifolium*
- 36b. Leaf blade with entire margin, abaxially rarely glaucous, but glabrous or punctate or brownish appressed-headed hairy, rarely strigose on midvein.
- 38a. Leaf apex obtuse or emarginate.
- 39a. Raceme many flowered; pedicels 1–1.5 mm; calyx lobes ca. 1 mm; corolla ca. 3.5 mm; leaf apex obtuse ..... 3. *V. cavinerve*
- 39b. Raceme 3-flowered; pedicels 10–17 mm; calyx lobes 4–6 mm; corolla ca. 1.2 cm; leaf apex emarginate or obtuse ..... 4. *V. impressinerve*
- 38b. Leaf apex acute, acuminate, or caudate.
- 40a. Leaf blade 1.5–7 × 0.35–2 cm, apex acute or shortly acuminate; secondary veins 3–5-paired.
- 41a. Leaf base cuneate-attenuate; twigs glabrous or puberulous.
- 42a. Leaf blade linear-oblongate or linear-lanceolate, 3.5–8 mm wide ..... 5. *V. podocarpoideum*
- 42b. Leaf blade oblanceolate or oblanceolate-ovate, 10–22 mm wide ..... 6. *V. foetidissimum*
- 41b. Leaf base broadly cuneate to obtuse; twigs pubescent.
- 43a. Inflorescence from uppermost axil; leaf blade glaucous adaxially ..... 7. *V. glaucophyllum*
- 43b. Inflorescence from uppermost and lower axils; leaf blade not glaucous adaxially.
- 44a. Inflorescence 2.5–3 cm; calyx lobes ca. 1 mm; corolla urceolate, 4–5 mm ..... 8. *V. omeiense*
- 44b. Inflorescence 4.5–6.5 cm; calyx lobes 2.5–3 mm; corolla campanulate, 6–7 mm ..... 9. *V. pratense*
- 40b. Leaf blade larger, apex acuminate, caudate or abruptly acuminate; secondary veins 6–12-paired, rarely 3- or 4-paired.
- 45a. Inflorescence pubescent, tomentose, or shortly glandular hairy; twigs with hairs or not.
- 46a. Inflorescence shorter than leaves, 1.5–3 cm; leaf blade with appressed glandular hairs abaxially; pedicels 1–2(–3) mm.
- 47a. Rachis and pedicels densely tomentellate; berry densely hairy ..... 18. *V. arbutoides*
- 47b. Rachis and pedicels glandular pubescent; berry glabrous ..... 19. *V. brachyandrum*
- 46b. Inflorescences ca. as long as leaves, 3–8 cm; leaf blade glabrous or sparsely pubescent abaxially; pedicels 2–14 mm.
- 48a. Leaf blade lanceolate or oblong-lanceolate, ca. 3 × as long as broad, base cuneate-attenuate, glabrous; pedicel 10–14 mm ..... 20. *V. kachinense*
- 48b. Leaf blade ovate-cordate, ovate, or oblong, ca. 2.5 × as long as broad, base obtuse to shallowly cordate, abaxially subglabrous or pubescent; pedicel 2–8 mm.
- 49a. Leaf blade ovate-cordate, base cordate, sometimes auriculate or obtuse; inflorescence densely pubescent ..... 21. *V. pseudospadiceum*
- 49b. Leaf blade ovate or oblong, base rounded, rarely shallowly cordate; inflorescence glabrous or puberulous, rarely densely pubescent.
- 50a. Inflorescence 3–5 cm; pedicels 2–6 mm; leaf veins raised adaxially ..... 22. *V. urceolatum*
- 50b. Inflorescence 5–8 cm; pedicels 6–9 mm; leaf veins distinctly impressed adaxially .... 23. *V. bullatum*
- 45b. Inflorescence and sometimes also twig glabrous.
- 51a. Inflorescence longer than or subequal to leaves.
- 52a. Leaf blade rounded to subcordate at base, veins impressed adaxially, blade 9–19 × 2.5–5.5 cm ..... 10. *V. dunnianum*
- 52b. Leaf blade cuneate to broadly cuneate at base, veins distinctly raised or not distinctly raised adaxially, blade 3–12 × 2–3.2 cm.
- 53a. Leaf blade oblong-lanceolate, 6–12 × 2–3.2 cm; corolla white; veins raised on both surfaces ..... 11. *V. crassivenium*
- 53b. Leaf blade obovate to elliptic, 3–4(–7) × 1.2–2(–4) cm; corolla green, purple tinged; veins raised abaxially only ..... 12. *V. supracostatum*
- 51b. Inflorescence shorter than leaves.
- 54a. Leaf margin lacking glands at base ..... 22. *V. urceolatum*
- 54b. Leaf margin with gland(s) at base.
- 55a. Leaf blade (4–)5–8(–10) × 3–4(–5) cm, abaxially glabrous or with appressed glandular hairs.
- 56a. Leaf blade ovate, broadly ovate, or suborbicular, abaxially papillate, with short fulvous hairs ..... 17. *V. chunii*
- 56b. Leaf blade elliptic or ovate-oblong, abaxially smooth, whether or not glandular hairy.
- 57a. Leaf margin with two glands per side at base; petiole 2–3 mm ..... 16. *V. pseudorobustum*
- 57b. Leaf margin with one gland per side at base; petiole at least 5 mm ..... 15. *V. dunalianum*

- 55b. Leaf blade 10–21 × 4–9 cm, abaxially with appressed glandular hairs.
- 58a. Leaf blade elliptic or ovate, bullate, veins distinctly impressed adaxially, raised abaxially ..... 13. *V. pseudobullatum*
- 58b. Leaf blade oblong, oblong-lanceolate, or narrowly ovate, smooth, veins inconspicuously raised on both surfaces.
- 59a. Leaf base rounded to shallowly cordate; petioles 3–6 mm; inflorescence 1.5–3 cm; pedicels 9–12 mm ..... 14. *V. petelotii*
- 59b. Leaf base cuneate to obtuse; petioles 5–14 mm; inflorescence 3–7 cm; pedicels 5–8 mm ..... 15. *V. dunalianum*
- 21b. Leaf margin denticulate, crenulate, rarely entire or subentire; corolla urceolate or tubular, rarely campanulate; anthers with short spurs or not.
- 60a. Leaves pseudovercillate, rarely scattered; raceme elongate; calyx tube often with fleshy protuberances; twigs often with some conspicuous and subsistent bud scales.
- 61a. Leaf margin entire; twigs without conspicuous bud scales.
- 62a. Leaf blade ovate or elliptic, 6–15 × 2.5–7 cm; pedicels purple, slender; corolla white-green, urceolate-tubular; filaments subglabrous, anthers without spurs ..... 49. *V. ardisioides*
- 62b. Leaf blade oblong-lanceolate or oblong-ovate, 7.5–12 × 2–4 cm; pedicels red, clavate; corolla orange or pink, tubular; filaments pubescent, anthers with 2 short spurs ..... 50. *V. rubescens*
- 61b. Leaf margin serrate; twigs with some conspicuous bud scales.
- 63a. Leaves rather scattered.
- 64a. Branch glabrous; leaf blade 12–18.5 × 3.5–9 cm; inflorescence 2–3.5 cm ..... 58. *V. papulosum*
- 64b. Branch dark brownish hispid, sometimes glandular setose; leaf blade 2.5–6(–10) × 0.6–2(–4) cm; inflorescence 2–15 cm.
- 65a. Leaf blade lanceolate or oblanceolate, 2.5–4.5 × 0.6–1.7 cm; inflorescence 2–5 cm ..... 57. *V. scopulorum*
- 65b. Leaf blade oblong, oblong-obovate, or oblong-lanceolate, 4.5–6(–10) × 1.5–4 cm; inflorescence 5–15 cm ..... 59. *V. subdissitifolium*
- 63b. Leaves 4–6(–10) together.
- 66a. Leaves small, 3.5–5(–7) × 0.9–3 cm; inflorescence 1.5–3(–6) cm.
- 67a. Branch densely shortly setose; leaf blade oblong-lanceolate, base cuneate to narrowly rounded ..... 53. *V. vacciniaceum*
- 67b. Branch densely puberulous and mixed setulose; leaf blade oblong or oblong-ovate, base rounded to slightly cordate ..... 55. *V. leucobotrys*
- 66b. Leaves large, 4–11(–14) × (0.9–)2–5 cm; inflorescence (2–)3.5–6 cm.
- 68a. Leaves 9 or 10 together; rachis, pedicel, and calyx tube densely pubescent ..... 54. *V. tenuiflorum*
- 68b. Leaves 5 or 6 together; rachis, pedicel, and calyx tube glabrous.
- 69a. Leaf blade drying brownish below ..... 56. *V. bulleyanum*
- 69b. Leaf blade drying blackish below.
- 70a. Leaf blade leathery ..... 51. *V. venosum*
- 70b. Leaf blade papery ..... 52. *V. kingdon-wardii*
- 60b. Leaves scattered; inflorescence various; calyx tube lacking fleshy protuberances; twigs without conspicuous and subsistent bud scales.
- 71a. Flowers solitary, 4-merous; leaf blade with 3–5 teeth on each side ..... 74. *V. spiculatum*
- 71b. Flowers in racemes, 5-merous; leaf blade serrate, rarely entire.
- 72a. Bracts usually persistent, rarely caducous; anthers usually without or with very small spurs; leaf blade adaxially smooth, veins not impressed.
- 73a. Leaf blade 4–11 × 1–2 cm, ca. 4 × as long as broad ..... 26. *V. subfalcatum*
- 73b. Leaf blade (1.5–)2–6(–9) × (1–)1.5–3(–4) cm, to 3 × as long as broad.
- 74a. Inflorescence ± hairy.
- 75a. Inflorescence 2–3 × as long as leaves; rachis pubescent, bracts and calyx lobes fimbriate, otherwise glabrous ..... 31. *V. fimbriacteatum*
- 75b. Inflorescence shorter than or ca. as long as leaves; petiole, rachis, calyx, and corolla densely pubescent.
- 76a. Calyx limb not lobed, truncate; corolla purple; bract caducous ..... 29. *V. truncatocalyx*
- 76b. Calyx limb with lobes; corolla white; bract persistent ..... 30. *V. bracteatum*
- 74b. Inflorescence glabrous.
- 77a. Leaf blade ± lanceolate; fruit stalk ca. 2 mm (in *V. randaiense*, unknown in *V. kengii*).
- 78a. Corolla tubular, 5.5–7.5 mm; pedicels ca. 2 mm; tubule of thecae ca. 3 mm, without spur ..... 24. *V. randaiense*
- 78b. Corolla campanulate, ca. 5 mm; pedicels ca. 7 mm; tubule of thecae ca. 1 mm, with a short spur ..... 25. *V. kengii*

- 77b. Leaf blade  $\pm$  elliptic, ovate, or oblong; fruit stalk 3–15 mm.
- 79a. Leaf blade obovate or oblong-elliptic, 4–6  $\times$  2–3 cm, apex obtuse or abruptly acute, margin subentire; fruit stalk 3–5 mm ..... 27. *V. hainanense*
- 79b. Leaf blade ovate, oblong, or rhombic-oblong, (1.5–)2–5  $\times$  (1–)1.5–2.5 cm, apex acute to acuminate, margin dentate; fruit stalk 10–15 mm ..... 28. *V. wrightii*
- 72b. Bracts caducous or absent; anthers usually with short, or very short, spur, very rarely without spur; leaf blade with veins usually impressed adaxially.
- 80a. Corolla campanulate; leaf blade with distant teeth or subentire.
- 81a. Leaf blade 2–7  $\times$  1–2.5 cm, base rounded or broadly cuneate, sometimes cuneate, margin distantly serrate; inflorescence less than 3.5 cm ..... 32. *V. carlesii*
- 81b. Leaf blade 9–18  $\times$  2–9 cm, base cuneate, margin subentire; inflorescence to 10 cm ..... 33. *V. yaoshanicum*
- 80b. Corolla urceolate or tubular; leaf margin distinctly serrate.
- 82a. Plant glabrous.
- 83a. Calyx lobes triangular-lanceolate, apex subulate, margin glandular fimbriate; corolla 7–8 mm; inflorescence 4–10 cm; leaf blade 5.5–12.5 cm, apex falciform-acuminate ..... 34. *V. harmandianum*
- 83b. Calyx lobes triangular or orbicular, apex acute or obtuse, sometimes ciliolate; corolla 6–7(–8) mm; inflorescence 1.5–8(–10) cm; leaf blade 3–9(–13)  $\times$  1.5–3.5 cm, apex acute to acuminate.
- 84a. Bracteoles ovate, apical; pedicels 0.5–2.5 mm; anther tubules ca. as long as thecae ..... 35. *V. duclouxii*
- 84b. Bracteoles linear or lanceolate, sometimes ovate, median to basal; pedicels 1–8 mm; anther tubules longer than thecae.
- 85a. Bracteoles linear, ca. 1.5 mm; pedicels 1–2 mm; tubules 2–3  $\times$  as long as thecae .... 36. *V. brachybotrys*
- 85b. Bracteoles linear-lanceolate to ovate, 2–4 mm, pedicels 2–8 mm; tubules 1.5–2  $\times$  as long as thecae ..... 37. *V. mandarinorum*
- 82b. Inflorescence rachis, pedicel, and calyx, often also twig and petiole,  $\pm$  hairy.
- 86a. Twig densely or sparsely glandular setose.
- 87a. Dwarf shrub, 20–50(–100) cm tall; leaf blade 1.2–3.5  $\times$  0.7–2.5 cm; bract leaflike ..... 39. *V. fragile*
- 87b. Shrub or small tree, 1–8 m tall; leaf blade 3–9  $\times$  2–3.5 cm; bract not leaflike.
- 88a. Leaf blade glabrous or pubescent; bracts 5–7 mm ..... 35. *V. duclouxii*
- 88b. Leaf blade glandular setose and hispidulous; bracts ca. 2.5 mm ..... 38. *V. trichocladum*
- 86b. Twig glabrous, puberulous, pubescent, or tomentose.
- 89a. Inflorescence distinctly shorter than leaves, pubescent or glabrous.
- 90a. Leaf margin entire; calyx lobes ciliolate; anthers without spurs, tubules ca. as long as thecae ..... 40. *V. fimbriicalyx*
- 90b. Leaf margin denticulate; calyx lobes glabrous; anthers with short spurs, tubules longer than thecae.
- 91a. Inflorescence glabrous; leaf blade elliptic-lanceolate, apex caudate-acuminate ..... 41. *V. longicaudatum*
- 91b. Inflorescence usually hairy; leaf blade ovate, elliptic, or ovate-lanceolate, apex acute or caudate-acuminate.
- 92a. Leaf blade ovate or elliptic, 1.7–4(–6)  $\times$  1–2 cm, apex acute or obtuse to acuminate; twig densely pubescent; inflorescence subglabrous; small shrub, 0.5–2 m tall ..... 42. *V. chamaebuxus*
- 92b. Leaf blade ovate-lanceolate to lanceolate, 3–7  $\times$  1.5–2.5 cm, apex acuminate or shortly caudate-acuminate; twig and inflorescence densely puberulous or pubescent; shrub or small tree, 1–6 m tall ..... 43. *V. albidens*
- 89b. Inflorescence ca. as long as or longer than leaves,  $\pm$  pubescent, sometimes subglabrous.
- 93a. Anthers without spurs or spurs inconspicuous; both surfaces of leaf blade drying pale fulvous or straw-colored ..... 48. *V. exaristatum*
- 93b. Anthers with spurs (unknown in *V. guangdongense*); both surfaces of leaf blade drying brown or brown-green.
- 94a. Leaf blade 4–9  $\times$  2–4 cm; anther tubules at least 1.5  $\times$  as long as thecae.
- 95a. Branch, petiole, and inflorescence axis rust-colored pubescent or tomentellate; anther tubules 4–6  $\times$  as long as thecae ..... 44. *V. iteophyllum*
- 95b. Branch, petiole, and inflorescence axis pubescent or glabrous; anther tubules 1.5–2  $\times$  as long as thecae ..... 37. *V. mandarinorum*
- 94b. Leaf blade 2–6  $\times$  0.7–2.5 cm; anther tubules ca. as long as thecae or slightly longer (unknown in *V. guangdongense*).

- 96a. Leaf base rounded or broadly cuneate ..... 45. *V. serrulatum*
- 96b. Leaf base cuneate or broadly cuneate.
- 97a. Leaf blade ovate or ovate-lanceolate to lanceolate, 2–6 × 0.7–2.5 cm; pedicels 1–2 mm ..... 46. *V. pubicalyx*
- 97b. Leaf blade elliptic or elliptic-lanceolate, 3.5–4.2 × 1.2–1.6 cm; pedicels 3–3.5 mm ..... 47. *V. guangdongense*

**1. *Vaccinium glaucoalbum*** J. D. Hooker ex C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 453. 1882 [“*glauco-album*”].

粉白越桔 *fen bai yue ju*

Shrubs evergreen, (0.3–)1–3 m tall. Twigs subglabrous or pubescent, when older with scattered raised lenticels; bud scales inconspicuous. Leaves scattered; petiole 2–4 mm, glabrous; leaf blade yellowish green adaxially, elliptic to ovate-elliptic, 4–6 × 2–4 cm, thinly leathery, abaxially glaucous, sparsely glandular setose on midvein, secondary veins 4–8 pairs, ascending, raised on both surfaces, fine veins barely evident, base cuneate or broadly cuneate, margin plane, densely glandular serrulate, with 1 basal gland per side, apex obtuse to acute. Inflorescences racemose, 3–5.5 cm, pubescent, 5–10-flowered; bracts persistent, leaflike, broadly elliptic, 1–2 cm, glabrous, slightly glaucous, apex acute. Pedicel 3–5 mm, glabrous, glaucous; bracteoles persistent, oblong-lanceolate, 7–9 mm, glabrous, glaucous. Hypanthium ca. 1.8 mm, glabrous, glaucous; calyx limb ca. 1 mm; lobes broadly triangular, ca. 0.2 mm, apex ± rounded. Corolla white, urceolate-campanulate, ca. 6 mm; lobes reflexed, ca. 0.5 mm. Filaments 2–2.5 mm, densely pubescent; anthers ca. 3 mm, with 2 erect spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, purple, with a bloom, 6–8 mm in diam. Fl. Jun, fr. Aug–Dec.

Forest margins, thickets; 2900–3300 m. SE Xizang, W Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].

**2. *Vaccinium gaultheriifolium*** (Griffith) J. D. Hooker ex C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 453. 1882.

软骨边越桔 *ruan gu bian yue ju*

Shrubs evergreen, 2–4 m tall, sometimes epiphytic. Twigs glabrous; bud scales caducous. Leaves scattered; petiole 4–6 mm; leaf blade elliptic, 7–13 × 4–6.5 cm, leathery, abaxially glaucous, glabrous or sparsely glandular setose on midvein, adaxially glabrous, secondary veins 5–8 pairs, fine veins raised on both surfaces, base broadly cuneate to obtuse, decurrent, margin plane, entire or sparsely glandular setose, with 1–3 basal glands per side, apex shortly acuminate. Inflorescences racemose, 2–3.5 cm, glabrous, 8–13-flowered; bracts caducous, elliptic, ca. 1.2 cm. Pedicel 4–12 mm, expanded towards apex; bracteoles caducous, linear, 5–6 mm. Hypanthium glabrous, glaucous; calyx limb 0.7–1 mm, triangular-toothed nearly to base. Corolla pink or red, urceolate, 6–11 mm; lobes ca. 1 mm. Stamens ca. as long as corolla; filaments ca. 1.5 mm, densely pubescent; anthers ca. 3 mm, with 2 erect spurs; tubules ca. as long as thecae or shorter. Style puberulous apically. Berry 10-pseudoloculed, dark purple, with a bloom, 8–9 mm in diam.

Forests, forest margins, sometimes epiphytic on trees, thickets on stony mountain slopes, slopes; 1200–2600 m. SE Xizang, NW and SE Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].

- 1a. Leaf blade sparsely glandular setose on midvein abaxially, with 3 basal glands per side; pedicel 6–12 mm; corolla pink, 6–7 mm ..... 2a. var. *gaultheriifolium*
- 1b. Leaf blade glabrous abaxially, with 1 basal gland per side; pedicel 4–5 mm; corolla red, 8–11 mm ..... 2b. var. *glaucorubrum*

**2a. *Vaccinium gaultheriifolium*** var. *gaultheriifolium*.

软骨边越桔(原变种) *ruan gu bian yue ju* (*yuan bian zhong*)

*Thibaudia gaultheriifolia* Griffith, Ic. Pl. Asiat. 4: t. 512. 1854; *Vaccinium diaphanoloma* Handel-Mazzetti.

Leaf blade abaxially sparsely glandular setose on midvein, with 3 basal glands per side. Pedicel 6–12 mm, in fruit to 1–1.7 cm. Corolla pink, 6–7 mm.

Forests, forest margins, sometimes epiphytic on trees; 1200–1900 m. SE Xizang, NW Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].

**2b. *Vaccinium gaultheriifolium*** var. *glaucorubrum* C. Y. Wu, Acta Bot. Yunnan. 9: 379. 1987.

粉花软骨边越桔 *fen hua ruan gu bian yue ju*

Leaf blade abaxially glabrous, with 1 basal gland per side. Pedicel 4–5 mm, in fruit to 7 mm. Corolla red, 8–11 mm.

• Thickets on stony mountain slopes, slopes; 1800–2600 m. SE Yunnan (Maguan, Malipo).

**3. *Vaccinium cavinerve*** C. Y. Wu, Acta Bot. Yunnan. 9: 379. 1987.

圆顶越桔 *yuan ding yue ju*

Shrubs evergreen, ca. 2 m tall, glabrous. Twigs rounded; bud scales caducous. Leaves borne towards ends of twigs; petiole 5–7 mm; leaf blade elliptic, 5–6.5 × 3–4 cm, thickly leathery, both surfaces punctate, secondary veins 6 or 7 pairs, fine veins inconspicuous abaxially, impressed adaxially, base broadly cuneate, decurrent, margin slightly revolute, entire, with 1 basal gland side, apex rounded. Inflorescences racemose, ca. 1.5 cm, many flowered; bracts oblong, ca. 3 cm, apex acute. Pedicel 1–1.5 mm. Hypanthium 1–1.5 mm; calyx lobes ovate, ca. 1 mm, apex acute. Corolla greenish purple, urceolate, ca. 3.5 mm, teeth triangular. Filaments ca. 0.6 mm, glabrous; anthers ca. 1.6 mm, with 2 erect spurs; tubules ca. as long as thecae. Immature berry globose. Fl. May.

Thickets; 1900–2600 m. SE Yunnan [N Vietnam].

**4. *Vaccinium impressinerve*** C. Y. Wu, Acta Bot. Yunnan. 9: 381. 1987.

凹脉越桔 *ao mai yue ju*

Shrubs evergreen, procumbent, sparsely branched. Twigs

angled, pubescent; bud scales caducous. Leaves 1 or 2 at ends of twigs, sessile; leaf blade ovate or elliptic, 4–8 × 2.5–4 cm, thickly leathery, glabrous or abaxially with sparse appressed hairs, midvein stout, secondary veins 4 pairs, subascending, secondary and fine veins raised abaxially, impressed adaxially, base cuneate to broadly cuneate, margin plane, entire, with 1 basal gland per side, apex obtuse or emarginate. Inflorescences from defoliate axils, racemose, 1–2 cm, usually 3-flowered; bracts ca. 1 cm. Pedicel 1–1.7 cm, expanded towards apex, glabrous; bracteoles similar to bracts. Hypanthium glabrous; calyx lobes oblong, 4–6 mm. Corolla pinkish, campanulate, ca. 1.2 cm, glabrous; lobes broadly triangular. Filaments ca. 3 mm, densely ciliate; anthers ca. 1 cm, with 2 erect spurs; tubules ca. 2 × as long as thecae. Berry globose, ca. 8 mm in diam. Fl. May–Jun, fr. Jul.

• Mossy places in evergreen forests on calcareous mountains; ca. 1700 m. SE Yunnan (Malipo, Xichou).

**5. *Vaccinium podocarpoideum*** W. P. Fang & Z. H. Pan, Acta Phytotax. Sin. 19: 107. 1981.

罗汉松叶乌饭 *luo han song ye wu fan*

Shrubs evergreen, 40–90 cm tall. Twigs angled, puberulous, glabrescent; bud scales inconspicuous. Leaves dense; petiole ca. 1.5 mm, glabrous; leaf blade linear-oblong or linear-lanceolate, 2.5–3.2 cm × 3.5–8 mm, leathery, glabrous, secondary veins 3 pairs, fine veins inconspicuous, base cuneate, decurrent, margin slightly revolute, entire, with 1 basal gland per side, apex acute. Inflorescences at upper parts of branches, racemose, 4–5 cm, angled, glabrous, 5–7-flowered; bracts unknown. Pedicel 6–8 mm, glabrous, with a bloom. Flowers unknown. Immature berry globose, 4–5 mm in diam., with a bloom; persistent calyx lobes triangular, 1.5–2 mm, glabrous, apex acuminate. Fr. Jul.

• Thickets in wooded valleys, shrubby slopes; ca. 1100 m. Guangxi, Hunan.

**6. *Vaccinium foetidissimum*** H. Léveillé & Vaniot, Repert. Spec. Nov. Regni Veg. 9: 447. 1911.

臭越桔 *xiu yue ju*

*Anisophyllea cavaleriei* H. Léveillé.

Shrubs evergreen, 0.5–2.5 m tall, much branched, glabrous. Twigs angled; bud scales inconspicuous. Leaves scattered; petiole 2–5 mm; leaf blade oblanceolate or oblanceolate-ovate, 4–7 × 1–2.2 cm, leathery, secondary veins 3(–5) pairs, strongly ascending, secondary and fine veins slightly raised abaxially, raised adaxially, base cuneate-attenuate, margin slightly revolute, entire, with 1 basal gland per side, apex acute, shortly acuminate, or obtuse. Inflorescences racemose, 2–6 cm, angled, many flowered; bracts unknown. Pedicel 5–8 mm. Flowers unknown. Berry 10-pseudoloculed, ovoid, 6–7 mm in diam., with a bloom, fetid; persistent calyx lobes ca. 2.8 mm. Fr. Aug–Oct.

• Forests; 900–1500 m. S Guizhou.

**7. *Vaccinium glaucophyllum*** C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 381. 1987.

灰叶乌饭 *hui ye wu fan*

Shrubs evergreen, 0.5–3 m tall, much branched. Twigs angled, stout, densely pubescent. Leaves dense; petiole ca. 2 mm, ± pubescent; leaf blade brownish abaxially, oblong-elliptic or elliptic, 1.8–2.5 cm × 5–9 mm, leathery, abaxially initially only midvein pubescent, adaxially glaucous, both surfaces early glabrescent, secondary veins 3 or 4 pairs, fine veins inconspicuous, base broadly cuneate, margin revolute, entire, with 1 basal gland per side, apex acute or shortly acuminate. Inflorescences racemose, 3–4 cm, angled, glabrous; flowers many, close; bracts unknown. Pedicel 3–4 mm, glabrous. Flowers unknown. Immature berry 10-pseudoloculed, globose, glabrous; persistent calyx lobes triangular, 0.6–1 mm, glabrous. Fr. Jun.

• Dense forests; 1700–1800 m. SW Guizhou.

**8. *Vaccinium omeiense*** W. P. Fang, Icon. Pl. Omei. 1(1): t. 38. 1942.

峨眉越桔 *e mei yue ju*

Shrubs evergreen, occasionally epiphytic, 0.3–1(–4) m tall, much branched. Twigs angled, densely pubescent; bud scales inconspicuous. Leaves dense; petiole 1–3 mm, ± pubescent; leaf blade elliptic or elliptic-oblong, 1.4–3.5 × 0.8–1.4 cm, leathery, adaxially initially puberulent, glabrescent, secondary veins 2 or 3 pairs, ascending, slightly raised abaxially, inconspicuous adaxially, fine veins inconspicuous, base broadly cuneate, margin revolute, entire, with 1 basal gland per side, apex acute. Inflorescences axillary, racemose, 2.5–3 cm, glabrous, ca. 4-flowered; bracts caducous, red or tinged with yellow, elliptic, 5–7 mm, ciliate. Pedicel 2–3 mm, glabrous. Hypanthium dark red, ca. 1 mm, glabrous; calyx limb ca. 1 mm, divided nearly to base, teeth triangular. Corolla red or purplish, urceolate, 4–5 mm, glabrous; lobes recurved, ca. 0.6 mm. Filaments 1–1.5 mm, pubescent; anthers ca. 3 mm, with 2 erect spurs; tubules 1–2 × as long as thecae. Berry 10-pseudoloculed, subglobose, 5–6 mm in diam., glabrous. Fl. Jun–Jul, fr. Aug–Oct.

• Forests, occasionally epiphytic, rocks; 1800–2100 m. NE Guangxi, W Guizhou, C Sichuan, NE Yunnan.

**9. *Vaccinium pratense*** P. C. Tam ex C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 383. 1987.

草地越桔 *cao di yue ju*

Shrubs evergreen. Twigs angled, densely pubescent, glabrescent; bud scales caducous. Leaves scattered; petiole stout, flattened, ca. 2 mm, densely pubescent; leaf blade elliptic or ovate-elliptic, 2.4–3.6 × 1.3–2 cm, leathery, abaxially appressed-hairy, adaxially densely puberulent, secondary veins 3 or 4 pairs, base broadly cuneate to obtuse, margin slightly revolute or not, entire, with 2–5 basal glands per side, apex acute, shortly acuminate, or abruptly acuminate. Inflorescences from upper axils, racemose, 4.5–6.5 cm, with sparse claviform glandular hairs, 5–10-flowered; bracts caducous, ovate-lanceolate, 1.1–1.6 cm, glabrous. Pedicel 4–6 mm, thickened toward apex. Hypanthium glabrous; calyx lobes triangular, 2.5–3 mm. Corolla purple-red, campanulate, 6–7 mm, glabrous; lobes erect or recurved, ovate-triangular, 2–3 mm. Filaments ca. 3 mm, puberulent; anthers ca. 4 mm, with 2 spreading spurs; tubules ca. 2 × as long as thecae. Berry ca. 4 mm in diam. Fl. May, fr. Jul.

- Forests; 900–1000 m. Guangdong.

**10. *Vaccinium dunnianum*** Sleumer, Bot. Jahrb. Syst. 71: 447. 1941.

长穗越桔 chang sui yue ju

*Agapetes vaccinioides* Dunn, J. Linn. Soc., Bot. 35: 515. 31 Oct 1903, not *A. vaccinioides* H. Léveillé (Apr–May 1903).

Shrubs evergreen, rarely small trees, 1–5 m tall, occasionally epiphytic, sparsely branched, glabrous. Twigs terete, slender, slightly flexuous; bud scales inconspicuous. Leaves scattered; petiole 1–2 mm, stout; leaf blade ovate-lanceolate, 9–19 × 2.5–5.5 cm, leathery, secondary veins 5–9, fine veins raised abaxially, impressed adaxially, base rounded to subcordate, margin slightly revolute or not, entire, basal glands absent, apex long acuminate or caudate. Inflorescences racemose, (3–)7–15 cm, many flowered; bracts caducous, ca. 1 mm. Pedicel 0.6–1.5 cm. Hypanthium ca. 0.6 mm; calyx lobes triangular, ca. 1 mm. Corolla yellow-green, tinged with purple, campanulate, 6–7 mm; lobes reflexed, ovate-triangular, ca. 2 mm. Filaments 1.5–3 mm, densely pubescent; anthers ca. 4 mm, with 2 spreading spurs; tubules 1.5–2 × as long as thecae. Berry 10-pseudoloculed, ca. 6 mm in diam. Fl. Apr–May, fr. Jun–Nov.

- Evergreen forests, sparse forests and thickets on calcareous mountains, occasionally epiphytic on trees; 1100–1800 m. W Guangxi, SE Yunnan.

**11. *Vaccinium crassivenium*** Sleumer, Notizbl. Bot. Gart. Berlin-Dahlem 12: 482. 1935.

网脉越桔 wang mai yue ju

Shrubs evergreen, 2–3 m tall, glabrous. Twigs narrowly angled; bud scales inconspicuous. Leaves scattered; petiole 1.5–2 cm, slender, glabrous; leaf blade oblong-lanceolate, 6–12 × 2–3.2 cm, leathery, secondary veins 6 pairs, ascending, fine veins distinctly raised on both surfaces, base broadly cuneate, margin slightly revolute, entire, with 1 or 2 basal glands per side, apex acuminate. Inflorescences axillary and terminal, racemose, 6.5–12 cm, many flowered; bracts caducous, lanceolate, 3–5 mm, margin serrulate. Pedicel 4–6 mm. Hypanthium ca. 0.6 mm; calyx lobes ovate-triangular, 0.7–1 mm. Corolla white, urceolate, 4–6 mm; lobes ca. 0.5 mm. Filaments ca. 1 mm, rust-colored puberulous; anthers ca. 1.5 mm, with 2 inconspicuous spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, globose, 5–6 mm in diam. Fl. Apr–May, fr. Jul.

- Forests, cliffs; 600–1400 m. E Guangxi.

**12. *Vaccinium supracostatum*** Handel-Mazzetti, Sinensia 5: 3. 1934.

凸脉越桔 tu mai yue ju

Shrubs evergreen, 0.7–2 m tall or small trees to 7 m tall, shortly branched. Twigs distinctly angled, initially pubescent, glabrescent; bud scales inconspicuous. Leaves rather dense; petiole flattened, 1.5–2 mm, pubescent; leaf blade obovate to elliptic, 3–4(–7) × 1.2–4 cm, leathery, abaxially glabrous, adaxially pubescent on midvein and secondary veins, secondary veins 5 or 6 pairs, strongly ascending, secondary and fine veins

flat and inconspicuous abaxially, distinctly raised adaxially, base cuneate-attenuate, margin slightly recurved, entire, with 1(or 2) basal glands per side, apex shortly abruptly acuminate. Inflorescences racemose, 3–4 cm, glabrous or with glandular hairs, ca. 8-flowered; bracts and bracteoles caducous. Pedicel 3–4 mm, glabrous. Hypanthium ca. 1 mm, glabrous; calyx lobes triangular to ovate, 1.5–2 mm. Corolla virescent, tinged with purple, campanulate, ca. 5 mm, glabrous; lobes reflexed at apex, triangular, ca. 2 mm. Filaments 1–1.5 mm, laxly puberulent; anthers 3–8 mm, with 2 spreading spurs; tubules ca. 1.5 × as long as thecae. Berry 10-pseudoloculed, 4–5 mm in diam. Fl. Jun, fr. Jul–Aug.

- Dense forests, thickets; 400–1700 m. N Guangxi, S Guizhou.

**13. *Vaccinium pseudobullatum*** W. P. Fang & Z. H. Pan, Acta Phytotax. Sin. 19: 108. 1981.

拟泡叶乌饭 ni pao ye wu fan

Shrubs evergreen, erect or scandent, ca. 3 m tall. Twigs subterete, lenticels many; bud scales inconspicuous. Leaves scattered; petiole 6–8 mm, glabrous; leaf blade elliptic or ovate, 11–17.5 × 5.5–9 cm, leathery, abaxially densely brownish glandular hairy, adaxially subglabrous, secondary veins 8–12 pairs, secondary and fine veins raised abaxially and strongly impressed adaxially, base rounded or broadly cuneate, margin revolute, entire, with 1 basal gland per side, apex abruptly acuminate or shortly caudate-acuminate. Inflorescence racemose, 1.5–3 cm, glabrous, 6–10-flowered; bracts caducous, obovate-spatulate, 1–1.2 cm. Pedicel 4–7 mm, glabrous. Hypanthium ca. 1.5 mm, glabrous; calyx lobes triangular-lanceolate, 4–6 mm, strongly veined. Corolla white to pink or dark red, campanulate, 8–10 mm, glabrous; lobes ovate-triangular, 2.5–4 mm. Filaments 1–1.5 mm, glabrous or pilose; anthers ca. 6 mm, with 2 spreading spurs; tubules 2–3 × as long as thecae. Immature berry 10-pseudoloculed, globose. Fl. Feb–Apr, fr. after May.

- Evergreen forests on calcareous mountains; 1000–1700 m. SE Yunnan.

**14. *Vaccinium petelotii*** Merrill, Univ. Calif. Publ. Bot. 13: 138. 1926.

大叶越桔 da ye yue ju

*Agapetes parviflora* Dunn.

Shrubs evergreen, erect or scandent, rarely epiphytic, 2–5 m tall, sparsely branched. Twigs angled, glabrous, when old strongly lenticellate; bud scales inconspicuous. Leaves scattered; petiole 3–6 mm, glabrous; leaf blade oblong or narrowly ovate, 14–21 × 4.5–8.5 cm, leathery, abaxially sparsely appressed-glandular pubescent, adaxially glabrous, secondary veins 9–12 pairs, ascending, raised abaxially, flat adaxially, base rounded to shallowly cordate, margin plane, entire, with 1 basal gland per side, apex acuminate or shortly caudate. Inflorescences racemose, ca. 3 cm, glabrous, 6- or 7-flowered; bracts unknown. Pedicel 0.9–1.2 cm. Hypanthium ca. 1.3 mm, glabrous; calyx limb divided nearly to base; calyx lobes triangular-ovate, ca. 3 mm, strongly veined. Corolla cream-colored, campanulate, 6–11 mm, glabrous; lobes spreading or reflexed, triangular, ca. 3

mm. Filaments ca. 0.5 mm, glabrous; anthers ca. 4 mm, with 2 spreading spurs; tubules ca. 3 × as long as thecae. Berry 10-pseudoloculed, dark red, globose, 6–9 mm in diam.; fruit stalk 1.5–2 cm. Fl. Sep–Oct, fr. after Nov–Aug of next year.

Evergreen forests often in ravines, rarely epiphytic on trees; 1100–1700 m. SE Yunnan [Vietnam].

**15. *Vaccinium dunalianum*** Wight, Calcutta J. Nat. Hist. 8: 175. 1847.

樟叶越桔 zhang ye yue ju

Shrubs evergreen, erect or occasionally scandent, 1–4 m tall or trees 3–17 m tall, sometimes epiphytic. Twigs narrowly angled, glabrous or pubescent; bud scales conspicuous, caducous. Leaves scattered; petiole 5–14 mm, glabrous to densely pubescent; leaf blade elliptic, oblong, oblong-lanceolate, or ovate, 4.5–13(–17) × 2–5.5(–8) cm, leathery to thickly leathery, abaxially sparsely appressed-glandular hairy, adaxially glabrous or pubescent on midvein, rarely densely dark punctate, secondary veins 3–9 pairs, conspicuous adaxially, sometimes conspicuous abaxially, fine veins inconspicuous or raised adaxially, base cuneate to obtuse, margin plane, entire, with 1 basal gland per side, apex caudate-acuminate. Inflorescences racemose, 3–7 cm, glabrous, 5–18-flowered; bracts caducous, ovate, 7–10 mm. Pedicel 5–8 mm. Hypanthium 1.2–1.5 mm, glabrous; calyx lobes triangular or lanceolate, 1–2.5 mm, glabrous or with hairs. Corolla virescent, purplish, or pinkish, broadly campanulate, ca. 6 mm, glabrous; lobes triangular, ca. 2 mm. Filaments ca. 1 mm, puberulous; anthers 3–3.5 mm, with 2 spreading spurs; tubules 1–2 × as long as thecae. Berry 10-pseudoloculed, dark purple with a bloom, 4–12 mm in diam. Fl. Apr–May, fr. Sep–Dec.

Forests, forest margins, sometimes epiphytic on trees, thickets, shrubby slopes, exposed rocky slopes, high mountains, calcareous mountains; (700–)1400–2700(–3100) m. Guangxi, Guizhou, Sichuan, Taiwan, Xizang, Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim, Vietnam].

- 1a. Twigs, petioles, both surfaces of leaves on midvein sparsely or densely pubescent ..... 15b. var. *urophyllum*
- 1b. Twigs, petioles, both surfaces of leaves glabrous, or sometimes leaf abaxially sparsely appressed-glandular hairy, or sometimes petioles pubescent.
  - 2a. Leaf blade 10–17 × 4–8 cm; a shrub or twining shrub, rarely a tree ..... 15c. var. *megaphyllum*
  - 2b. Leaf blade 4.5–13 × 2–5 cm; a shrub, rarely scandent.
    - 3a. Leaf blade 4.5–13 × 2.5–5 cm; calyx lobes ca. 1 mm, triangular ..... 15a. var. *dunalianum*
    - 3b. Leaf blade 5–11 × 2.5–3.5 cm; calyx lobes ca. 2.5 mm, lanceolate ..... 15d. var. *caudatifolium*

**15a. *Vaccinium dunalianum*** var. *dunalianum*

樟叶越桔(原变种) zhang ye yue ju (yuan bian zhong)

*Epigynium dunalianum* (Wight) Klotzsch; *Thibaudia revoluta* Griffith.

Twigs, petioles, both surfaces of leaves glabrous, sometimes abaxially sparsely appressed-glandular hairy. Leaf blade 4.5–13 × 2.5–5 cm. Calyx lobes triangular, 0.8–1 mm.

Dense or sparse forests, forests and thickets of calcareous mountains, rarely epiphytic on trees, thickets at roadsides, shrubby dry slopes; (700–)2000–2700(–3100) m. Guangxi, Guizhou, Sichuan, Xizang, Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim, Vietnam].

**15b. *Vaccinium dunalianum*** var. *urophyllum* Rehder & E. H. Wilson in Sargent, Pl. Wilson. 1: 560. 1913.

尾叶越桔 wei ye yue ju

*Pieris martini* H. Léveillé; *Vaccinium camphorifolium* Handel-Mazzetti; *V. dunalianum* var. *calycinum* Dop; *V. dopii* Copeland; *V. loquihense* Dop & Trochain–Marquès; *V. petelotii* Dop (1930), not Merrill (1926); *V. sangtavanense* Dop & Trochain–Marquès; *V. yersinii* A. Chevalier.

Twigs, petioles, midvein of leaves on both surfaces pubescent. Leaf blade 6–12.7 × 2–4.7 cm. Calyx lobes 1.5–2.2 mm.

Evergreen forests, mixed forests, sometimes epiphytic on trees, shrubby slopes, calcareous mountains; 1400–2700(–3100) m. Guizhou, Xizang, Yunnan [Myanmar, C and N Vietnam].

**15c. *Vaccinium dunalianum*** var. *megaphyllum* Sleumer, Bot. Jahrb. Syst. 71: 448. 1941, excl. *C. W. Wang 66945*.

大樟叶越桔 da zhang ye yue ju

*Vaccinium lincangense* W. P. Fang & Z. H. Pan.

Shrubs, sometimes subscandent. Twigs and petioles usually glabrous. Leaf blade 10–17 × (2.8–)4–8 cm, both surfaces usually glabrous. Calyx lobes ca. 0.9 mm.

• Mossy forests, mixed forests on calcareous mountains, sometimes epiphytic on *Quercus*; 1400–2500 m. W Guizhou, SE and W Yunnan.

**15d. *Vaccinium dunalianum*** var. *caudatifolium* (Hayata) H. L. Li, Woody Fl. Taiwan, 700. 1963.

长尾叶越桔 chang wei ye yue ju

*Vaccinium caudatifolium* Hayata, Icon. Pl. Formos. 3: 127. 1913.

Twigs and petioles pubescent or glabrous. Leaf blade 5–11 × 1.8–3.5 cm, glabrous. Calyx lobes lanceolate, 2.2–2.5 mm.

• Broad-leaved forest margins, sometimes epiphytic on trees, high mountains, exposed rocky slopes; 1600–2300 m. Taiwan.

**16. *Vaccinium pseudorobustum*** Sleumer, Bot. Jahrb. Syst. 71: 451. 1941.

椭圆叶越桔 tuo yuan ye yue ju

Shrubs scandent or small trees, evergreen, sparsely branched. Twigs angled, densely pubescent; bud scales inconspicuous. Leaves scattered; petiole 2–3 mm, glabrous or pubescent; leaf blade elliptic or ovate-oblong, 5–8(–10) × 3–4(–5) cm, leathery, abaxially appressed-glandular hairy or glabrous,

adaxially glabrous or initially pubescent on midvein, secondary veins 3 or 4 pairs, fine veins  $\pm$  raised abaxially, strongly raised adaxially, base broadly cuneate, decurrent, margin slightly recurved, entire, with 2 basal glands per side, apex shortly caudate or abruptly shortly acuminate for ca. 1 cm. Inflorescences racemose, 3–5 cm, angled, glabrous, 10- to many flowered; bracts caducous. Pedicel 4–5 mm, stout. Hypanthium ca. 1.3 mm, glabrous; calyx lobes triangular, ca. 2 mm. Corolla greenish white, campanulate, ca. 7 mm, glabrous; lobes reflexed, triangular, ca. 2.5 mm. Filaments ca. 2 mm, pubescent; anthers ca. 4 mm, with 2 spurs; tubules ca.  $3 \times$  as long as thecae. Berry 10-pseudoloculed, 5–6 mm in diam. Fl. Jun, fr. Jul–Oct.

- Forests, rocky mountains; 1300–1700 m. Guangdong, Guangxi.

**17. *Vaccinium chunii*** Merrill ex Sleumer, Bot. Jahrb. Syst. 71: 450. 1941.

蓝果越桔 lan guo yue ju

Shrubs evergreen, 1–2 m tall, sparsely branched. Twigs angled, glabrous; bud scales inconspicuous. Leaves scattered; petiole 0.5–1 cm; leaf blade ovate, broadly ovate, or suborbicular, 5–7  $\times$  3–4.5 cm, thickly leathery, abaxially papillate, with short fulvous hairs, adaxially glabrous, secondary veins 6 or 7 pairs, ascending, slender, inconspicuous abaxially, raised adaxially, fine veins not evident, base broadly cuneate, truncate, or rounded, margin slightly revolute, entire, with 1 or 2 basal glands per side, apex abruptly caudate-acuminate. Inflorescences racemose, 2.5–4 cm, stout, angled, glabrous, 5–9-flowered; bracts caducous, lanceolate, ca. 9 mm. Pedicel ca. 3 mm, stout. Hypanthium ca. 1.5 mm; calyx lobes lanceolate, 2–2.5 mm, apex acuminate. Corolla greenish white, urceolate to campanulate, 3.5–6 mm, glabrous; lobes reflexed at apex, ovate, ca. 1.8 mm. Filaments ca. 1.3 mm, puberulent; anthers ca. 4 mm, with 2 spurs; tubules ca.  $2 \times$  as long as thecae. Berry 10-pseudoloculed, dark blue with a bloom, ca. 5 mm in diam.; pedicel 4–5 mm. Fl. Mar–May, fr. Sep–Dec.

- Dense forests, rocks in forests; 1200–1400 m. Hainan [Vietnam].

**18. *Vaccinium arbutoides*** C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 453. 1882.

草莓树状越桔 cao mei shu zhuang yue ju

Shrubs epiphytic, 0.6–1 m tall, sparsely branched. Twigs subangled, glabrous, with scattered lenticels; bud scales inconspicuous. Leaves scattered; petiole 6–9 mm, stout, densely shortly strigose; leaf blade oblong or elliptic, 8–13  $\times$  3–5 cm, leathery, abaxially densely glandular pubescent, adaxially glabrous, secondary veins 5 or 8 pairs, ascending, secondary and fine veins raised abaxially, flat adaxially, base broadly cuneate, margin plane, entire, with 1 basal gland per side, apex shortly caudate-acuminate. Inflorescences racemose, 1.5–3 cm, densely brownish tomentellate, many flowered; bracts caducous. Pedicel 1–3 mm, densely tomentellate. Hypanthium densely strigose; calyx lobes narrowly triangular, ca. 2.5 mm, densely ciliate. Corolla not known. Filaments ca. 1.5 mm, pilose; anthers ca. 1.5 mm, with 2 spreading spurs, tubules ca.  $1/2$  as long as thecae and ca. as long as spurs. Berry 10-pseudoloculed, red to dark purple, globose, 6–7 mm in diam., densely hairy. Fr. Nov.

Forests, epiphytic on old tree stumps; ca. 2500 m. S Xizang, NW Yunnan [NE India, Myanmar].

**19. *Vaccinium brachyandrum*** C. Y. Wu & R. C. Fang, Acta Bot. Yunnan 9: 383. 1987.

短蕊越桔 duan rui yue ju

Shrubs evergreen, scandent. Twigs angled, pubescent or subglabrous; bud scales caducous. Leaves scattered; petiole 0.8–1 cm, stout, pubescent or subglabrous; leaf blade ovate-elliptic, 8.5–11  $\times$  4–6 cm, leathery, abaxially appressed-glandular pubescent, adaxially glabrous, secondary veins 6 or 7 pairs, subascending, secondary and fine veins raised abaxially, impressed adaxially, base rounded, margin plane, entire, with broad, cartilaginous edge, with 1 basal gland per side, apex shortly caudate-acuminate. Inflorescences racemose, 1.5–3.5 cm, angled, glandular pubescent, many flowered; bracts caducous, ovate, 3–4 mm. Pedicel ca. 2 mm, glandular pubescent. Hypanthium glabrous; calyx lobes ovate-triangular, ca. 2 mm, ciliate. Corolla urceolate, ca. 4 mm, glabrous; lobes triangular. Filaments ca. 0.5 mm, glabrous; anthers ca. 2 mm, with 2 erect spurs; tubules ca. as long as thecae. Ripe berry unknown. Fl. May.

- About 2700 m. W Yunnan (Tengchong).

**20. *Vaccinium kachinense*** Brandis, Ind. Trees, 406. 1921.

卡钦越桔 ka qin yue ju

Shrubs evergreen, 0.5–4 m tall, with inflated root tubers, sparsely branched. Twigs angled, glabrous, scattered; bud scales persistent, lanceolate, 1–1.4 cm. Leaves weakly pseudoverticillate; petiole 4–5 mm, stout, glabrous; leaf blade lanceolate or oblong-lanceolate, 7–15(–17)  $\times$  2–5 cm, leathery, glabrous, secondary veins 7–13 pairs, slender, strongly raised abaxially, raised adaxially, base cuneate, margin slightly recurved, entire, with 1 subbasal gland per side, apex acute-acuminate. Inflorescences racemose, 3–5 cm, densely puberulent, with persistent bud scales, many flowered; bracts unknown. Pedicel 1–1.4 cm, slender, puberulent. Hypanthium ca. 1.3 mm, densely puberulent; calyx limb triangular-lanceolate, 1–1.8 mm, divided nearly to base, densely puberulent. Corolla pinkish, urceolate, ca. 5 mm, puberulent; lobes reflexed, ca. 1 mm. Filaments 1–2 mm, densely pubescent; anthers 2.5–3.5 mm, with 2 inconspicuous spurs; tubules ca.  $2 \times$  longer than thecae. Berry 10-pseudoloculed, globose, ca. 6 mm in diam. Fl. Mar, fr. May.

Evergreen forests, *Pinus* and *Quercus* forests, rocky slopes; 2100–2600 m. W Yunnan [Myanmar].

**21. *Vaccinium pseudospadiceum*** Dop in Lecomte, Fl. Indo-Chine 3: 705. 1930.

耳叶越桔 er ye yue ju

Shrubs evergreen, ca. 2 m tall, sparsely branched. Twigs terete, spreading pubescent, glabrescent; bud scales inconspicuous. Leaves scattered; petiole ca. 1 mm, strigose; leaf blade ovate to cordate, 8–12  $\times$  3.5–5.5 cm, thinly leathery, abaxially sparsely strigose on midvein, adaxially glabrous, secondary veins ca. 10 pairs, fine veins raised on both surfaces, base cor-

date or obtuse, sometimes auriculate, margin plane, entire, apex acuminate to 2.5 cm. Inflorescences racemose, 1(–3) from same axil, 3.5–8 cm, densely spreading pubescent, 3–8-flowered; bracts triangular, 1–2 mm. Pedicel 5–8 mm, indumentum as with rachis. Hypanthium ca. 1 mm, densely pubescent; calyx lobes triangular, 2–4 mm, glabrous or with hairs. Corolla greenish, broadly campanulate, ca. 5.5 mm, glabrous; lobes reflexed, triangular. Filaments ca. 2 mm, pubescent; anthers ca. 3 mm, with 2 falcate spurs; tubules ca. 2.5 × as long as thecae. Ripe fruit unknown. Fl. May.

Evergreen valley forests. SE Yunnan [N Vietnam].

**22. *Vaccinium urceolatum*** Hemsley, J. Linn. Soc., Bot. 26: 16. 1889.

红花越桔 hong hua yue ju

Shrubs or small trees, evergreen, (0.4–)1–5 m tall, occasionally epiphytic, sparsely branched. Twigs angled, pubescent; bud scales inconspicuous. Leaves scattered; petiole 2–3 mm, pubescent; leaf blade ovate to oblong, 6–13 × 2.5–5.5 cm, leathery, both surfaces initially pubescent or glabrescent, abaxially persistently pubescent, adaxially subglabrescent, secondary veins 2–5 pairs, strongly ascending, evident on both surfaces, fine veins inconspicuous or evident on both surfaces, base rounded to slightly cordate, margin slightly revolute, entire, apex ± abruptly acuminate to 2 cm. Inflorescences racemose, 3–5(–9) cm, glabrous or pubescent, many flowered; bracts caducous, broadly ovate, 6–8 mm, ciliate. Pedicel 2–6 mm, glabrous or pubescent. Calyx ca. 1 mm, glabrous; lobes triangular, 1–1.5 mm. Corolla pinkish or yellow-green, tinged with pink, urceolate or campanulate, 4–5 mm; lobes recurved, ca. 2 mm. Filaments ca. 1 mm, with sparse hairs; anthers 3–4 mm, with 2 erect spurs; tubules 1.5–2 × as long as thecae. Berry 10-pseudoloculed, dark purple, 4–6 mm in diam. Fl. May–Jul, fr. Jun–Sep.

• Forests, rocks in forests, occasionally epiphytic on trees, thickets; 700–2000 m. SE Guizhou, C and S Sichuan, NE Yunnan.

- 1a. Inflorescence axis 3–5 cm, inflorescence axis, pedicels, and berry glabrous ..... 22a. var. *urceolatum*
- 1b. Inflorescence axis 5–9 cm, inflorescence axis, pedicels, and berry densely pubescent ..... 22b. var. *pubescens*

**22a. *Vaccinium urceolatum* var. *urceolatum***

红花越桔(原变种) hong hua yue ju (yuan bian zhong)

Inflorescence axis 3–5 cm, inflorescence axis, pedicels, and berry glabrous.

• *Quercus* forests, thickets; 700–2000 m. C and S Sichuan, NE Yunnan.

**22b. *Vaccinium urceolatum* var. *pubescens*** C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 384. 1987.

毛序红花越桔 mao xu hong hua yue ju

Inflorescence axis 5–9 cm, inflorescence axis, pedicels, and berry densely pubescent.

• Forests, rocks in forests, occasionally epiphytic on trees; 1600–1800 m. NE Yunnan (Daguan).

**23. *Vaccinium bullatum*** (Dop) Sleumer, Bot. Jahrb. Syst. 71: 446. 1941.

泡泡叶越桔 pao pao ye yue ju

*Agapetes bullata* Dop in Lecompte, Fl. Indo-Chine 3: 700. 1930.

Shrubs evergreen, ca. 2 m tall, sparsely branched. Twigs angled, slender, densely puberulous, with many brownish lenticels; bud scales inconspicuous. Leaves scattered; petiole 1–2 mm, puberulous; leaf blade ovate or narrowly ovate, 9–16 × 5–8 cm, leathery, subglabrous, secondary veins 7 or 8 pairs, ± ascending, secondary and fine veins distinctly raised abaxially, distinctly impressed adaxially, base rounded, margin slightly revolute, entire, with 1 basal gland per side, apex acute to acuminate. Inflorescences racemose, 5–8 cm, puberulous; bracts triangular, ca. 2 mm. Pedicel 6–9 mm, puberulous, expanded towards apex. Flowers unknown. Immature berry 10-pseudoloculed, ca. 7 mm in diam.; persistent calyx lobes lanceolate, 2–3 mm, puberulous. Fr. Sep.

Forests on calcareous mountains. W Guangxi [Vietnam].

**24. *Vaccinium randaiense*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 168. 1911.

畚大越桔 luan da yue ju

*Vaccinium bracteatum* Thunberg var. *lanceolatum* Nakai; *V. hancockiae* Merrill.

Shrubs evergreen, 3–6 m tall, much branched, glabrous. Twigs subrounded; bud scales inconspicuous. Leaves scattered; petiole 4–8 mm; leaf blade lanceolate-rhombic, lanceolate-oblong, or lanceolate, 3–7 × 1.5–2 cm, leathery, glabrous, secondary veins 5 or 6 pairs, not ascending, fine veins raised abaxially, less obvious adaxially, base broadly cuneate, margin plane, conspicuously to inconspicuously toothed or subentire, apex acuminate for ca. 1 cm. Inflorescences pseudoterminal, racemose, (1–)3–4.5 cm, angled, glabrous, ca. 10-flowered; bracts lanceolate, 4–5 mm, glabrous; bracteoles unknown. Pedicel 1–2 mm, glabrous. Hypanthium ca. 0.7 mm, glabrous; calyx lobes triangular, 0.8–1 mm, glabrous. Corolla white, tubular, 5.5–7.5 mm, glabrous; lobes triangular, ca. 0.5 mm. Filaments ca. 2 mm, villous; anthers 2.5–3 mm, without spurs, tubules ca. 2 × as long as thecae. Berry 10-pseudoloculed, dark purple, 5–6 mm in diam.; fruit stalk ca. 2 mm, glabrous. Fl. Jul–Aug, fr. Aug–Oct.

Mountain forests, forest margins; 400–900(–2500) m. N Guangdong, Guangxi, C Guizhou, Hunan, Taiwan [Japan].

**25. *Vaccinium kengii*** C. E. Chang, Bull. Taiwan Inst. Agric. 10: 54. 1969.

鞍马山越桔 an ma shan yue ju

Trees small. Twigs slender. Leaves scattered; petiole ca. 8 mm, pilose; leaf blade ovate-lanceolate, 6.5–7 × 1.8–2.2 cm, leathery, both surfaces glabrous, secondary veins 7 pairs, inconspicuous adaxially, base obtuse or acute, margin crenulate-serrate, apex long acuminate or cuspidate-acuminate. Inflorescences racemose, terminal or pseudoterminal, 5–6 cm, glabrous; bracts lanceolate, margin crenulate, ca. 6 mm. Pedicel ca.

7 mm, glabrous. Hypanthium cup-shaped; calyx lobes triangular, slightly ciliate, apex acute. Corolla campanulate, ca. 5 × 6 mm, glabrous; lobes obtuse, ca. 3 mm. Filaments ca. 0.8 mm, villous; anthers ca. 1.2 mm, with 2 very short spurs; tubules 0.8–1 mm. Immature berry 10-pseudoloculed. Fl. Aug.

• Forests; 1600–2300 m. C and N Taiwan (Taizhong, Taoyuan, Yilan).

The above description follows that in the protologue.

**26. *Vaccinium subfalcatum*** Merrill ex Sleumer, Bot. Jahrb. Syst. 71: 475. 1941.

镰叶越桔 *lian ye yue ju*

Shrubs or small trees, evergreen, 2–5(–7) m tall, glabrous. Twigs subangled; bud scales inconspicuous. Leaves scattered; petiole 2–3 mm; leaf blade narrowly lanceolate or elliptic-lanceolate, 4–11 × 1–2(–3) cm, thinly leathery, secondary veins 7 or 8 pairs, ascending, secondary and fine veins raised abaxially, flat to impressed or inconspicuous adaxially, base cuneate-attenuate, margin plane, serrate, apex long acuminate or subfalcate. Inflorescences axillary and terminal, racemose, 4–6 cm, slender, angled, ca. 10-flowered; bracts ovate-lanceolate or oblong-lanceolate, 0.8–1.5 cm × ca. 2.5 mm, margin shortly glandular hairy. Pedicel 4–6 mm. Flowers fragrant. Hypanthium ca. 1.3 mm, densely pubescent; calyx lobes narrowly triangular, 2–2.5 mm, glabrous. Corolla white, tubular, ca. 8 mm, puberulous; lobes reflexed, ca. 0.6 mm. Stamens ca. 6 mm, densely hairy; anthers ca. 1 mm with 2 short spurs; tubules ca. as long as thecae, 1.5–2 mm. Berry 10-pseudoloculed, dark purple, pubescent, 5–6 mm in diam. Fl. May, fr. Oct.

Forests, thickets, rocky slopes; (100–)300–900 m. SW Guangdong, S Guangxi [N Vietnam].

**27. *Vaccinium hainanense*** Sleumer, Bot. Jahrb. Syst. 71: 469. 1941.

海南越桔 *hai nan yue ju*

Shrubs evergreen, glabrous. Twigs terete, slightly angled; bud scales inconspicuous. Leaves scattered; petiole 6–8 mm; leaf blade oblong-elliptic or obovate, 4–6 × 2–3 cm, leathery, secondary veins 5 or 6 pairs, secondary and fine veins abaxially raised, adaxially flat, base cuneate-attenuate, slightly decurrent, margin plane, entire, without basal glands, apex obtuse or abruptly obtuse-acute. Inflorescences racemose, 4–6 cm, angled, many flowered; bracts unknown. Pedicel 2.5–5 mm. Flower unknown. Berry 10-pseudoloculed, red, globose, ca. 5 mm in diam. Fr. Jun–Oct.

• Forests on mountain summits. NE Hainan (Ding'an).

**28. *Vaccinium wrightii*** Gray, Mem. Amer. Acad. Arts Sci., n.s., 6: 398. 1858–1859.

海岛越桔 *hai dao yue ju*

Shrubs or small trees, evergreen, 4–5 m tall. Twigs subterete, glabrous or sparsely pubescent; bud scales inconspicuous. Leaves scattered; petiole 1–2 mm, puberulous or glabrous; leaf blade ovate, elliptic, elliptic-lanceolate, oblong, or rhombic-oblong, (1.5–)2–5 × (1–)1.5–2.5 cm, thickly leathery, glabrous, secondary veins 3 or 4 pairs, base cuneate to broadly cu-

neate to suborbicular, margin serrate, apex acute to acuminate. Inflorescences pseudoterminal, racemose, ca. 7 cm, glabrous; bracts persistent, leaflike, 2–5 mm. Pedicel 5–10 mm. Calyx glabrous; lobes triangular. Corolla urceolate to campanulate-tubular, 5–7 mm, glabrous. Filaments pilose at base; anthers with 2 spurs on back. Berry ca. 6 mm in diam.; fruit stalk 1–1.5 cm.  $2n = 24^*$ .

Forests, near coasts; 600–1600 m. Taiwan [Japan (including Ryukyu Islands)].

- 1a. Leaves elliptic or elliptic-lanceolate, 3–5 × 1.5–2.5 cm; a small tree ..... 28a. var. *wrightii*
- 1b. Leaves elliptic, 1.5–2 × 1–1.3 cm; a shrub ..... 28b. var. *formosanum*

**28a. *Vaccinium wrightii* var. *wrightii***

海岛越桔(原变种) *hai dao yue ju* (*yuan bian zhong*)

*Vaccinium bracteatum* Thunberg var. *wrightii* (Gray) Rehder & E. H. Wilson.

Trees small. Leaves elliptic or elliptic-lanceolate, 3–5 × 1.5–2.5 cm.

Near coasts; 600–1600 m. Taiwan [Japan (including Ryukyu Islands)].

**28b. *Vaccinium wrightii* var. *formosanum*** (Hayata) H. L. Li, Woody Fl. Taiwan, 704. 1963.

长柄海岛越桔 *chang bing hai dao yue ju*

*Vaccinium formosanum* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 167. 1911; *V. bracteatum* Thunberg var. *formosanum* (Hayata) S. S. Ying.

Shrubs small. Leaves elliptic, 1.5–2 × 1–1.5 cm.

• Forests; ca. 1600 m. E Taiwan.

**29. *Vaccinium truncatocalyx*** Chun ex W. P. Fang & Z. H. Pan, Acta Phytotax. Sin. 19: 112. 1981.

平萼乌饭 *ping e wu fan*

Shrubs or small trees, evergreen, 2.6–8 m tall. Twigs narrowly angled, glabrous; bud scales inconspicuous. Leaves scattered; petiole 3–4 mm, glabrous; leaf blade elliptic or oblong-elliptic, 3–5 × 1.2–1.5 cm, thinly leathery, glabrous, secondary veins 5 or 6 pairs, base broadly cuneate, margin plane, inconspicuously dentate, apex acuminate. Inflorescences pseudoterminal, racemose, 1.5–2 cm, densely pubescent; bracts caducous. Pedicel 1.5–2 mm, densely pubescent. Hypanthium ca. 1.4 mm, densely pubescent; calyx lobes obsolete. Corolla purple, tubular-urceolate, 4.5–5 mm, densely pubescent; lobes reflexed, triangular. Filaments ca. 2 mm, slender, densely pubescent; anthers ca. 0.5 mm, without spurs; tubules ca. 3 × as long as thecae. Berry unknown. Fl. Jul.

• Forests. W Guangdong (Xinyi).

**30. *Vaccinium bracteatum*** Thunberg in Murray, Syst. Veg., ed. 14, 363. 1784.

南烛 *nan zhu*

Shrubs or small trees, evergreen, 2–6(–9) m tall, much branched. Twigs inconspicuously angled, pubescent or glabrous; bud scales inconspicuous. Leaves scattered; petiole 2–8 mm, puberulous or glabrous; leaf blade elliptic, rhombic- or lanceolate-elliptic, or lanceolate, rarely obovate, (1.1–)4–9 × (0.7–)2–4 cm, thinly leathery, glabrous, secondary veins 5–7 pairs, barely raised, fine veins conspicuous or not, base cuneate, broadly cuneate, or obtuse, margin plane, denticulate, apex acute, acuminate, rarely rounded or long acuminate. Inflorescences pseudoterminal, racemose, 4–10 cm, densely pubescent, rarely glabrous, many flowered; bracts persistent or caducous, leaflike, lanceolate, 0.5–2 cm. Pedicel ca. 4 mm, densely pubescent or subglabrous. Hypanthium densely pubescent or tomentellate, rarely subglabrous; calyx limb ca. 1 mm, triangular-toothed. Corolla white, rarely reddish, tubular or slightly urceolate, 5–7 mm, densely pubescent; lobes reflexed, triangular. Filaments 2–2.5 mm, densely pilose; anthers 2–2.5 mm, without spurs; tubules 2–2.5 × as long as thecae. Berry 10-pseudoloculed, dark purple, pubescent. Fl. Jun–Jul, fr. Aug–Oct.

Forests, thickets, grassy places at roadsides; 400–1500(–1900) m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Cambodia, Indonesia, S Japan, Korea, Laos, Malaysia, Thailand, Vietnam].

This species is used medicinally and to stain cooked rice.

- 1a. Corolla reddish, corolla tube 2–3 mm in diam. .... 30d. var. *rubellum*
- 1b. Corolla white, corolla tube 3–4 mm in diam.
  - 2a. Leaf blade 4–9 × 2–4 cm ..... 30a. var. *bracteatum*
  - 2b. Leaf blade 1–4 × 0.7–1.4 cm.
    - 3a. Leaf blade rhombic-elliptic or lanceolate-elliptic, apex acuminate, 1.1–4 × 0.7–1.4 cm ..... 30b. var. *chinense*
    - 3b. Leaf blade obovate, apex rounded, 1.2–1.4 × ca. 0.9 cm ..... 30c. var. *obovatum*

**30a. *Vaccinium bracteatum* var. *bracteatum***

南烛(原变种) nan zhu (yuan bian zhong)

*Acosta spicata* Loureiro; *Pieris divaricata* H. Léveillé; *P. lucida* H. Léveillé; *P. ovalifolia* (Wallich) D. Don var. *denticulata* H. Léveillé; *Vaccinium bracteatum* var. *longitubum* Hayata; *V. malaccense* Wight; *V. spicatum* (Loureiro) Poiret.

Plants glabrous or hairy. Leaf blade 4–9 × 2–4 cm, apex acute to acuminate. Corolla white; tube 3–4 mm in diam.

Forests, thickets; 400–1400(–1900) m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Cambodia, Indonesia, S Japan, Korea, Laos, Malaysia, Thailand, Vietnam].

**30b. *Vaccinium bracteatum* var. *chinense* (Loddiges) Chun ex Sleumer, Bot. Jahrb. Syst. 71: 474. 1941.**

小叶南烛 xiao ye nan zhu

*Andromeda chinensis* Loddiges, Bot. Cab. 17: t. 1648. 1831; *Vaccinium chinense* (Loddiges) Champion.

Plants subglabrous. Leaf blade rhombic-elliptic or lanceolate-elliptic, 1.1–4 × 0.7–1.4 cm, apex acuminate or acute. Corolla white; tube 3–4 mm in diam.

• Forests, thickets; 800–1500 m. Fujian, Guangdong, S Guangxi.

**30c. *Vaccinium bracteatum* var. *obovatum* C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 385. 1987.**

倒卵叶南烛 dao luan ye nan zhu

Plants glabrous or subglabrous. Leaf blade obovate, 1.2–1.4 × ca. 0.9 cm, apex rounded. Corolla white; tube 3–4 mm in diam.

• Grassy places at roadsides. SE Guangdong (Haifeng).

**30d. *Vaccinium bracteatum* var. *rubellum* P. S. Hsu et al., Acta Bot. Yunnan. 11: 319. 1989.**

淡红南烛 dan hong nan zhu

Leaf blade elliptic, rhombic-elliptic, or obovate. Corolla reddish; tube 2–3 mm in diam.

• Thickets. Jiangxi, Zhejiang.

**31. *Vaccinium fimbribracteatum* C. Y. Wu, Acta Bot. Yunnan. 9: 385. 1987.**

齿苞越桔 chi bao yue ju

Shrubs evergreen, 1–1.5(–4) m tall, much branched. Twigs terete, densely pubescent; bud scales inconspicuous. Leaves scattered; petiole 2–3 mm, densely fulvous pubescent; leaf blade elliptic-lanceolate, 3.5–5 × 1.3–1.8 cm, leathery, pubescent only on midvein, or abaxially glabrous, secondary veins ca. 7 pairs, fine veins slightly raised abaxially, inconspicuous adaxially, base broadly cuneate to rounded, margin plane, serrate, apex acuminate. Inflorescences racemose, 7–12 cm, pubescent, many flowered; bracts persistent, ovate to lanceolate, 6–10 mm, margin persistently glandular fimbriate, apex subulate. Pedicel reddish, 2–5 mm, glabrous. Hypanthium glabrous; calyx lobes triangular, 1–1.5 mm, fimbriate. Corolla white or pinkish, tubular, 7–8 mm, glabrous; lobes reflexed, triangular. Filaments ca. 2.5 mm, pilose; anthers ca. 1.5 mm with 2 erect spurs; tubules ca. 2 × as long as thecae. Fruit unknown. Fl. Apr–May.

• Forests on slopes; 900–1200 m. N Guizhou, E Sichuan.

**32. *Vaccinium carlesii* Dunn, J. Linn. Soc., Bot. 38: 361. 1908.**

短尾越桔 duan wei yue ju

Shrubs or small trees, evergreen, 1–3(–6) m tall, much branched. Twigs slightly angled, pubescent, glabrescent; bud scales inconspicuous. Leaves dense; petiole 1–5 mm, puberulous or subglabrous; leaf blade ovate-lanceolate or narrowly ovate, 2–7 × 1–2.5 cm, leathery, abaxially glabrous, adaxially densely puberulous on midvein, otherwise glabrous, secondary veins ca. 6 pairs and fine veins inconspicuous on both surfaces, base rounded or broadly cuneate, rarely cuneate, margin plane, serrate, apex acuminate. Inflorescences racemose, 2–3.5 cm, slender, pubescent or glabrous, 6–15-flowered; bracts persistent or sometimes caducous, lanceolate, 2–5(–13) mm. Pedicel ca. 2 mm, glabrous. Hypanthium ca. 0.7 mm, glabrous; calyx lobes triangular, 0.8–1.3 mm. Corolla white, broadly campanulate, 3–5 mm; lobes reflexed, ovate-triangular, 0.7–1.5 mm. Filaments 1–1.5 mm, pilose; anthers 1.5–2 mm, with 2 inconspicuous spurs; tubules 1/2–2/3 as long as thecae. Berry 10-pseudo-

loculed, dark purple, globose, glabrous, with a bloom. Fl. May–Jun, fr. Aug–Oct.

• Evergreen forests, sparse forests, thickets; 300–800(–1200) m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Zhejiang.

**33. *Vaccinium yaoshanicum*** Sleumer, Notizbl. Bot. Gart. Berlin-Dahlem 12: 483. 1935.

瑶山越桔 yao shan yue ju

*Vaccinium yaoshanicum* var. *megaphyllum* C. Y. Wu & R. C. Fang.

Shrubs or small trees, evergreen, to 13 m tall, glabrous. Twigs terete; bud scales inconspicuous. Leaves scattered; petiole 1–2 cm; leaf blade ovate-elliptic or oblong-lanceolate, 9–18 × 2.2–9 cm, thinly leathery, secondary veins ca. 7 pairs, fine veins raised abaxially or inconspicuous, base broadly cuneate, margin plane, entire, sparsely glandular dentate, apex acuminate or long acuminate to 4 cm. Inflorescences racemose, (2–)4–8 (–10) cm, many flowered; bracts ca. 3 mm. Pedicel 3–6 mm. Hypanthium ca. 1 mm; calyx lobes ca. 1 mm, sparsely ciliate. Corolla white, campanulate, 3.4–4 mm; lobes reflexed, ovate-triangular, ca. 2 mm. Filaments ca. 1 mm, puberulous; anthers 2–2.5 mm, with 2 short spurs; tubules ca. as long as thecae. Berry 5-loculed, dark purple, globose, ca. 5 mm in diam. Fl. May–Jun, fr. Jul–Sep.

• Forests, thickets; 900–1000 m. W Guangdong, E Guangxi.

**34. *Vaccinium harmandianum*** Dop in Lecompte, Fl. Indo-Chine 3: 709. 1930.

长冠越桔 chang guan yue ju

Shrubs or small trees, evergreen, 2–10 m tall, glabrous, rarely twigs and petioles pubescent. Twigs angled; bud scales inconspicuous. Leaves scattered; petiole 3–7 mm; leaf blade ovate or ovate-lanceolate, 5.5–12.5 × 2–5 cm, secondary veins 6 or 7 pairs, ascending, fine veins slightly raised abaxially, ± flat adaxially, base cuneate or broadly cuneate, margin plane, shallowly serrate, apex falciform-acuminate. Inflorescences racemose, 4–10 cm, 10–15-flowered; bracts caducous, lanceolate, 5–6 mm. Pedicel 4–5 mm. Hypanthium ca. 1 mm, glabrous; calyx lobes triangular-lanceolate, ca. 1.2 mm, margin glandular fimbriate. Corolla white or tinged with pink, tubular, 7–8 mm; lobes erect or reflexed, ca. 0.7 mm. Filaments ca. 1.8 mm, hairy; anthers ca. 2.5 mm, with 2 inconspicuous spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, purple, globose, 6–7 mm in diam. Fl. Apr–May, fr. Jun–Sep.

Evergreen forests; (800–)1000–1600 m. S Yunnan [Cambodia, Laos].

This species differs from *Vaccinium mandarinorum* by having the leaf blade falciform-acuminate at the apex, calyx lobes triangular-lanceolate with a glandular fimbriate margin, and corolla tubular, 7–8 mm.

One of us (Stevens) questions whether *Vaccinium harmandianum* is the same as *V. sprengelii* (G. Don) Sleumer.

**35. *Vaccinium duclouxii*** (H. Léveillé) Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 62: 146. 1925.

云南越桔 yun nan yue ju

Shrubs or small trees, evergreen, 1–5(–10) m tall, much branched. Twigs angled, glabrous, pubescent, or glandular setose; bud scales inconspicuous. Leaves scattered; petiole 3–6 mm, glabrous, pubescent, or glandular setose; leaf blade ovate-lanceolate, oblong-lanceolate, or ovate, 3–7(–13) × 1.7–3.5 cm, leathery, glabrous or abaxially pubescent on midvein at base, secondary veins 3 pairs, secondary and fine veins raised abaxially, inconspicuous and impressed adaxially, base broadly cuneate or rounded, rarely cuneate, margin plane, slightly recurved, denticulate, apex acuminate or acute. Inflorescences racemose, 1.5–8 cm, glabrous, densely tomentellate, or hirtellous, 9–18-flowered; bracts caducous, ovate or broadly ovate, 5–7 mm, apex caudate. Pedicel 0.5–2.5 mm, glabrous; bracteoles 2, subapical, ovate, ca. 1.5 mm. Hypanthium globose, 1.5–1.7 mm, glabrous or hirtellous; calyx lobes 1–1.3 mm, ciliate or glandular fimbriate. Corolla white or pink, tubular-urceolate, 6–8 mm, glabrous; lobes usually reflexed, triangular. Filaments 2.5–3 mm, pilose; anthers 2.7–3 mm, with 2 inconspicuous spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, dark purple, globose, 6–7 mm in diam. Fl. Feb–May, fr. Jul–Nov.

• Forests, thickets, grassy or rocky slopes; 1500–3100(–3200) m. Sichuan, Xizang, Yunnan.

- 1a. Plant glabrous ..... 35a. var. *duclouxii*
- 1b. Plant with glandular setose and/or pubescent indumentum.
  - 2a. Twigs and petioles pubescent; inflorescence axis tomentellate ..... 35c. var. *pubipes*
  - 2b. Twigs and petioles glandular setose; inflorescence axis glandular setose or hirtellous.
    - 3a. Indumentum glandular setose ..... 35b. var. *hirticaule*
    - 3b. Rachis, hypanthium, and calyx lobes hirtellous, twigs pubescent and glandular setose ..... 35d. var. *hirtellum*

**35a. *Vaccinium duclouxii* var. *duclouxii***

云南越桔(原变种) yun nan yue ju (yuan bian zhong)

*Pieris duclouxii* H. Léveillé, Bull. Acad. Int. Géogr. Bot. 12: 253. 1903; *V. forrestii* Diels.

Twigs, petioles, leaf blade abaxially on midvein, and rachis of inflorescences glabrous.

• Evergreen forests, *Pinus-Quercus* forests, thickets; 1500–3100 m. Sichuan, Yunnan.

**35b. *Vaccinium duclouxii* var. *hirticaule*** C. Y. Wu, Acta Bot. Yunnan. 9: 386. 1987.

刚毛云南越桔 gang mao yun nan yue ju

Twigs, petioles, hypanthium, and calyx lobes ± glandular setose alone.

• Open forests, thickets, grassy or rocky slopes; 1500–2000 (–2200) m. SE Yunnan.

**35c. *Vaccinium duclouxii* var. *pubipes*** C. Y. Wu, Acta Bot. Yunnan. 9: 387. 1987.

柔毛云南越桔 rou mao yun nan yue ju

Twigs, petioles, and leaf blade abaxially pubescent at base; rachis of inflorescences tomentellate.

• Mixed forests, *Pinus* forests, thickets, (1700–)2300–2700 (–3200) m. Xizang, NW Yunnan.

**35d. *Vaccinium duclouxii* var. *hirtellum*** C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 387. 1987.

毛果云南越桔 mao guo yun nan yue ju

Twigs pubescent and glandular setose intermixed. Inflorescence axis, hypanthium, and calyx lobes hirtellous.

• Thickets. C Yunnan.

**36. *Vaccinium brachybotrys*** (Franchet) Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 62: 146. 1925.

短序越桔 duan xu yue ju

*Vaccinium donianum* Wight var. *brachybotrys* Franchet, J. Bot. (Morot) 9: 369. 1895; ?*V. brachybotrys* var. *glaucoarpum* C. Y. Wu.

Shrubs, occasionally small trees, evergreen, (0.5–)1–5 m tall, glabrous. Twigs terete, glaucous when young; bud scales inconspicuous. Leaves scattered; petiole 1–3 mm, sometimes glaucous; leaf blade ovate or ovate-lanceolate, 3–8 × 1.5–3 cm, leathery, glaucous when young, secondary veins 7 or 8 pairs, slightly raised on both surfaces, fine veins raised abaxially, inconspicuous adaxially, base cuneate or rounded, margin denticulate, apex acute or acuminate. Inflorescences racemose, 3–6 cm, many flowered; bracts caducous, ovate, 1.5–3 mm. Pedicel 1–4 mm. Hypanthium usually glaucous; calyx lobes ca. 1 mm. Corolla purple or pink, urceolate or tubular, 6–7 mm; lobes erect or reflexed. Filaments ca. 2 mm, pubescent; anthers ca. 1 mm, with at most 2 inconspicuous spurs; tubules 2–3 × as long as thecae. Berry ca. 5 mm in diam. Fl. Mar–Apr, fr. Apr–May.

• Secondary forests, thickets; 1400–2400 m. W Sichuan, Yunnan.

**37. *Vaccinium mandarinorum*** Diels, Bot. Jahrb. Syst. 29: 516. 1901.

江南越桔 jiang nan yue ju

*Lyonia bracteata* (W. W. Smith) Chun; *Pieris bracteata* W. W. Smith; *P. esquirolii* H. Léveillé & Vaniot; *P. esquirolii* var. *discolor* H. Léveillé & Vaniot; *P. longicornuta* H. Léveillé & Vaniot; *Vaccinium donianum* Wight var. *austrosinense* Handel-Mazzetti; *V. donianum* var. *hangchouense* Matsuda; *V. donianum* var. *laetum* (Diels) Rehder & E. H. Wilson; *V. hangchouense* (Matsuda) Komatsu; *V. laetum* Diels; *V. laetum* var. *undulatum* Y. C. Yang; *V. mandarinorum* var. *austrosinense* (Handel-Mazzetti) Metcalf; *V. mandarinorum* var. *laetum* (Diels) Metcalf; *V. parvibracteatum* Hayata.

Shrubs or small trees, evergreen, 1–4(–7) m tall. Twigs

terete, glabrous or pubescent, sometimes densely puberulous; bud scales inconspicuous. Leaves scattered; petiole 3–8 mm, glabrous or pubescent; leaf blade ovate or oblong-lanceolate to lanceolate, 3–9 × 1.5–3.5 cm, leathery to thinly leathery, both surfaces usually glabrous, sometimes puberulous on midvein, secondary veins 5–9 pairs, ± ascending, thin, fine veins raised abaxially, flat to inconspicuous adaxially, base cuneate to rounded, margin dentate, apex acute to abruptly acuminate for ca. 1.5 cm. Inflorescences racemose, 2.5–10 cm, pubescent or glabrous, many flowered; bracts caducous or persistent, lanceolate, ovate, or ovate-lanceolate, (2–)4–15 mm. Pedicel 2–8 mm, slender, glabrous or puberulous. Hypanthium 1–1.5 mm, glabrous; calyx lobes ± recurved, 0.5–1.5 mm. Corolla white or pinkish, tubular or urceolate, 5–7 mm, glabrous; lobes ca. 1.5 mm. Filaments ca. 1.5 mm, ± pubescent; anthers ca. 3.5 mm, with 2 short spurs; tubules ca. 1.5 × as long as thecae or longer. Berry 10-pseudoloculed, dark purple, glabrous, 4–7 mm in diam. Fl. Apr–Jun, fr. Jun–Oct.

• *Pinus-Quercus* forests, secondary forests, forest margins, thickets; 100–1600 m (or mostly 1800–2900 m on Yunnan plateau). Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Yunnan, Zhejiang.

**38. *Vaccinium trichocladum*** Merrill & Metcalf, Lingnan Sci. J. 16: 174. 1937.

刺毛越桔 ci mao yue ju

Shrubs, occasionally small trees, evergreen, 3–8 m tall. Twigs rounded, densely or sparsely glandular setose and hispidulous, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 2–4 mm, indumentum same as twigs; leaf blade ovate-lanceolate, 4–9 × 2–3 cm, thinly leathery, abaxially hispidulous, intermixed glandular setose on midvein, adaxially densely hispidulous on midvein, otherwise glabrous, secondary veins 8–10 pairs, raised abaxially, flat adaxially, fine veins raised abaxially, inconspicuous adaxially, base rounded or slightly cordate, margin plane, spiniform-dentate or subentire, apex acuminate. Inflorescences pseudoterminal, racemose, 4–8 cm, densely hispidulous, pubescent, or glabrous, many flowered; bracts oblong or oblong-lanceolate, ca. 2.5 mm, margin glandular fimbriate. Pedicel 3–4 mm, indumentum as on rachis. Hypanthium ca. 1 mm, hairy or glabrous; calyx limb divided to near base; calyx lobes triangular-ovate, ca. 1 mm, glabrous. Corolla white, tubular-urceolate, 5–6 mm, glabrous; lobes reflexed, ca. 1 mm. Filaments ca. 1 mm, densely hairy; anthers ca. 3 mm, with 2 spurs; tubules 1.5–2 × as long as thecae. Berry 10-pseudoloculed, red, globose, 5–6 mm in diam., hispidulous. Fl. Apr, fr. May–Sep.

• Forests, open mountain slopes; 200–700 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Jiangxi, Zhejiang.

- 1a. Twigs densely glandular setose and hispidulous; inflorescence axis, pedicels, and hypanthium densely hispidulous and pubescent ..... 38a. var. *trichocladum*
- 1b. Twigs sparsely glandular setose; inflorescence axis, pedicels, and hypanthium glabrous ..... 38b. var. *glabriracemosum*

**38a. *Vaccinium trichocladum* var. *trichocladum***

刺毛越桔(原变种) ci mao yue ju (yuan bian zhong)

*Vaccinium iteophyllum* Hance var. *hispidum* Handel-Mazzetti.

Twigs densely glandular setose and hispidulous. Leaf margin distinctly dentate. Inflorescence axis, pedicels, and hypanthium densely hispidulous and pubescent.

• Forests; 500–700 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Jiangxi, Zhejiang.

**38b. *Vaccinium trichocladum* var. *glabriracemosum* C. Y. Wu, Acta Bot. Yunnan. 9: 387. 1987.**

光序刺毛越桔 guang xu ci mao yue ju

Twigs sparsely glandular setose. Leaf margin inconspicuously dentate or subentire. Inflorescence axis, pedicels, and hypanthium glabrous.

• Open mountain slopes; 200–300 m. Fujian, Jiangxi, Zhejiang.

**39. *Vaccinium fragile* Franchet, J. Bot. (Morot) 9: 366. 1895.**

乌鸦果 wu ya guo

Shrubs dwarf, evergreen, 20–50(–100) cm tall. Stem base a burl. Twigs angled, sparsely or densely glandular setose and pubescent; bud scales inconspicuous. Leaves rather dense; petiole 1–1.5 mm; leaf blade oblong or elliptic, 1.2–4.5 × 0.7–2.5 cm, leathery, both surfaces setose and pubescent, or sparsely shortly hispid, or subglabrous, secondary veins 2–5 pairs, inconspicuous, base rounded or cuneate, margin plane, serrulate, apex acute, acuminate, or obtuse. Inflorescences racemose, 1.5–6 cm, glandular setose and pubescent, many flowered; bracts usually reddish, leaflike, 4–9 mm, both surfaces strigose, margin denticulate or setose. Pedicel 1–2 mm, hairy. Hypanthium green, tinged with dark red, ca. 1.2 mm, hairy or not; calyx lobes 1–1.2 mm. Corolla white, tinged with pink, with 5 red veins, urceolate, 5–6 mm, glabrous or pubescent; lobes 0.6–1 mm. Filaments ca. 1.5 mm, pubescent; anthers ca. 3 mm, with 2 erect spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, red, turning dark purple, 4–5 mm in diam., hairy or not.

• *Pinus* and *Quercus* forests, thickets, open grassy slopes; 1100–3400 m. Guizhou, Sichuan, SE Xizang, Yunnan.

This is an indicator plant of acid soils.

- 1a. Leaf blade 1.2–3.5 × 1.2–2.2 cm, both surfaces ± setose and pubescent, rarely subglabrous ..... 39a. var. *fragile*
- 1b. Leaf blade 3–4.5 × 1.2–2.2 cm, both surfaces subglabrous or abaxially sparsely shortly hispid on midvein ..... 39b. var. *mekongense*

**39a. *Vaccinium fragile* var. *fragile***

乌鸦果(原变种) wu ya guo (yuan bian zhong)

*Pieris gagnepainiana* H. Léveillé; *P. repens* H. Léveillé; *Vaccinium anthonyi* Merrill; *V. fragile* var. *crinitum* Franchet; *V. fragile* var. *myrtifolium* Franchet; *V. repens* (H. Léveillé) Rehder; *V. setosum* C. H. Wright; *V. wardii* Adams.

Leaf blade 1.2–3.5 × 0.7–2.5 cm, with 2 or 3 pairs of

inconspicuous veins, both surfaces ± setose and pubescent, rarely subglabrous; other parts of plant usually with dense hairs.

• *Pinus* forests, thickets, open grassy slopes; 1100–3400 m. Guizhou, Sichuan, SE Xizang (Zayu), Yunnan.

**39b. *Vaccinium fragile* var. *mekongense* (W. W. Smith) Sleumer, Bot. Jahrb. Syst. 71: 456. 1941.**

大叶乌鸦果 da ye wu ya guo

*Vaccinium mekongense* W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 133. 1916; *V. salweenense* W. W. Smith; *V. taliense* W. W. Smith.

Leaf blade 3–4.5 × 1.2–2.2 cm, with 3–5 pairs of veins raised on both surfaces, fine venation ± evident, both surfaces subglabrous or abaxially sparsely shortly hispid on midvein; other parts of plant with fewer hairs.

• *Pinus* and *Quercus* forests, thickets; 1700–2000 m. SW Sichuan, C and W Yunnan.

**40. *Vaccinium fimbriolax* Chun & W. P. Fang, Acta Phytotax. Sin. 6: 165. 1957.**

流苏萼越桔 liu su e yue ju

Shrubs evergreen. Twigs terete, glabrous. Leaves scattered; petiole 4–6 mm, pubescent; leaf blade elliptic-lanceolate or ovate-lanceolate to lanceolate, 3–6.5 × 1.5–2.2 cm, leathery, abaxially glabrous, adaxially initially densely puberulous on midvein, glabrescent, fine veins inconspicuous, base cuneate to broadly cuneate, margin entire, apex caudate-acuminate. Inflorescences racemose, 1–2 cm, thin, angled, glabrous, 6–12-flowered. Pedicel 1.5–2 mm. Hypanthium glabrous; calyx lobes triangular, ca. 0.8 mm, margin densely white fimbriate, apex acute. Corolla white, tubular-campanulate, 4–4.2 mm, glabrous; lobes reflexed, ovate-triangular, ca. 1.5 mm. Anthers without spurs. Berry dark purple, with a bloom, 8–10 mm in diam.

• Forest margins on mountain summits; ca. 1400 m. Guangdong, Guangxi.

**41. *Vaccinium longicaudatum* Chun ex W. P. Fang & Z. H. Pan, Acta Phytotax. Sin. 19: 110. 1981.**

长尾乌饭 chang wei wu fan

*Vaccinium carlesii* Dunn var. *longicaudatum* (Chun ex W. P. Fang & Z. H. Pan) P. C. Tam.

Shrubs evergreen, 1.5–4 m tall. Twigs slightly angled, initially puberulous, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 6–7 mm, puberulous; leaf blade elliptic-lanceolate, 4.5–7 × 1.8–2.5 cm, leathery, secondary veins 6 pairs, ascending, barely evident, base cuneate or broadly cuneate, margin plane, sparsely serrulate, apex caudate-acuminate. Inflorescences racemose, 1.5–2 cm, glabrous, 10–15-flowered; bracts broadly elliptic. Pedicel 1–1.5 mm; bracteoles lanceolate, ca. 1.5 mm. Calyx lobes triangular, ca. 1 mm, margin sparsely ciliate. Corolla white, tubular, 4–4.5 mm, glabrous; lobes triangular-ovate, ca. 1.5 mm. Filaments ca. 0.6 mm, subglabrous; anthers 1–1.2 mm, with 2 small spurs, tubules shorter than thecae, ca. 0.8 mm. Berry red, ca. 5 mm in diam. Fl. Jun, fr. Nov.

• Open montane forests; 700–1600 m. Guangdong, Guangxi, Guizhou, Hunan.

**42. *Vaccinium chamaebuxus*** C. Y. Wu, Acta Bot. Yunnan. 9: 388. 1987.

矮越桔 ai yue ju

Shrubs evergreen, 0.5–2 m tall, much branched. Twigs terete, densely pubescent, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 2–5 mm, adaxially densely pubescent; leaf blade ovate or elliptic, 1.7–4(–6) × 1–2 cm, leathery, adaxially nigrescent-punctate, puberulous on midvein, otherwise glabrous, secondary veins 6 or 7 pairs, fine veins raised abaxially, inconspicuous adaxially, base broadly cuneate, sometimes cuneate or rounded, margin plane, densely serrate, apex acute or obtuse to acuminate. Inflorescences racemose, 1.5–2 cm, pubescent or glabrous, ca. 8-flowered; bracts broadly ovate, 3–5 mm, glabrous. Pedicel 0.5–2 mm, glabrous; bracteoles ca. 2.5 mm, median. Hypanthium glabrous; calyx lobes ovate-triangular or suborbicular, 0.5–1 mm. Corolla white or pink, urceolate, ca. 7 mm, glabrous; lobes triangular or narrowly triangular. Filaments 1–1.2 mm, hairy; anthers 0.8–1 mm, with 2 spurs; tubules ca. 1.2 × as long as thecae. Berry purple, 5–6 mm in diam. Fl. Apr–May, fr. Jun–Nov.

• *Rhododendron* forests on mountain summits, thickets on open slopes; 2500–3100 m. WC Yunnan (Jingdong).

**43. *Vaccinium albidens*** H. Léveillé & Vaniot, Repert. Spec. Nov. Regni Veg. 9: 447. 1911.

白花越桔 bai hua yue ju

Shrubs or small trees, evergreen, 1–6 m tall, much branched. Twigs terete, densely puberulous, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 2–3 mm, densely puberulous or subglabrous; leaf blade ovate-lanceolate, rarely lanceolate, 3–7 × 1.5–2.5 cm, thinly leathery, adaxially puberulous on midvein, otherwise glabrous, secondary veins 5 pairs, fine veins raised abaxially, flat adaxially, base rounded to cuneate, margin plane, denticulate, apex acuminate or caudate-acuminate. Inflorescences racemose, 1.5–4 cm, densely puberulous, 8–16-flowered; bracts caducous, broadly ovate, ca. 3 mm, margin fimbriate. Pedicel 1–1.5 mm, densely puberulous. Hypanthium pubescent; calyx lobes ovate-triangular or suborbicular, 0.5–1 mm, glandular fimbriate. Corolla white, tubular, ca. 6 mm, glabrous; lobes reflexed. Filaments ca. 1.5 mm, pilose; anthers ca. 1.5 mm with 2 inconspicuous spurs; tubules 1–1.5 × as long as thecae. Berry 10-pseudoloculed, ca. 4 mm in diam., pubescent, glabrous when mature. Fl. Feb–Apr, fr. May–Oct.

• Valley forests, thickets, ridges; 1000–2300 m. Guizhou, SE Yunnan.

**44. *Vaccinium iteophyllum*** Hance, Ann. Sci. Nat., Bot., sér. 4, 18: 223. 1862.

黄背越桔 huang bei yue ju

Shrubs or small trees, evergreen, 1–7 m tall. Twigs terete, brownish pubescent or tomentellate, rarely glandular setose, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 2–5 mm, densely brownish pubescent or puberulous, rarely

glandular setose; leaf blade ovate or ovate-lanceolate to lanceolate, 4–13 × 2–4 cm, leathery, abaxially pubescent on midvein, rarely glandular setose, adaxially puberulous on midvein, otherwise glabrous, rarely pubescent, secondary veins 6–9 pairs, ± ascending, fine veins raised abaxially, flat adaxially, base cuneate to rounded, margin plane, sparsely dentate or subentire, apex acuminate. Inflorescence racemose, 4–6 cm, densely pubescent or tomentellate, many flowered; bracts lanceolate, 3–7 mm, puberulous. Pedicel 2–4 mm, densely pubescent or tomentellate. Hypanthium ca. 1.2 mm, hairy; calyx lobes triangular, 1–1.5 mm. Corolla white or pinkish, tubular to urceolate, 5–7 mm, puberulous or not; lobes erect or reflexed, ca. 1 mm. Filaments 1.5–2 mm, densely pubescent; anthers ca. 3 mm, with 2 slender spurs; tubules ca. 3 × as long as thecae. Berry 10-pseudoloculed, globose, 4–5 mm in diam., ± pubescent. Fl. Apr–May, fr. after Jun.

• Forests, montane thickets; 400–1400(–2400) m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Xizang, Yunnan, Zhejiang.

- 1a. Twigs, petioles, and abaxial midvein pubescent or tomentellate ..... 44a. var. *iteophyllum*
- 1b. Twigs, petioles, and abaxial midvein glandular setose ..... 44b. var. *glandulosum*

**44a. *Vaccinium iteophyllum* var. *iteophyllum***

黄背越桔(原变种) huang bei yue ju (yuan bian zhong)

*Vaccinium iteophyllum* var. *fragrans* Rehder & E. H. Wilson.

Twigs, petioles, and abaxial midvein pubescent or tomentellate.

• Forests, montane thickets; 400–1400(–2400) m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Xizang, Yunnan, Zhejiang.

**44b. *Vaccinium iteophyllum* var. *glandulosum*** C. Y. Wu & R. C. Fang in C. Y. Wu, Fl. Xizang. 3: 729. 1986.

腺毛米饭树 xian mao mi fan shu

Twigs, petioles, and abaxial midvein glandular setose.

• Evergreen forests; ca. 2300 m. SE Xizang (Zayü).

**45. *Vaccinium serrulatum*** W. P. Fang & Z. H. Pan, Acta Phytotax. Sin. 19: 111. 1981.

细齿乌饭 xi chi wu fan

Shrubs evergreen. Twigs slightly angled, puberulous; bud scales inconspicuous. Leaves scattered; petiole ca. 4 mm, glabrous; leaf blade elliptic to broadly elliptic, 3–4.5 × 1.3–2.5 cm, leathery, subglabrous or adaxial midvein puberulous, secondary veins 6–8 pairs, fine veins slightly raised abaxially, inconspicuous adaxially, base rounded or broadly cuneate, margin plane, serrulate, apex acuminate, mucronulate. Inflorescences racemose, 1.5–3 cm, pubescent, 8–12-flowered; bracts oblong, ca. 3 mm. Pedicel ca. 1 mm, pubescent. Hypanthium sparsely pubescent; calyx lobes broadly ovate-triangular. Corolla white or pink, urceolate, 5–6 mm, abaxially pilose; lobes ovate-triangular, ca. 1.2 mm. Filaments 1.2–2 mm, pubescent; anthers ca. 2 mm, with 2 slender spurs; tubules ca. as long as thecae or long-

er. Immature berry 3–4 mm in diam., glabrous. Fl. Dec to beginning of next year, fr. Aug.

- About 1500 m. SW Sichuan (Huili), SE Yunnan (Qiubei).

**46. Vaccinium pubicalyx** Franchet, J. Bot. (Morot) 9: 369. 1895.

毛萼越桔 mao e yue ju

Shrubs or small trees, evergreen, 1–4 m tall. Twigs brownish tomentose, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 2–4 mm, brownish tomentose; leaf blade ovate or ovate-lanceolate to lanceolate, 2–6 × 0.7–2.5 cm, thinly leathery, both surfaces ± pubescent on midvein, otherwise glabrous, rarely both surfaces tomentose or villous, abaxially with glands or glandular hairs or not, secondary veins 4–7 pairs, secondary and fine veins ± raised abaxially, flat adaxially, base cuneate or broadly cuneate, rarely rounded, margin plane, serrulate, apex acuminate to caudate, rarely acute. Inflorescences racemose, 1–4 cm, densely pubescent; flowers ca. 10, dense, secund; bracts caducous, pinkish, ovate, 5–8 mm, abaxially and marginally pubescent. Pedicel 1–2 mm, densely pubescent. Hypanthium ca. 0.8 mm, densely pubescent or tomentose, rarely glabrous; calyx lobes triangular, 0.8–1.2 mm, densely pubescent or only margin densely ciliate. Corolla white or pinkish, tubular or tubular-urceolate, ca. 5 mm, glabrous; lobes triangular. Filaments ca. 1.5 mm, pilose; anthers ca. 2.5 mm, with 2 short spurs; tubules ca. as long as thecae or longer. Berry 10-pseudoloculed, dark purple, 5–6 mm, pilose or glabrous. Fl. Apr–May, fr. Sep–Oct.

*Pinus* forests, open valley forests, secondary forests, montane thickets; 600–3600 m. S and W Guizhou, SW Sichuan, Yunnan [Myanmar].

- 1a. Calyx glabrous, lobes densely ciliate ..... 46b. var. *anomalum*
- 1b. Calyx densely pubescent or tomentose.
  - 2a. Calyx densely pubescent; leaves ± pubescent on midvein on both surfaces, otherwise glabrous ..... 46a. var. *pubicalyx*
  - 2b. Calyx densely tomentose; leaves abaxially tomentose or villous .... 46c. var. *leucocalyx*

**46a. Vaccinium pubicalyx** var. **pubicalyx**

毛萼越桔(原变种) mao e yue ju (yuan bian zhong)

*Myrica mairei* H. Léveillé; *Vaccinium spicigerum* W. W. Smith.

Leaves ± pubescent on midvein on both surfaces, otherwise glabrous. Calyx densely pubescent, abaxially with glands or glandular hairs.

*Pinus* forests, secondary forests, montane thickets; 1300–2700 m. W Guizhou, SW Sichuan, Yunnan [Myanmar].

**46b. Vaccinium pubicalyx** var. **anomalum** J. Anthony, Notes Roy. Bot. Gard. Edinburgh 18: 34. 1933.

少毛毛萼越桔 shao mao mao e yue ju

Leaves punctate abaxially, puberulous along midvein or glabrous on both surfaces. Calyx glabrous; lobes densely ciliate.

- Montane thickets; 2000–3600 m. N Yunnan (Eryuan, Luquan).

**46c. Vaccinium pubicalyx** var. **leucocalyx** (H. Léveillé) Rehder, J. Arnold Arbor. 15: 285. 1934.

多毛毛萼越桔 duo mao mao e yue ju

*Pieris esquirolii* H. Léveillé & Vaniot var. *leucocalyx* H. Léveillé, Bull. Soc. Bot. France 53: 206. 1906.

Leaves abaxially tomentose or villous. Calyx densely tomentose.

- Open valley forests, montane thickets; 600–1000 m. S Guizhou.

**47. Vaccinium guangdongense** W. P. Fang & Z. H. Pan, Acta Phytotax. Sin. 19: 112. 1981.

广东乌饭 guang dong wu fan

Trees evergreen, ca. 6 m tall. Twigs slightly angled, glabrous; bud scales inconspicuous. Leaves scattered; petiole 2.5–3 mm, subglabrous; leaf blade elliptic or elliptic-lanceolate, 3.5–4.2 × 1.2–1.6 cm, leathery, glabrous, secondary veins 4–6 pairs, base cuneate, margin plane, obtusely dentate, apex acuminate or acute. Inflorescences racemose, 3.5–4.5 cm, angled, puberulous, many flowered; bracts unknown. Pedicel 3–3.5 mm, puberulous. Flowers unknown. Immature berry red, globose, ca. 2.5 mm in diam., densely pubescent; persistent calyx lobes triangular, densely pubescent. Fr. after Jun.

- Dense montane forests; ca. 900 m. SW Guangdong (Yangjiang).

**48. Vaccinium exaristatum** Kurz, J. Asiatic Soc. Bengal 42(2): 86. 1873.

隐距越桔 yin ju yue ju

*Vaccinium exaristatum* var. *pubescens* Kurz; *V. longitubulosum* J. J. Smith.

Shrubs or small trees, evergreen, (1–)3–5(–14) m tall. Twigs obscurely lenticellate, densely pubescent, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 2–3 mm, densely pubescent; leaf blade drying pale brown or straw-colored on both surfaces, elliptic, oblong-ovate, or oblong-lanceolate, 3–7.5 × 1.1–3 cm, leathery, both surfaces pubescent on midvein, otherwise glabrous or adaxially pubescent, secondary veins 4 or 5 pairs, fine veins raised abaxially, ± flat adaxially, base cuneate to rounded, margin plane, dentate, apex acute or acuminate. Inflorescences racemose, 3–10 cm, usually pubescent, many flowered; bracts caducous, ovate or broadly ovate, 2.5–3 mm. Pedicel 1–3.5 mm, pubescent or glabrous. Hypanthium 0.8–1 mm, pubescent or glabrous; calyx lobes triangular or suborbicular, 0.8–1.2 mm, sometimes densely ciliate. Corolla pink, tubular, 6–8 mm, glabrous; lobes erect or reflexed, triangular or oblong. Filaments ca. 1.8 mm, pilose; anthers ca. 3.5 mm, without or with inconspicuous spurs; tubules 2–3 × as long as thecae. Berry 10-pseudoloculed, red to dark purple, 4–5 mm in diam. Fl. Mar–Apr, fr. May–Jun.

Sparse forests, shrubby slopes; 500–1500(–2000) m. W Guangxi, S Guizhou, S Yunnan [Laos, Myanmar, Thailand, Vietnam].

**49. *Vaccinium ardisioides*** J. D. Hooker ex C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 452. 1882.

紫梗越桔 *zi geng yue ju*

Shrubs evergreen, usually epiphytic, 0.5–1.2 m tall, glabrous. Twigs terete; bud scales inconspicuous. Leaves 3–5-pseudovercillate, sessile; leaf blade ovate or elliptic, 6–15 × 2.5–7 cm, papery to leathery, secondary veins 8–12(–14) pairs, spreading, fine veins raised abaxially, slightly raised adaxially, base broadly obtuse-rounded to narrowly cordate, margin plane, entire, without basal glands, apex acuminate. Inflorescences racemose, 2–4 in whorl of leaves, 7–10 cm, slender, sometimes glaucous, many second flowered; bracts caducous. Pedicel purple, 0.5–1.5 cm, slender, thickened upwards. Hypanthium subglobose, ca. 2.3 mm; calyx limb ca. 2.2 mm, divided 1/3–2/5; calyx lobes triangular, ca. 1 mm. Corolla white-green, urceolate-tubular, 6–7 mm; lobes less than 1 mm. Filaments ca. 2.5 mm, subglabrous; anthers ca. 4.5 mm, papillate, without or with 2 small spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, purple-green, ca. 4 mm in diam.; fruit stalk purple-green. Fl. Mar, fr. May.

Below evergreen trees, usually epiphytic, riversides; 1000–1400 m. NW Yunnan (Dulongjiang) [Myanmar].

**50. *Vaccinium rubescens*** R. C. Fang, Novon 9: 174. 1999.

红梗越桔 *hong geng yue ju*

Shrubs evergreen, terrestrial or epiphytic, 1–2 m tall, glabrous. Twigs terete; bud scales caducous. Leaves 3–8-pseudovercillate, sessile; leaf blade oblong-lanceolate or oblong-ovate, 7.5–12 × 2–4 cm, papery, secondary veins more than 15 pairs, midvein raised on both surfaces, fine veins raised on both surfaces, base narrowly obtuse-rounded, subcordate, margin plane, entire, basal glands inconspicuous, apex acuminate. Inflorescences racemose, red, 7–12 cm, angled-winged, many flowered; bracts unknown. Pedicel red, ca. 1.5 cm, thickened upwards. Hypanthium terete, ca. 4 mm, upper parts free, not adnate to ovary; calyx lobes triangular, ca. 1 mm. Corolla orange or pink, tubular, 7–8 mm; lobes less than 1 mm. Filaments 2–4 mm, pubescent, especially at apex; anthers ca. 3 mm, papillate, with 2 short spurs; tubules ca. as long as thecae. Berry scarlet, ca. 5 mm in diam.; fruit stalk scarlet, ca. 2 cm. Fl. Mar, fr. May.

• Dense forests, sometimes epiphytic, moist places, roadsides; 2000–2200 m. SW Yunnan.

**51. *Vaccinium venosum*** Wight, Icon. Pl. Ind. Orient. 4. t. 1185. 1848.

轮生叶越桔 *lun sheng ye yue ju*

*Epigynium venosum* (Wight) Klotzsch.

Shrubs evergreen, often epiphytic, ca. 60 cm tall. Twigs angled, pubescent or glabrous, when older lenticellate; persistent bud scales few, oblong-lanceolate, ca. 3 mm. Leaves 5- or 6-pseudovercillate, subsessile or shortly petiolate; leaf blade oblong or oblong-lanceolate, 6–10 × 2–3.5 cm, leathery, glabrous, secondary veins (4–)6–10 pairs, ± ascending, fine veins raised abaxially, ± impressed adaxially, base broadly cuneate,

slightly obtuse, margin ?plane, undulate-crenate, apex acuminate. Inflorescences racemose, 3.5–4 cm, glabrous; bud scales persistent, many flowered; bracts caducous, ca. 7 mm. Pedicel 2–2.5 mm, glabrous, thickened upwards. Hypanthium ca. 1 mm, glabrous, with several small, rounded verrucae; calyx lobes triangular, ca. 1 mm. Corolla tubular-urceolate, 4–5 mm, glabrous; lobes ca. 0.5 mm. Filaments ca. 1 mm, glabrous; anthers ca. 3.5 mm, without spurs; tubules rather longer than thecae. Berry 10-pseudoloculed (from ovary). Fl. Dec to beginning of next year.

Epiphytic or on rocks on riverbanks; ca. 1400 m. SE Xizang (Médog) [?Bhutan, NE India].

**52. *Vaccinium kingdon-wardii*** Sleumer, Bot. Jahrb. Syst. 71: 477. 1941.

纸叶越桔 *zhi ye yue ju*

Shrubs evergreen, terrestrial or epiphytic, 2–3 m tall, glabrous. Twigs angled, with few persistent bud scales. Leaves 5- or 6-pseudovercillate; petiole ca. 2 mm; leaf blade elliptic or oblong-lanceolate, 4–8(–14) × 2–5 cm, papery, secondary veins more than 10 pairs, fine veins raised abaxially, impressed adaxially, base cuneate or broadly cuneate, margin obtusely dentate, apex acute to acuminate. Inflorescences racemose, to 5 cm, with persistent bud scales, many flowered; bracts caducous, oblong-ovate, fimbriate. Pedicel 2–3 mm, thickened upwards. Hypanthium with several small, rounded verrucae; calyx lobes triangular, ca. 1.5 mm. Corolla cream-colored or greenish, tubular, ca. 5 mm; lobes ca. 0.5 mm. Filaments ca. 1.5 mm, glabrous; anthers ca. 2.5 mm, without spurs; tubules ca. as long as thecae. Immature berry 10-pseudoloculed, purple, glabrous. Fl. Nov–Dec, fr. Apr–May of next year.

• *Pinus* forests, sometimes epiphytic; 1800–3300 m. SE Xizang (Bomi, Médog).

**53. *Vaccinium vacciniaceum*** (Roxburgh) Sleumer, Bot. Jahrb. Syst. 71: 479. 1941.

小轮叶越桔 *xiao lun ye yue ju*

Shrubs evergreen, terrestrial or epiphytic, ca. 0.5 m tall. Twigs rounded, densely shortly setose, glabrescent; persistent bud scales few, oblong-lanceolate. Leaves 5–8-pseudovercillate; petiole 1–4 mm; leaf blade oblong-lanceolate, 3.5–5 × 0.9–1.4 cm, papery, glabrous, secondary veins 7–11 pairs, spreading, secondary and fine veins raised on both surfaces, base cuneate or obtuse to narrowly rounded, margin plane, sparsely serrate, apex narrowly acute to acuminate to 1 cm. Inflorescences racemose or corymbose-racemose, 1.5–6 cm, glabrous or sparsely glandular hairy, with persistent bud scales, many flowered; bracts caducous, narrowly triangular, ca. 3 mm. Pedicel 5–9 mm, glabrous, thickened upwards. Hypanthium 1–1.5 mm, glabrous; calyx lobes triangular, ca. 1 mm. Corolla greenish yellow, urceolate, 4–6 mm, glabrous; lobes ca. 0.6 mm. Filaments 1–2 mm, glabrous; anthers ca. 4 mm, without spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed (from ovary). Fl. Apr.

Evergreen forests, sometimes epiphytic on trees, mountain valleys; 1200–2400(–2700 m) m. SE Xizang [Bhutan, NE India, Myanmar, Nepal, Sikkim].

- 1a. Corolla tube pubescent adaxially especially towards mouth; petiole 2–4 mm; leaf blade cuneate at base ..... 53a. subsp. *vacciniaceum*
- 1b. Corolla tube glabrous adaxially; petiole 1–2 mm; leaf blade narrowly rounded at base ..... 53b. subsp. *glabritubum*

**53a. *Vaccinium vacciniaceum* subsp. *vacciniaceum***

小轮叶越桔(原亚种) xiao lun ye yue ju (yuan ya zhong)

*Ceratostema vacciniaceum* Roxburgh, Fl. Ind., ed. 1832, 2: 412. 1832; *Agapetes serrata* G. Don; *A. vacciniacea* (Roxburgh) Dunal; *Epigynium serratum* (G. Don) Klotzsch; *Gaylussacia serrata* (G. Don) Lindley; *Vaccinium serratum* (G. Don) Wight.

Petiole 2–4 mm; leaf blade cuneate at base. Corolla tube pubescent adaxially especially towards mouth.  $2n = 24$ .

Evergreen forests, sometimes epiphytic on trees; 2300–2400 m. SE Xizang (Mêdog) [NE India, Myanmar, Nepal].

**53b. *Vaccinium vacciniaceum* subsp. *glabritubum* P. F. Stevens, J. Arnold Arbor. 66: 487. 1985.**

秃冠小轮叶越桔 tu guan xiao lun ye yue ju

Petiole 1–2 mm; leaf blade narrowly rounded at base. Corolla tube glabrous adaxially.

Mountain valleys; 1200–1800(–2700 m). SE Xizang (Cona) [Bhutan, NE India, Nepal, Sikkim].

**54. *Vaccinium tenuiflorum* R. C. Fang, Novon 9: 178. 1999.**

狭花越桔 xia hua yue ju

Shrubs or climbers, evergreen. Twigs angled, pubescent and shortly glandular setose, becoming scabrous; persistent bud scales scattered, lanceolate. Leaves 9- or 10-pseudovercillate; petiole 1–2 mm, pubescent; leaf blade olivaceous abaxially, drying dull green adaxially, lanceolate to oblong-lanceolate, 4–11 × 0.9–2 cm, leathery, when young puberulous on midvein, secondary veins 12 or 13 pairs, fine veins raised abaxially, base narrowly cuneate, ± rounded, margin recurved, sparsely serrate, apex acuminate. Inflorescences racemose, 5–6 cm, densely pubescent, with persistent bud scales, many flowered; bracts lanceolate, 2–3 mm, puberulous, ciliolate. Pedicel 5–6 mm, slender, densely pubescent, slightly thickened upwards. Hypanthium densely pubescent; calyx lobes triangular, ± pubescent. Corolla white, narrowly tubular, 4–5 mm, glabrous except for 5 pubescent ridges; lobes triangular, ca. 0.6 mm. Filaments ca. 2 mm, glabrous; anthers ca. 4 mm, papillate, without spurs; tubules longer than thecae. Berry subglobose, ca. 3 mm in diam. Fl. Dec, fr. Apr.

- Forests; ca. 1800 m. SE Xizang (Mêdog).

**55. *Vaccinium leucobotrys* (Nuttall) G. Nicholson, III. Dict. Gard. 4: 130. 1886.**

白果越桔 bai guo yue ju

*Epigynium leucobotrys* Nuttall, Bot. Mag. 85: t. 5103.

1859; *Vaccinium serratum* (G. Don) Wight var. *leucobotrys* (Nuttall) C. B. Clarke.

Shrubs evergreen, terrestrial or epiphytic, 0.5–1 m tall, with inflated root tubers. Twigs rounded, densely puberulous and brown setulose, scabrous, glabrescent; persistent bud scales lanceolate. Leaves 4–6-pseudovercillate; petiole very short or leaves subsessile; leaf blade oblong or oblong-ovate, 3–5(–7) × 1.8–3 cm, papery, glabrous, secondary veins spreading, 7–9, secondary and fine veins raised abaxially, slightly raised adaxially, base rounded to slightly cordate, margin slightly recurved, denticulate, apex acute to acuminate. Inflorescences racemose, 2–3 cm, glabrous, with persistent bud scales, many flowered; bracts caducous, to 6 mm. Pedicel 2–3 mm. Hypanthium 0.8–1.2 mm, glabrous; calyx lobes triangular, 1–1.3 mm. Corolla white to greenish white, urceolate, ca. 5 mm, glabrous; lobes ca. 0.5 mm. Filaments ca. 0.5 mm, glabrous; anthers ca. 3 mm, without spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, white, slightly depressed, 5–7 mm in diam.; pedicel red, clavate, (0.7–)1–1.2 cm, thickened upwards. Fl. Mar–Apr, fr. May–Aug.

Evergreen forests, sometimes epiphytic on trees, rocks; 2100–2800 m. SE Xizang, NW Yunnan [NE India (Assam), Myanmar].

**56. *Vaccinium bulleyanum* (Diels) Sleumer, Bot. Jahrb. Syst. 71: 478. 1941.**

灯台越桔 deng tai yue ju

*Agapetes bulleyana* Diels, Notes Roy. Bot. Gard. Edinburgh 5: 294. 1912; *A. bulleyana* var. *tenuifolia* J. Anthony.

Shrubs evergreen, 1.2–2.5 m tall. Twigs rounded, pubescent, glabrescent, with scattered rounded lenticels; persistent bud scales scattered. Leaves 4–6-pseudovercillate; petiole very short or leaves subsessile; leaf blade oblong or oblanceolate-oblong, 7–11 × 1.5–3.2 cm, leathery, glabrous, secondary veins 9–11 pairs, strongly raised abaxially, secondary and fine veins inconspicuous adaxially, base narrowly rounded, margin plane, cartilaginous, sparsely callous-serrate, apex acute. Inflorescences from defoliate axils, corymbose-racemose, 2–6 cm, glabrous, many flowered in upper half; bracts lanceolate-subulate, ca. 3 mm. Pedicel 1–1.5 cm. Calyx ca. 2 mm, glabrous; lobes 2.5–3.5 mm. Corolla greenish yellow, tubular-urceolate, 5–9 mm, glabrous; lobes ca. 1 mm. Filaments ca. 1 mm, glabrous; anthers ca. 4.5 mm, without spurs; tubules ca. 1.5 × as long as thecae. Berry 10-pseudoloculed (from ovary). Fl. Mar, fr. after Apr.

- Shaded situations in mountain valleys; 2000–2400 m. W Yunnan.

**57. *Vaccinium scopulorum* W. W. Smith, Notes Roy. Bot. Gard. Edinburgh 9: 135. 1916.**

岩生越桔 yan sheng yue ju

Shrubs evergreen, terrestrial or epiphytic, 1.2–2(–5) m tall, with inflated root tubers. Twigs rounded to angled, densely brown setose-hispid or glandular setose, glabrescent, scabrous, densely punctiform-lenticellate; persistent bud scales scattered, lanceolate. Leaves quite dense; petiole very short or leaves subsessile; leaf blade lanceolate or oblanceolate, 2.5–4.5 × 0.6–1.7

cm, papery, glabrous or adaxially puberulous at base of midvein, secondary veins 5–7 pairs, secondary and fine veins raised on both surfaces, base cuneate, margin plane, sparsely serrulate, apex acute or slightly obtuse, mucronulate. Inflorescences from defoliate to upper foliate axils, racemose, 2–5 cm, slender, glabrous, with persistent bud scales, ca. 5-flowered; bracts caducous, ovate-lanceolate, 1.5–2 mm, glandular ciliate. Pedicel 0.8–1.2 cm, glabrous. Hypanthium 0.8–1.3 mm, glabrous; calyx lobes ovate-triangular, 0.8–1 mm. Corolla greenish white or greenish yellow, urceolate, ca. 5 mm, glabrous; lobes reflexed, ca. 0.5 mm. Filaments ca. 1 mm, glabrous; anthers ca. 4 mm, without spurs; tubules ca. 2 × as long as thecae. Berry 10-pseudoloculed, 4–5 mm in diam. Fl. Mar–Apr, fr. May–Aug.

Montane forests, sometimes epiphytic on trunks of old trees, rocks; 1500–3300 m. W Yunnan [Bhutan, Myanmar].

**58. *Vaccinium papulosum*** C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 388. 1987.

瘤果越桔 liu guo yue ju

Shrubs evergreen, ca. 1 m tall, few branched, glabrous. Twigs rounded, when older strongly white lenticellate; persistent bud scales few. Leaves scattered; petiole 2–6 mm; leaf blade rhombic-elliptic or oblong-lanceolate, 12–18.5 × 3.5–9 cm, thinly leathery, glabrous, secondary veins 8–14 pairs, fine veins slightly raised on both surfaces, base cuneate, margin sparsely obtusely dentate, with 1 basal gland per side, apex acute or acuminate. Inflorescences from foliate or defoliate axils, racemose, 2–3.5 cm, slender, many secund flowered; bracts unknown. Pedicel 6–7 mm. Hypanthium with several small, rounded verrucae; calyx lobes triangular, ca. 0.5 mm. Corolla yellow, urceolate, ca. 5 mm; lobes small. Filaments ca. 0.7 mm; anthers ca. 4.5 mm, without spurs; tubules ca. 2 × as long as thecae. Immature berry verruculose. Fl. Apr–May.

- Evergreen forests; 700–1900 m. SE Xizang (Mêdog).

**59. *Vaccinium subdissitifolium*** P. F. Stevens, J. Arnold Arbor. 66: 484. 1985.

梯脉越桔 ti mai yue ju

*Vaccinium scalarinervium* C. Y. Wu & R. C. Fang; *V. vacciniaceum* (Roxburgh) Sleumer var. *hispidum* (C. B. Clarke) Sleumer; *V. venosum* Wight var. *hispidum* C. B. Clarke.

Shrubs evergreen, usually epiphytic, 0.4–2 m tall. Twigs angled, scabrous, dark brownish hispid; persistent bud scales few. Leaves ± scattered; petiole ca. 2 mm; leaf blade oblong, oblong-obovate, or oblong-lanceolate, 4.5–6(–10) × 1.5–2(–4) cm, papery or leathery, secondary veins 6–10 pairs, fine veins raised abaxially, flat adaxially, base broadly cuneate to narrowly rounded, margin plane, obtusely dentate, apex acute or shortly acuminate. Inflorescences racemose, 5–15 cm, with persistent bud scales, many flowered; bracts ovate-lanceolate, ca. 3.5 mm. Pedicel 1–1.5 cm. Hypanthium ca. 1 mm, glabrous, with several small, rounded verrucae; calyx lobes triangular, less than 1 mm. Corolla greenish yellow, urceolate, ca. 6 mm, 5-angled, glabrous; lobes ca. 0.5 mm. Filaments 0.8–1 mm, glabrous; anthers ca. 3 mm, without spurs; tubules to 1.5 × as long as thecae.

Berry 10-pseudoloculed, greenish white, globose, ca. 3 mm in diam. Fl. Aug, fr. Mar–Apr of next year.

Evergreen forests, usually epiphytic on trees; 1500–1800 m. SE Xizang (Mêdog) [Bhutan, NE India (Assam), Sikkim].

**60. *Vaccinium lanigerum*** Sleumer, Bot. Jahrb. Syst. 71: 443. 1941.

羽毛越桔 yu mao yue ju

Shrubs evergreen, usually epiphytic, ca. 2 m tall, sparsely branched. Twigs terete, densely brown feathery-setiferous, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 2–3 mm, indumentum same as stem; leaf blade oblong-ovate to broadly ovate, 8.5–11 × 3–4.5 cm, somewhat papery, abaxially densely brown feathery-setiferous, adaxially pubescent to glabrescent, secondary veins 2–4 pairs, strongly ascending, slightly raised (obscured by hairs) on both surfaces, base rounded or broadly cuneate, margin slightly recurved, entire, apex abruptly acuminate to 1.5–3 cm. Inflorescences fasciculate, 2- or 3-flowered; bracts persistent, many, imbricate, brown-yellow or brown-red, oblong, 7–10 × 5–7 mm, leathery, densely appressed pubescent. Pedicel ca. 1 mm or flowers sessile. Hypanthium ca. 1.5 mm, glabrous; calyx lobes narrowly triangular, 2–3 mm, abaxially hispid and densely ciliate. Corolla greenish brown, subcampanulate, ca. 7 mm, glabrous; lobes reflexed, ca. 1/2 as long as tube, lanceolate, abaxially ?glabrous, adaxially ?hispid. Filaments ca. 1.5 mm, puberulous; anthers ca. 5 mm, with 2 spreading spurs; tubules 1.5–2 × as long as thecae. Berry 10-pseudoloculed, dark purple or red, included in bracts.

Evergreen forests, usually epiphytic on trees, rocks; 1200–1400 m. SE Xizang (Mêdog), NW Yunnan (Dulongjiang, Gongshan) [Myanmar].

**61. *Vaccinium cuspidifolium*** C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 390. 1987.

凸尖越桔 tu jian yue ju

Shrubs evergreen. Twigs ?angled, densely pubescent; bud scales inconspicuous. Leaves rather dense; petiole ca. 2 mm, pubescent to glabrous; leaf blade elliptic, 2.5–3.8 × 1.2–1.8 cm, leathery, abaxially glabrous, adaxially densely pubescent on midvein, glabrescent, secondary veins 6 or 7 pairs, fine veins ± inconspicuous abaxially, subprominent adaxially, base broadly cuneate, margin revolute, entire, with 1 basal gland per side, apex abruptly acute. Inflorescences racemose, 2–3 mm, pubescent and glandular pilose, 2- or 3-flowered; bracts caducous. Pedicel 3–4 mm, pubescent and glandular pilose. Perianth unknown. Stamens persistent; filaments ca. 1 mm, subglabrous; anthers ca. 2.5 mm, with 2 spreading spurs; tubules 1.5–2 × as long as thecae. Immature berry glabrous; persistent calyx lobes triangular-lanceolate, ca. 2 mm. Fr. Jul.

- Montane forests. NW Guangxi.

**62. *Vaccinium lamprophyllum*** C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 390. 1987.

亮叶越桔 liang ye yue ju

Shrubs evergreen, many branched. Twigs ?terete, densely pubescent, glabrescent; bud scales inconspicuous. Leaves dense;

petiole ca. 2 mm, initially pubescent, glabrescent; leaf blade oblong-obovate, 2–3 × 0.9–1.4 cm, leathery, abaxially sparsely appressed-setose, adaxially nitid, puberulous only on midvein, secondary veins ca. 3 pairs, these and fine veins inconspicuous abaxially, hardly raised adaxially, base broadly cuneate, margin plane, entire, with 1 basal gland per side, cartilaginous, apex acute. Inflorescences racemose, 1.2–2 cm, glabrous, few flowered; bracts unknown. Pedicel ca. 7 mm, glabrous. Flowers unknown. Immature berry glabrous; persistent calyx lobes triangular-lanceolate, 2.5–3 mm. Fl. and fr. Jun.

- Montane dwarf forests; ca. 1200 m. W Guangdong (Fengkai).

**63. *Vaccinium conchophyllum*** Rehder, J. Arnold Arbor. 11: 167. 1930.

贝叶越桔 *bei ye yue ju*

Shrubs evergreen, sometimes epiphytic, 0.2–0.3 m tall. Twigs terete, spreading pilose, glabrescent; bud scales inconspicuous. Leaves dense; petiole 1–2 mm; leaf blade broadly ovate or obovate, 8–14 × 6–9 mm, thickly leathery, abaxially glabrous, adaxially pilose or only on midvein, secondary veins 3 or 4 pairs, ascending, inconspicuous abaxially, inconspicuous or impressed adaxially, base broadly cuneate to rounded, margin revolute, entire, with 1 basal gland per side, initially ciliate, glabrescent, apex rounded. Inflorescences racemose, ca. 1 cm, glabrous, 4–6-flowered; bracts caducous, oblong, ca. 5 mm, glabrous. Pedicel 1–2 mm. Hypanthium ca. 0.6 mm, glabrous; calyx lobes triangular-ovate, 1–1.5 mm. Corolla red, urceolate, 4–5 mm, glabrous; lobes reflexed, triangular, ca. 0.5 mm. Filaments ca. 1 mm, pilose; anthers ca. 2.5 mm, with 2 spurs, tubules slightly longer than thecae. Immature berry 10-pseudoloculed, greenish, with a slight bloom. Fl. Apr–May, fr. Aug–Sep.

- Rocks in forests, sometimes epiphytic on trees; 1300–2800 m. C and SE Sichuan.

**64. *Vaccinium sinicum*** Sleumer, Bot. Jahrb. Syst. 71: 440. 1941.

广西越桔 *guang xi yue ju*

Shrubs evergreen, sometimes epiphytic, 0.4–2 m tall, many branched. Twigs angled, densely spreading pubescent, glabrescent; bud scales inconspicuous. Leaves dense; petiole ca. 2 mm; leaf blade obovate or oblong-obovate, 0.9–2 × 0.8–1.1 cm, leathery, abaxially glabrous, adaxially puberulous on midvein, otherwise glabrous, secondary veins ca. 3 pairs, inconspicuous abaxially, ± curved adaxially, base cuneate, margin revolute, entire, with 1 basal gland per side, apex rounded, mucronate. Inflorescences racemose, 0.6–1.2 cm, with hairs or not, 3–7-flowered; bracts caducous, oblong, 6–7 mm. Pedicel 2–3 mm, glabrous. Hypanthium ca. 1 mm, glabrous; calyx lobes triangular, 1.5–2 mm, glabrous, apex obtuse. Corolla white, campanulate, ca. 5 mm, abaxially glabrous; lobes very short. Filaments ca. 1 mm, pilosulose or subglabrous; anthers ca. 2.8 mm, with 2 spreading spurs; tubules ca. 1.5 × as long as thecae. Berry 10-pseudoloculed, dark purple, subglobose, 3–6 mm in diam. Fl. Jun, fr. Jul–Nov.

- Forests, sometimes epiphytic on *Quercus*, rocks; 1200–1700 m. Fujian, Guangdong, Guangxi, Hunan.

**65. *Vaccinium brevipedicellatum*** C. Y. Wu ex W. P. Fang & Z. H. Pan, Acta Phytotax. Sin. 19: 107. 1981.

短梗乌饭 *duan geng wu fan*

Shrubs or small trees, evergreen, 1–3(–8) m tall, many branched. Twigs angled, densely pubescent, glabrescent. Leaves dense; petiole 1.5–2 mm, pubescent; leaf blade elliptic, 1.5–2(–3) × 0.8–1.2 cm, leathery, glabrous or adaxially pubescent on midvein, secondary veins 1 or 2 pairs, ascending, inconspicuous abaxially, slightly raised adaxially, base cuneate or broadly cuneate, margin revolute, entire, with 1 basal gland per side, apex obtuse-acuminate. Inflorescences racemose, ca. 2 cm, pubescent, 1- or 2(or 3)-flowered; bracts caducous. Pedicel ca. 1 mm, pubescent. Hypanthium glabrous; calyx lobes triangular-lanceolate, ca. 1.5 mm. Corolla pale green, campanulate, 3–4 mm; lobes reflexed. Filaments ca. 0.5 mm, pubescent; anthers ca. 2.3 mm, with 2 short spurs; tubules ca. 2 × as long as thecae. Berry 10-pseudoloculed, red to purple-black, 4–5 mm in diam. Fl. May, fr. Jun–Nov.

- Forests on calcareous mountains; 1000–1600 m. SE Yunnan.

**66. *Vaccinium craspedotum*** Sleumer, Bot. Jahrb. Syst. 71: 439. 1941.

长萼越桔 *chang e yue ju*

*Vaccinium craspedotum* var. *brevipes* C. Y. Wu.

Shrubs evergreen, usually epiphytic, 0.5–1.2 m tall. Twigs rounded, densely hispid, glabrescent, rough; bud scales inconspicuous. Leaves dense; petiole ca. 1 mm, indumentum same as stem; leaf blade ovate, 1.3–2.4 × 0.8–1.4 cm, leathery, subglabrous, secondary veins ca. 3 pairs, ascending, inconspicuous on both surfaces, fine veins inconspicuous, base rounded or broadly cuneate, margin plane, entire, with 1 basal gland per side, apex obtuse, emarginate. Inflorescences racemose, ca. 1 cm, with several ovate scales at base, 1–3-flowered; bracts ca. 3 mm. Pedicel 5–6 mm or flowers sessile, densely hispid. Hypanthium ?ca. 7 mm, densely hispid; calyx lobes lanceolate-subulate, 4–5 mm, pilose. Corolla white, campanulate, ca. 4 mm, sparsely puberulous or subglabrous; lobes erect. Filaments ca. 2 mm, pubescent; anthers ca. 2 mm with 2 distinct spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, globose, 5–6 mm in diam., with hairs. Fl. Apr–May, fr. Aug–Nov.

- Dense forests, usually epiphytic on trees, rocky hills; 1200–1900 m. SE Yunnan (Pingbian).

**67. *Vaccinium sciaphilum*** C. Y. Wu, Acta Bot. Yunnan. 9: 392. 1987.

林生越桔 *lin sheng yue ju*

Shrubs evergreen, usually epiphytic, 0.5–0.6 m tall. Roots with beadlike swellings. Twigs terete, densely pubescent, glabrescent; bud scales caducous. Leaves dense; petiole ca. 2 mm, pubescent; leaf blade obovate, elliptic, or broadly ovate, 1.3–2 × 0.6–1(–1.4) cm, leathery, abaxially sparsely brown glandular hispid, adaxially glabrous, secondary veins 2 or 3 pairs from basal half, fine veins inconspicuous, base cuneate to broadly cuneate, margin revolute, entire, with 1 basal gland per side, apex rounded, emarginate. Flowers solitary or sometimes 2 together;

bracts unknown. Pedicel ca. 3 mm, densely pubescent. Hypanthium densely hispid; calyx lobes triangular-ovate, ca. 2 mm, densely pubescent. Corolla greenish purple, broadly campanulate, ca. 5 mm, glabrous, lobed to middle; lobes reflexed at apex, oblong. Filaments ca. 1 mm, glabrous; anthers ca. 1.5 mm, with 2 subspreading spurs; tubules ca. as long as thecae. Berry 5–6 mm in diam., pubescent. Fl. May, fr. Sep–Nov.

• Evergreen forests, usually epiphytic on trees; 1700–2200 (–2800) m. SC and SE Yunnan.

**68. *Vaccinium papillatum*** P. F. Stevens, J. Arnold *Arbor.* 66: 479. 1985.

粉果越桔 *fen guo yue ju*

*Agapetes poilanei* Dop.

Shrubs evergreen, usually epiphytic, 1–2 m tall. Roots with swellings. Twigs terete, pubescent to glabrous; bud scales inconspicuous. Leaves dense; petiole ca. 2 mm; leaf blade elliptic, 1.5–2.6 × 0.9–1.2 cm, thickly leathery, glabrous, adaxially drying rugose, secondary veins 1 or 2 pairs near base, ascending, raised abaxially, impressed adaxially, base broadly cuneate, margin revolute, entire, with 2 basal glands per side, apex rounded or obtuse, emarginate. Inflorescences racemose, 1.5–2.5 cm, glabrous, 3–6-flowered; bracts ovate, ca. 2 mm. Pedicel 0.5–1 cm, slender, glabrous. Hypanthium 1–1.2 mm, pubescent; calyx lobes triangular, 1.5–2.1 mm. Corolla purplish red or pink, campanulate, 4.5–6 mm, glabrous; lobes reflexed, ca. 1.5 mm. Filaments 0.5–1 mm, pilose; anthers ca. 4 mm, with 2 short spurs; tubules ca. 1.5 × as long as thecae. Berry 10-pseudoloculed, ca. 5 mm in diam., with a bloom; fruit stalk ca. 1.3 cm, stout. Fl. Apr–May, fr. Sep–Nov.

Evergreen forests, forests or thickets on calcareous mountains, usually epiphytic on trees; (1000–)1400–2000 m. SE Yunnan [W Vietnam].

**69. *Vaccinium emarginatum*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 25(19): 149. 1908.

凹顶越桔 *ao ding yue ju*

*Agapetes emarginata* (Hayata) Nakai.

Shrubs evergreen, epiphytic. Twigs inconspicuously angled; bud scales inconspicuous. Leaves scattered; petiole 2–3 mm; leaf blade obovate-elliptic, 2.5–3(–5) × 0.9–2 cm, thickly leathery, abaxially brownish, adaxially usually glaucous, mid-vein prominent abaxially, raised adaxially, secondary veins ca. 2 pairs, barely evident, base cuneate, margin revolute, entire, with 1 basal gland per side, apex rounded-emarginate. Inflorescences racemose, 0.2–1(–1.5) cm, glabrous, 2–5-flowered; bracts ca. 1.5 mm. Pedicel angled-winged, 5–10 mm, pubescent. Hypanthium ca. 1 mm, glabrous or pubescent; calyx lobes lanceolate, 2–2.2 mm, ciliolate or pubescent. Corolla white, campanulate, 5–6 mm, glabrous; lobes reflexed, ca. 1.4 mm. Filaments ca. 1 mm, puberulous; anthers ca. 4 mm, with 2 spreading spurs; tubules ca. 2 × as long as thecae. Berry 10-pseudoloculed, ca. 5 mm in diam. Fl. Apr–May.

• Evergreen forests, epiphytic on trees; 1200–2000(–3500) m. Taiwan.

**70. *Vaccinium chengiae*** W. P. Fang, *Icon. Pl. Omei.* 1(1): t. 39. 1942 [*“chengae”*].

四川越桔 *si chuan yue ju*

Shrubs evergreen, sometimes epiphytic, 0.5–1.5 m tall. Twigs angled, pilose, glabrescent; bud scales inconspicuous. Leaves dense; petiole 1–2 mm, pilose to glabrescent; leaf blade elliptic or elliptic-oblong, 1.7–2.2 × 1–1.4 cm, leathery, glabrous, abaxially glaucous, adaxially drying rugose, secondary veins inconspicuous, base broadly cuneate to rounded, margin revolute, entire, with 1 basal gland per side, apex obtuse to rounded, retuse. Inflorescences racemose, to 5 mm, subglabrous, 2–4-flowered; bracts ca. 1 mm, ovate or ovate-triangular, sparsely ciliate. Pedicel 3–5 mm, subglabrous or villous. Hypanthium glabrous or villous; calyx lobes triangular-ovate, 1.5–2 mm, ciliate. Corolla white or yellowish white, with pinkish stripes, campanulate, 5–6 mm, glabrous. Filaments ca. 1 mm, sparsely pubescent; anthers ca. 2 mm, with 2 spreading spurs; tubules ca. 2 × as long as thecae. Berry purplish, ca. 6 mm in diam. Fl. May, fr. Nov.

• Thickets, rocky places on slopes, sometimes epiphytic on trees; 1000–1600 m. S and SC Sichuan.

- 1a. Pedicel and calyx subglabrous ..... 70a. var. *chengiae*
- 1b. Pedicel and calyx villous ..... 70b. var. *pilosum*

**70a. *Vaccinium chengiae* var. *chengiae***

四川越桔(原变种) *si chuan yue ju* (*yuan bian zhong*)

Pedicel and calyx subglabrous.

• Thickets; ca. 1200 m. SC Sichuan (Emei Shan).

**70b. *Vaccinium chengiae* var. *pilosum*** C. Y. Wu, *Acta Bot. Yunnan.* 9: 393. 1987.

毛萼四川越桔 *mao e si chuan yue ju*

Pedicel and calyx villous.

• Rocky places on slopes, sometimes epiphytic on trees; 1000–1600 m. S and SC Sichuan (Emei Shan, Hongya, Leibo).

**71. *Vaccinium saxicola*** Chun ex Sleumer, *Bot. Jahrb. Syst.* 71: 439. 1941.

石生越桔 *shi sheng yue ju*

Shrubs evergreen, 13–17 cm. Lower stem procumbent. Twigs terete, pubescent, glabrescent; bud scales inconspicuous. Leaves dense; petiole 1–2 mm, glabrous; leaf blade oblong-obovate, 1.9–2.4 × 1–1.3 cm, thickly leathery, glabrous, secondary veins slightly raised abaxially, fine veins impressed, base cuneate or broadly cuneate, margin revolute, entire, basal glands inconspicuous, apex rounded to obtuse, retuse. Inflorescences racemose, 4–5 mm, glabrous, 1- or 2-flowered; bracts ovate, 1–1.2 mm, glabrous, apex acute. Pedicel ca. 5 mm, subglabrous. Hypanthium sparsely pubescent; calyx limb divided to 1/2; calyx lobes triangular, ca. 2 mm. Corolla white, campanulate, 6–7 mm, glabrous, shortly 5-lobed. Filaments ca. 1.5 mm, puberulous; anthers ca. 6.5 mm, with 2 distinct spurs; tubules ca. 2 × as long as thecae. Immature berry 10-pseudoloculed; pedicel 8–9 mm. Fl. Mar–Apr, fr. May–Nov.

- Rocks. W Guangdong (Xinyi).

**72. *Vaccinium triflorum*** Rehder, J. Arnold Arbor. 15: 287. 1934.

三花越桔 san hua yue ju

*Pieris buxifolia* H. Léveillé & Vaniot, Bull. Soc. Bot. France 53: 203. 1906; *Vaccinium buxifolium* (H. Léveillé & Vaniot) H. Léveillé (1913), not Gilibert (1782), nor Salisbury (1805–1806), nor J. D. Hooker (1852).

Shrubs evergreen, 0.6–1 m tall. Twigs terete, pubescent, glabrescent; bud scales inconspicuous. Leaves dense; petiole 1–2 mm, pubescent; leaf blade elliptic, 1.4–2.3 × 0.7–1.4 cm, leathery, abaxially glabrous or pilose on midvein, adaxially glabrous, drying convex and rugose, secondary veins 1 pair, fine veins inconspicuous, base cuneate to broadly cuneate or sometimes rounded, margin revolute, entire, with 1 (or 2) small basal glands per side, apex rounded, often retuse. Inflorescences from older axils, racemose, 3–4 mm, pubescent, with persistent bud scales, (1- or) 2- or 3(–5)-flowered; bracts caducous, ca. 1.5 mm. Pedicel 6–9 mm, pilose. Hypanthium ca. 1 mm, pubescent or glabrous; calyx lobes triangular-lanceolate, 1.5–2 mm. Corolla dark red, campanulate, ca. 5 mm, 5-veined, puberulous on veins; lobes ca. 2 mm. Filaments 1–1.5 mm, pilose; anthers ca. 4.5 mm, with 2 short erect spurs; tubules ca. 2 × as long as thecae. Berry 10-pseudoloculed (from flower). Fl. Apr–Jun.

Forests on calcareous mountains; 1700–1800 m. S Guizhou, SE Yunnan [N Vietnam].

**73. *Vaccinium pseudotonkinense*** Sleumer, Bot. Jahrb. Syst. 71: 440. 1941.

腺萼越桔 xian e yue ju

Shrubs evergreen, sometimes epiphytic, 0.6–1 m tall. Twigs terete, pubescent, glabrescent; bud scales inconspicuous. Leaves dense; petiole 1–2 mm; leaf blade elliptic or obovate, 1.5–2 × 0.8–1.1 cm, leathery, both surfaces initially pubescent, adaxially drying rugose, secondary veins 2 or 3 pairs, inconspicuous, base cuneate, margin revolute, entire, basal glands 1 or 2, apex rounded. Inflorescences from older axils, racemose, ca. 3 mm, 1- or 2-flowered; bracts ovate, ca. 2 mm, ciliate. Pedicel ca. 4 mm, glabrous. Hypanthium glabrous, rarely pubescent; calyx lobes triangular-lanceolate, ca. 2 mm, glabrous or pubescent, ciliate and glandular at margin. Corolla greenish brown, 5–7 mm. Filaments 1–1.5 mm, pilose; anthers ca. 4.5 mm, with 2 erect spurs; tubules 1.5–2 × as long as thecae. Berry 10-pseudoloculed, yellowish green to pink, subglobose, ca. 7 mm in diam. Fl. Jul–Aug, fr. Nov.

Evergreen forests, sometimes epiphytic on trees; 1800–2200 m. E Yunnan [N Vietnam].

**74. *Vaccinium spiculatum*** C. Y. Wu & R. C. Fang, Acta Bot. Yunnan. 9: 393. 1987.

小尖叶越桔 xiao jian ye yue ju

Shrubs evergreen, epiphytic, much branched. Twigs angled, densely dark brown hirsute, glabrescent; bud scales caducous. Leaves dense; petiole 0.5–1 mm; leaf blade elliptic or

ovate-elliptic, 7–10 × 4–6 mm, papery or leathery, glabrous, secondary veins 1–3 pairs, from basal half, base broadly cuneate, margin slightly revolute, with 3–5 teeth at upper part of each side, apex acute, apiculate. Flowers solitary, axillary; bracts unknown. Pedicel ca. 0.5 mm. Flowers 4-merous. Hypanthium white pubescent; calyx lobes triangular-lanceolate, ca. 1 mm. Corolla white, tubular-urceolate, ca. 5.5 mm, densely pubescent; lobes minute. Stamens 4; filaments 1–1.5 mm, glabrous; anthers 2–2.5 mm, without spurs; tubules ca. 1/2 as long as thecae. Berry bluntly ellipsoid, 2–3 mm in diam. Fl. Nov–Jan of next year, fr. Feb.

• Evergreen forests, epiphytic on trees; 600–2000 m. SE Xizang (Médog).

**75. *Vaccinium sikkimense*** C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 451. 1882.

莢蒨叶越桔 jia mi ye yue ju

*Vaccinium oretrephes* W. W. Smith; *V. viburnoides* Rehder & E. H. Wilson.

Shrubs evergreen, 30–70 cm tall, many branched. Twigs angled, densely grayish brown pubescent, glabrescent, with scattered lenticels; bud scales inconspicuous. Leaves rather dense; petiole ca. 3 mm, pubescent; leaf blade oblong or obovate, 2–5 × 0.9–2.7 cm, leathery, adaxially densely pubescent on midvein, otherwise subglabrous on both surfaces, secondary veins 4 or 5 pairs, ascending, with fine veins inconspicuously raised abaxially, impressed adaxially, base cuneate or broadly cuneate, margin plane, with glandular teeth, apex rounded, mucronulate. Inflorescences axillary or terminal, racemose, 1–2 cm, pubescent, ca. 6-flowered; bracts caducous, ovate-orbicular, sometimes leaflike, 0.7–2 cm × 5–8 mm. Pedicel ca. 6 mm, glabrous. Hypanthium ca. 1.5 mm, glabrous; calyx limb divided to 1/2; calyx lobes broadly triangular or undulate, 0.3–0.6 mm. Corolla pinkish, with red limbs, urceolate, ca. 6 mm, glabrous; lobes recurved, ca. 0.8 mm. Filaments 1.3–2 mm, densely spreading pubescent; anthers ca. 2.3 mm, with 2 erect spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, dark blue, 5–9 mm in diam. Fl. Jul, fr. Aug–Nov.

• Mixed forests, forest margins, alpine thickets; 3000–3400 (–4300) m. W Sichuan, SE Xizang, W Yunnan.

**76. *Vaccinium vitis-idaea*** Linnaeus, Sp. Pl. 1: 351. 1753.

越桔 yue ju

*Vaccinium jesoense* Miquel.

Shrubs dwarf, evergreen, 10–30 cm tall, erect or prostrate basally, rhizomatous. Twigs terete, pubescent; bud scales inconspicuous. Leaves dense; petiole ca. 1 mm, puberulous; leaf blade elliptic or obovate, 0.7–2 cm × 4–8 mm, leathery, abaxially with appressed glandular hairs, adaxially glabrous or puberulous on midvein, secondary veins 5 or 6 pairs, fine veins inconspicuous on both surfaces, base broadly cuneate, margin revolute, undulate-crenate, apex rounded, mucronulate, or retuse. Inflorescences terminal, racemose, 1–1.5 cm, puberulous, 2–8-flowered; bracts caducous, broadly ovate, ca. 3 mm. Pedicel ca. 1 mm, puberulous; bracteoles ± median. Flowers 4-

merous. Hypanthium glabrous; calyx lobes broadly triangular, ca. 1 mm. Corolla white or pink, campanulate, ca. 5 mm; lobes erect, triangular-ovate, 2–2.5 mm. Filaments ca. 0.5 mm, puberulous; anthers ca. 1.5 mm, without spurs; tubules ca. as long as thecae. Berry 4-loculed, purplish red, 5–10 mm in diam., acidic or slightly bitter. Fl. Jun–Jul, fr. Aug–Sep.  $2n = 24^*$ .

*Betula* and *Larix* forest, meadows, alpine grasslands; 900–3200 m. Heilongjiang, Jilin, Nei Mongol, Shanxi, Xinjiang [Japan, Korea, Mongolia, Russia; Europe, North America].

The berries are nutritious, and are especially tasty after overwintering.

**77. *Vaccinium delavayi*** Franchet, J. Bot. (Morot) 9: 367. 1895.

苍山越桔 *cang shan yue ju*

Shrubs evergreen, terrestrial or epiphytic, prostrate, or 0.5–1 m tall, many branched; rootstock swollen. Twigs angled, grayish brown pubescent and brown glandular setose; bud scales inconspicuous. Leaves dense; leaf blade obovate, 0.7–1.5 cm × 4–9 mm, leathery, glabrous, secondary veins ca. 3 pairs, inconspicuous abaxially, impressed adaxially, base cuneate, margin plane, cartilaginous, with 1 basal gland per side, sparsely denticulate or subentire, usually sparsely deciduously glandular ciliate, apex rounded, retuse. Inflorescences pseudoterminal, racemose, 1–3 cm, pubescent and glandular setose, 4–8-flowered; bracts caducous, ovate, 5–6 mm. Pedicel 2–4 mm, pubescent and glandular setose. Hypanthium ca. 1 mm, glabrous; calyx limb divided to 1/2; calyx lobes broadly triangular, ca. 0.8 mm, ciliate. Corolla white or pinkish, urceolate, 3–5 mm, glabrous; lobes erect, ca. 0.7 mm. Filaments ca. 1 mm, subglabrous or retrorse-pilose; anthers ca. 2.3 mm, thecae with 2 spreading spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, dark purple, 4–8 mm in diam. Fl. Mar–May.

Forests, *Tsuga-Rhododendron* forests, sometimes epiphytic on trees, alpine *Rhododendron* thickets, ridges, dry slopes, rocks; 2000–3700(–3800) m. SW Sichuan, Taiwan, SE Xizang, Yunnan [Myanmar].

- 1a. Filaments subglabrous ..... 77a. subsp. *delavayi*
- 1b. Filaments retrorse-pilose ..... 77b. subsp. *merrillianum*

**77a. *Vaccinium delavayi* subsp. *delavayi***

苍山越桔(原亚种) *cang shan yue ju* (*yuan ya zhong*)

Filaments subglabrous.

Forests, *Tsuga-Rhododendron* forests, sometimes epiphytic on trees, alpine *Rhododendron* thickets, dry slopes, rocks; 2400–3200 (–3800) m. SW Sichuan, SE Xizang, Yunnan [Myanmar].

**77b. *Vaccinium delavayi* subsp. *merrillianum*** (Hayata) R. C. Fang, Acta Bot. Yunnan. 9: 394. 1987.

台湾越桔 *tai wan yue ju*

*Vaccinium merrillianum* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 25(19): 149. 1908; *Agapetes merrilliana* (Hayata) Nakai; *Vaccinium vitis-idaea* Linnaeus var. *merrillianum* (Hayata) S. S. Ying.

Filaments retrorse-pilose.

• Forests, sometimes epiphytic on trees in high mountains, ridges, sometimes prostrate on rocks; 2000–3700 m. Taiwan.

**78. *Vaccinium nummularia*** J. D. Hooker & Thomson ex C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 451. 1882.

抱石越桔 *bao shi yue ju*

*Vaccinium nummularia* var. *oblongifolium* C. Y. Wu & R. C. Fang.

Shrubs evergreen, sometimes epiphytic, 0.5–0.7 m tall, much and diffusely branched. Twigs rounded, pubescent and densely brownish glandular setulose, glabrescent, scabrous; bud scales inconspicuous. Leaves dense; petiole ca. 1 mm, pubescent; leaf blade ovate, ovate-orbicular, or oblong, 1–2.3 × 0.7–1.2 cm, leathery or thinly so, adaxially puberulous on midvein, otherwise glabrous on both surfaces, secondary veins 3 or 4 pairs, veins and fine veins inconspicuous and raised abaxially, impressed adaxially, base rounded, margin revolute, cartilaginous, with 1 or 2 basal glands per side, sparsely denticulate. Inflorescences pseudoterminal, racemose, densely pubescent, 0.6–1.5 cm; bracts caducous, broadly ovate, ca. 4 mm. Pedicel 6–7 mm, glabrous. Hypanthium ca. 0.7 mm, glabrous; calyx lobes broadly triangular or undulate, ca. 0.8 mm, ciliate. Corolla white, pinkish above, urceolate, 5–6 mm; lobes erect or reflexed, 0.5–0.8 mm. Filaments 1.5–2 mm, densely pilose; anthers ca. 2.5 mm, thecae with 2 spreading spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, dark purple. Fl. May, fr. Jul–Aug.

Rocky places in montane forests, sometimes epiphytic, thickets on mountain slopes; 2000–3500 m. SE Xizang, NW Yunnan (Gongshan) [Bhutan, NE India, Myanmar, Nepal, Sikkim].

**79. *Vaccinium chaetothrix*** Sleumer, Bot. Jahrb. Syst. 71: 432. 1941.

团叶越桔 *tuan ye yue ju*

Shrubs evergreen, epiphytic, many diffuse or pendulous branched. Twigs rounded, pubescent and brownish glandular setulose, glabrescent; bud scales inconspicuous. Leaves dense; petiole ca. 1 mm; leaf blade ovate to suborbicular, 4–8 × 3–7 mm, leathery, glabrous, abaxially brown or pale brown, adaxially drying grayish green and rugose, secondary veins 2 or 3 pairs, barely conspicuous, raised abaxially, impressed adaxially, fine veins inconspicuous, base rounded, margin revolute, cartilaginous, sparsely denticulate, apex rounded. Inflorescences pseudoterminal, racemose, setose below, 6–8-flowered; bracts caducous, to 3 mm. Pedicel 6–8 mm, pubescent or glabrous. Hypanthium glabrous; calyx lobes broadly triangular, slightly ciliate. Corolla white, tubular-urceolate, ca. 6.5 mm, glabrous; lobes ca. 0.8 mm. Filaments ca. 1.5 mm, hairy; anthers ca. 3 mm, thecae with 2 spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, dark purple, 6–8 mm in diam. Fl. Jun, fr. Jul–Oct.

Broad-leaved forests, *Abies* or *Tsuga* forests, epiphytic on trees; 2500–3200 m. SE Xizang (Mêdog), NW Yunnan (Gongshan) [NE India (Assam), Myanmar].

**80. *Vaccinium moupinense*** Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 10: 43. 1888.

宝兴越桔 *bao xing yue ju*

*Vaccinium sikangense* Y. C. Yang.

Shrubs evergreen, epiphytic, 0.5–1.2 m tall, many branched. Twigs rounded, densely grayish pubescent, glabrescent; bud scales inconspicuous. Leaves dense; petiole 1–2 mm, pubescent; leaf blade elliptic, obovate-elliptic, or obovate-oblong, 0.7–1.7 cm × 4–8 mm, leathery, abaxially glabrous, adaxially drying rugose, sparsely pubescent or only puberulous on midvein, secondary veins ca. 3 pairs, ± ascending, secondary and fine veins conspicuous abaxially only, base cuneate, margin revolute, with inconspicuous obtuse teeth in upper part, apex obtuse to rounded. Inflorescences often pseudoterminal, racemose, 1.5–3 cm, glabrous, 6–15-flowered; bracts caducous, broadly ovate, 5–6 mm. Pedicel 3–4 mm, glabrous. Hypanthium ca. 1.5 mm, glabrous; calyx limb divided to 2/3; calyx lobes broadly triangular, ca. 1 mm. Corolla light purple to rose-pink, urceolate, ca. 4 mm, glabrous; lobes erect or reflexed, ca. 0.8 mm. Filaments ca. 1 mm, hairy; anthers ca. 3 mm, thecae with 2 spreading spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, black or black-purple, ca. 6 mm in diam. Fl. May–Jun, fr. Jul–Oct.

• Epiphytic on *Quercus* or *Tsuga*; (900–)1800–2400 m. Guizhou, WC Sichuan (Baoting), NE Yunnan.

**81. *Vaccinium haitangense*** Sleumer, Bot. Jahrb. Syst. 71: 434. 1941.

海棠越桔 hai tang yue ju

Shrubs dwarf, evergreen. Twigs terete, pubescent or subglabrous; bud scales inconspicuous. Petiole 1–2 mm; leaf blade oblong-elliptic, 2.2–2.6 × 1–1.2 cm, leathery, glabrous, secondary veins 3 pairs, ascending, slightly raised abaxially, impressed adaxially, base broadly cuneate, margin entire, apex gradually attenuate. Inflorescences at branch apices, racemose, 2–3 cm, glabrous, few flowered; bracts caducous, oblong, ciliate. Pedicel ca. 4 mm, glabrous. Hypanthium glabrous; calyx lobes triangular. Corolla pinkish, urceolate, 4–5 mm, glabrous. Filaments 1–1.5 mm, pilose; anthers ca. 3.5 mm, with 2 spurs; tubules slightly longer than thecae. Berry unknown.

• SC Sichuan (Ganluo).

The above description follows that in the protologue.

**82. *Vaccinium dendrocharis*** Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 62: 132. 1925.

树生越桔 shu sheng yue ju

Shrubs evergreen, usually epiphytic, 0.3–1(–2.6) m tall, many branched. Twigs angled, densely grayish brown pubescent, glabrescent. Leaves dense; petiole 1–2 mm, pubescent; leaf blade obovate or spatulate, 1–2.2 cm × 4–9 mm, leathery, glabrous or pubescent, secondary veins 2–4 pairs, ascending, raised abaxially, slightly impressed adaxially, or inconspicuous, base cuneate, margin cartilaginous, slightly revolute, entire, with 1 basal gland per side, apex rounded, retuse. Inflorescences terminal, racemose, pubescent or subglabrous, 1–3 cm; bracts caducous or persistent, obovate-elliptic, 6–9 mm, to 1.1–1.6 cm and leaflike at fruiting. Pedicel ca. 3 mm, glabrous; bracteoles lanceolate, 4–5 mm, caducous or persistent and enlarged in fruit. Hypanthium 0.8–1 mm, glabrous; calyx lobes broadly triangular, 0.5–1 mm, densely ciliate or glabrous. Co-

rolla white or pinkish, urceolate, ca. 4.5 mm, glabrous; lobes erect, ca. 0.5 mm. Filaments ca. 1 mm; anthers ca. 2.5 mm, with 2 erect spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, dark purple, 5–8 mm in diam. Fl. May–Jul, fr. Jul–Oct.

Evergreen forests, *Abies* or *Tsuga* forests, mossy *Rhododendron* forests, usually epiphytic on trees, rocks; 2300–3500(–3800) m. SE Xizang, W Yunnan [Myanmar].

**83. *Vaccinium retusum*** (Griffith) J. D. Hooker ex C. B. Clarke in J. D. Hooker, Fl. Brit. India 3: 451. 1882.

西藏越桔 xi zang yue ju

*Thibaudia retusa* Griffith, Not. Pl. Asiat. 4: 300. 1854.

Shrubs dwarf, evergreen, often epiphytic, ca. 30 cm tall. Twigs diffuse, angled, densely pubescent when young, glabrescent. Leaves dense; petiole 2–3 mm, pubescent; leaf blade elliptic or obovate, 2–2.5 × 0.9–1.4 cm, leathery, adaxially puberulous on midvein, otherwise glabrous on both surfaces, secondary veins 2 or 3 pairs, ascending, slightly raised abaxially, inconspicuous adaxially, base cuneate, margin cartilaginous, revolute, entire, with 1 basal gland per side, apex rounded, retuse. Inflorescences pseudoterminal, racemose, 3–5 cm, ca. 12-flowered; rachis densely pubescent to glabrous; bracts ovate-orbicular, ca. 1.1 cm. Pedicel ca. 3 mm, glabrous. Hypanthium ca. 1.3 mm, glabrous; calyx lobes 0.8–1 mm, with marginal hairs. Corolla white, with 5 red stripes abaxially, urceolate, ca. 0.5 mm; lobes small. Stamens shorter than corolla, pilose; filaments ca. 0.5 mm; anthers ca. 3 mm, with 2 erect spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, black-purple, ca. 5 mm in diam. Fr. Jun.

Epiphytic or on rocks; ca. 2500 m. S Xizang, Yunnan [Bhutan, NE India, Myanmar, Nepal, Sikkim].

The above description of the flower follows that in the protologue and that by Clarke in Fl. Brit. India.

**84. *Vaccinium henryi*** Hemsley, J. Linn. Soc., Bot. 26: 15. 1889.

无梗越桔 wu geng yue ju

Shrubs deciduous, (0.5–)1–3 m tall, much branched. Twigs rounded, densely pubescent when young, lenticellate; bud scales inconspicuous. Leaves scattered; petiole 1–2 mm, densely pubescent; leaf blade ovate, ovate-oblong, or oblong, (1.5–)3–8 × (0.7–)1.5–4 cm, papery, both surfaces densely pubescent on midvein and secondary veins, secondary veins 4–6 pairs, slightly raised abaxially, flat adaxially, base cuneate or broadly cuneate to rounded, margin plane, entire, ciliate, apex acute or abruptly acuminate, mucronulate. Inflorescences terminal on short vegetative shoots, racemose; bracts persistent, leaflike, ca. 2 mm. Pedicel to 3 mm, densely pubescent or glabrous; bracteoles broadly triangular, less than 1 mm at anthesis, enlarged to 2–3 mm and 1-veined at fruiting, sometimes caducous. Hypanthium 0.5–1 mm, glabrous; calyx lobes broadly triangular, 0.5–1 mm, abaxially pubescent or glabrous. Corolla yellowish green, campanulate, 3–4.5 mm, glabrous; lobes reflexed, triangular, ca. 0.5 mm. Stamens 3–3.5 mm; filaments ca. 1.5 mm, pilose; anthers 1.5–2 mm, without spurs; tubules ca. as long as thecae. Berry 10-pseudoloculed, dark purple, 7–9 mm in diam. Fl. Jun–Jul, fr. Sep–Oct.

• Forests, thickets on mountain slopes; 700–2100 m. Anhui, Fujian, Gansu, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Zhejiang.

- 1a. Twigs densely pubescent; both surfaces of leaf blade densely pubescent on midvein and secondary veins; pedicel to 1 mm; calyx lobes usually with hairs ..... 84a. var. *henryi*
- 1b. Twigs densely or sparsely pubescent; both surfaces of leaf blade sparsely pubescent on veins or subglabrous; pedicel 1–3 mm; calyx lobes glabrous ..... 84b. var. *chingii*

**84a. *Vaccinium henryi* var. *henryi***

无梗越桔(原变种) *wu geng yue ju* (*yuan bian zhong*)

Twigs densely pubescent. Leaf blade with both surfaces densely pubescent on veins. Pedicel to 1 mm. Calyx lobes usually with hairs.

• Thickets on mountain slopes; 700–2100 m. Anhui, Fujian, Gansu, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Zhejiang.

**84b. *Vaccinium henryi* var. *chingii*** (Sleumer) C. Y. Wu & R. C. Fang, *Acta Bot. Yunnan.* 9: 395. 1987.

有梗越桔 *you geng yue ju*

*Vaccinium chingii* Sleumer, *Bot. Jahrb. Syst.* 71: 482. 1941.

Twigs densely or sparsely pubescent. Leaf blade with both surfaces sparsely pubescent on veins. Pedicel 1–3 mm. Calyx lobes glabrous.

• Forests; 1500–1600 m. Anhui, Fujian, Jiangxi, Zhejiang.

**85. *Vaccinium oldhamii*** Miquel, *Ann. Mus. Bot. Lugduno-Batavi* 2: 161. 1866 [*“oldhami”*].

腺齿越桔 *xian chi yue ju*

Shrubs deciduous, 1–3 m tall. Twigs terete, angled, densely pubescent and with scattered glandular hairs, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 1–3 mm, pubescent, with intermixed glandular hairs; leaf blade ovate, elliptic, or oblong, 2.5–8 × 1.2–4.5 cm, papery, abaxially setose or glandular setose on veins, otherwise appressed-setose or glabrous, adaxially pubescent on veins, otherwise appressed-setose or glabrous, secondary veins (5–)7 or 8 pairs, secondary and fine veins raised abaxially, slightly raised or flat adaxially, base cuneate, broadly cuneate, or rounded, margin plane, denticulate, glandular setulose at tips of teeth, apex acute. Inflorescences terminal, racemose, 3–6 cm, pubescent, with intermixed glandular hairs, (1–)9–17-flowered; bracts ovate-lanceolate to linear, 2.5–7 mm. Pedicel ca. 1.5 mm, glandular pubescent. Hypanthium glandular pubescent; calyx lobes triangular, ca. 1.5 mm, ciliate. Corolla pinkish, campanulate, 3–5 mm, glabrous; lobes ca. 0.5 mm. Filaments ca. 1.5 mm, pilose in upper part; anthers ca. 1.7 mm, thecae without spurs; tubules ca. 1/2 as long as thecae. Berry 10-pseudoloculed, dark purple, subglobose, 0.7–1 cm in diam. Fl. May–Jun, fr. Jul–Oct.

Thickets on mountain slopes; 200–700(–1300) m. N Jiangsu, Shandong [Japan, Korea].

**86. *Vaccinium koreanum*** Nakai, *Trees Shrubs Japan* 1: 191. 1922.

红果越桔 *hong guo yue ju*

Shrubs deciduous. Twigs angled, pubescent, glabrescent; bud scales inconspicuous. Leaves scattered; petiole 1–2 mm, pilose; leaf blade elliptic or ovate, 3–6.5 × 1.3–3 cm, papery, both surfaces white pilose, secondary veins ± ascending, raised abaxially, flat adaxially, base cuneate or broadly cuneate to slightly obtuse, margin plane, denticulate, apex acute or acuminate. Inflorescence pseudoterminal, shortly racemose, axis to 6 mm, ?glabrous, 1–3(–5)-flowered; bracts caducous. Pedicel 4–6 mm, glabrous. Hypanthium ca. 0.8 mm, glabrous; calyx limb ca. 1 mm, divided 1/2–3/4; calyx lobes triangular. Corolla whitish, campanulate, 7–8 mm, glabrous; lobes recurved, broadly ovate, 1–1.5 mm. Filaments ca. 2.5 mm, puberulous; anthers 2.5–3.5 mm, thecae with 2 very short spurs, tubules ca. as long as thecae. Berry 5-loculed, red, ellipsoid, 8–9 × 6–7 mm, 5-angled, glabrous; persistent calyx lobes triangular or suborbicular, 2–3 mm, glabrous. Fl. May, fr. Sep.

Rocky places on mountain summits; 600–1000 m. E Liaoning (Kuandian) [Korea].

The above description of the flower is based on herbarium specimens.

**87. *Vaccinium uliginosum*** Linnaeus, *Sp. Pl.* 1: 350. 1753.

笃斯越桔 *du si yue ju*

*Vaccinium uliginosum* var. *album* J. Y. Ma & Yue Zhang.

Shrubs deciduous, 0.5–1 m tall, alpine populations usually 10–15 cm tall, much branched, rhizomatous. Twigs terete, puberulous to glabrous. Leaves scattered; petiole ca. 2 mm, puberulous; leaf blade obovate or elliptic to oblong, 1–3 × 0.6–1.5 cm, papery, abaxially glaucous, puberulous, adaxially subglabrous, secondary veins 3–5 pairs, fine veins evident especially abaxially, base cuneate or broadly cuneate, margin plane, entire, with 1 basal gland per side, apex rounded, sometimes retuse. Inflorescences fasciculate, at end of shoot, 1–3-flowered; bracts caducous, 1.5–2.5 mm. Pedicel ca. 5 mm, glabrous. Flowers 4- or 5-merous. Hypanthium ca. 0.8 mm, glabrous; calyx lobes 4 or 5, triangular-ovate, ca. 1 mm. Corolla greenish white, broadly urceolate, ca. 5 mm, glabrous; lobes triangular, ca. 1 mm. Filaments ca. 1 mm, glabrous; anthers ca. 1.5 mm, thecae with 2 spurs, tubules slightly shorter than thecae. Berry 4- or 5-loculed, bluish purple, subglobose or ellipsoidal, with a bloom, ca. 1 cm in diam. Fl. Jun, fr. Jul–Aug.  $2n = 24, 48$ .

*Larix* forests, forest margins, meadow-moors, alpine steppes; 900–2300 m. N Heilongjiang (Da Hinggan Ling), S Jilin (Changbai Shan), NE Nei Mongol (Da Hinggan Ling) [Japan, Korea, Mongolia, Russia; Europe, North America].

The berry is nutritious and has a sweetish taste.

**88. *Vaccinium modestum*** W. W. Smith, *Notes Roy. Bot. Gard. Edinburgh* 8: 210. 1914.

大苞越桔 *da bao yue ju*

Shrubs deciduous, dwarf, 5–10 cm tall, erect or procumbent at base, rhizomatous, glabrous. Twigs terete; bud scales inconspicuous. Leaves scattered; petiole to 2 mm; leaf blade ovate, obovate, elliptic, or ovate-orbicular, 1.3–4 cm × 4–9 mm,

secondary veins 2–5 pairs, ascending, secondary and fine veins raised on both surfaces, base cuneate or acute to subrounded, margin plane, entire, apex rounded, sometimes cuneate, mucronate. Flowers solitary, axillary, 1–3 on current shoot. Pedicel 2–4 cm; bracteoles subapical, leaflike, 3–4.5 mm. Hypanthium purplish red, ca. 2 mm, glabrous; calyx lobes broadly triangular or suborbicular, 1–1.5 mm. Corolla pinkish or brownish red, globose-campanulate, 4–6 mm; lobes ovate, ca. 1 mm. Filaments ca. 1.5 mm, glabrous; anthers 3–3.5 mm, thecae with 2 erect spurs; tubules ca. as long as thecae. Berry 5-loculed, dark purple, with a bloom, ca. 1 cm in diam. Fl. Jun–Sep, fr. Aug–Sep.

*Abies* forests, thickets, alpine meadows, cliffs; (2500–)3100–4000(–4300) m. SE Xizang, NW Yunnan [NE India (Assam), Myanmar].

**89. *Vaccinium myrtillus* Linnaeus, Sp. Pl. 1: 349. 1753.**

黑果越桔 *hei guo yue ju*

Shrubs deciduous, dwarf, 15–30(–60) cm tall, much branched, rhizomatous. Twigs acutely angled; bud scales inconspicuous. Leaves scattered; petiole ca. 1 mm; leaf blade ovate or elliptic, 1–3 × 0.6–1.6 cm, papery, secondary veins 6 or 7 pairs, fine veins raised abaxially, inconspicuous adaxially, base broadly cuneate to rounded, margin plane, serrulate, apex acute to obtuse. Flowers solitary, axillary, pendulous, 1–3 at base of shoot. Pedicel 2.5–3.5 mm; bracteoles absent. Flowers 4- or 5-merous. Hypanthium ca. 4 mm, scarcely lobed. Corolla pale green, tinged with pink, globose-urceolate, 4–6 mm; lobes reflexed. Filaments ca. 1.5 mm, glabrous; anthers 2.2–2.5 mm, thecae with 2 subulate spurs, tubules shorter than thecae. Berry 4- or 5-loculed, bluish black, with a bloom, 6–10 mm in diam. Fl. Jun, fr. Sep.  $2n = 24$ .

*Larix*, *Picea*, *Pinus*, or mixed forests, on acidic and wet soils; 2200–2500 m. Xinjiang [Mongolia, Russia; Europe].

The berries are edible.

**90. *Vaccinium oxycoccus* Linnaeus, Sp. Pl. 1: 351. 1753.**

红莓苔子 *hong mei tai zi*

*Oxycoccus palustris* Persoon; *O. quadripetalus* Gilibert; *O. vulgaris* Hill.

Shrubs evergreen, 10–15 cm tall, sparsely branched, ± procumbent; rhizomes to 80 cm. Twigs terete, slender, puberulous, glabrescent; bud scales inconspicuous. Leaves quite dense; petiole ca. 1 mm; leaf blade dark green adaxially, oblong or ovate, 5–11 × 2–5 mm, leathery, glabrous, abaxially glaucous, secondary veins inconspicuous on both surfaces, base rounded, margin strongly revolute, entire, without basal glands, apex acute to apiculate. Inflorescences terminal umbellate racemes, axis to 7 mm, flowers sometimes axillary at base of innovation, (1- or)2–4-flowered; bracts persistent, ovate, ca. 2 mm, glabrous. Pedicel recurved at apex, filiform, 1–2(–3) cm, pubescent; bracteoles at middle. Flowers 4-merous. Hypanthium glabrous; calyx lobes suborbicular, ca. 0.5 mm. Corolla pinkish, glabrous, lobed nearly to base; lobes reflexed, oblong, 4–6 mm. Filaments ca. 1.5 mm, ciliolate; anthers ca. 3 mm, thecae without spurs; tubules

shorter than thecae. Berry 4-loculed, red, ca. 1 cm in diam. Fl. Jun–Jul, fr. Jul–Aug.  $2n = 48$ , (46, 52, 68, 70), 72.

Moors, marshy places; 500–900 m. Heilongjiang, S Jilin (Changbai Shan) [Japan, SE Russia; Europe, North America].

**91. *Vaccinium microcarpum* (Turczaninow ex Ruprecht) Schmalhausen, Trudy Imp. S.-Peterburgsk. Obsch. Estestvoisp. 2: 149. 1871.**

小果红莓苔子 *xiao guo hong mei tai zi*

*Oxycoccus microcarpus* Turczaninow ex Ruprecht, Beitr. Pfl.-K. Russ. Reiches 4: 56. 1845; *O. palustris* Persoon var. *pusillus* Dunal; *O. pusillus* (Dunal) Nakai.

Shrubs low, evergreen, 5–10 cm tall, ± procumbent, rhizomatous. Twigs terete, slender, puberulous, glabrescent; bud scales inconspicuous. Leaves quite dense; petiole less than 1 mm, puberulous; leaf blade ovate or elliptic, broader near base, 2–6 × 1–2(–3) mm, leathery, glabrous, secondary veins inconspicuous on both surfaces, base rounded, margin revolute, entire, without basal glands, apex acute. Flowers 1 or 2, terminal; bracts persistent, ovate, ca. 1 mm, glabrous. Pedicel recurved at apex, filiform, 1.5–2.5 cm, glabrous; bracteoles at middle. Flowers 4-merous. Hypanthium glabrous; calyx lobes suborbicular, ca. 0.5 mm. Corolla pinkish, glabrous, lobed nearly to base; lobes reflexed, oblong, ca. 5 mm. Filaments ca. 2 mm, glabrous; anthers ca. 2 mm; thecae without spurs, tubules ca. as long as thecae. Berry 4-loculed, red, ca. 6 mm in diam. Fl. Jun–Jul, fr. Jul–Aug.  $2n = 24$ .

*Larix* forests, moors, marshy places; ca. 900 m. N Heilongjiang (Da Hinggan Ling), S Jilin (Changbai Shan), NE Nei Mongol (Da Hinggan Ling) [Japan, Korea, Mongolia, E Russia; Europe, North America].

**92. *Vaccinium japonicum* Miquel, Ann. Mus. Bot. Lugduno-Batavi 1: 28. 1863.**

日本扁枝越桔 *ri ben bian zhi yue ju*

Shrubs deciduous, 0.4–2 m tall, many branched. Twigs flattened-angular, glabrous; bud scales inconspicuous. Leaves scattered; petiole 1–2 mm, glabrous or abaxially pubescent; leaf blade sometimes reddish when young, ovate or ovate-lanceolate, (1.5–)2–6 × 0.7–2 cm, papery, abaxially subglabrous or pubescent towards base of midvein, adaxially glabrous or rarely pubescent, secondary veins 2–4 pairs, ± ascending, raised abaxially, inconspicuous and impressed adaxially, fine veins raised abaxially, impressed adaxially, base broadly cuneate to subtruncate, margin plane, setose-serrulate, apex acute or acuminate for ca. 0.5 cm. Flowers solitary, axillary, pendulous, at base of young shoot. Pedicel 5–8 mm, slender, glabrous. Flowers 4-merous. Hypanthium glabrous; calyx limb divided nearly to base; calyx lobes triangular, 1–1.8 mm, apex abruptly acuminate. Corolla white or pinkish, glabrous, lobed nearly to base; lobes linear-lanceolate, 0.8–1 cm, margin revolute. Filaments 1–2 mm, often densely villous; anthers 6–7 mm, thecae without spurs; tubules ca. as long as thecae. Berry 4-loculed, red, ca. 5 mm in diam. Fl. Jun–Jul, fr. Aug–Oct.

Forests, thickets, alpine areas; 1000–2600(–3000) m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan].

Two varieties occur in China; var. *japonicum* is endemic to Japan.

- 1a. Leaf blade ovate or ovate-lanceolate, (1.5–)2–6 × 0.7–2 cm, abaxially subglabrous or pubescent towards base of midvein, base broadly cuneate to subtruncate ..... 92a. var. *sinicum*  
1b. Leaf blade lanceolate or ovate-lanceolate, 1.2–4.2 × 0.5–1.5 cm, abaxially glabrous, base obtuse to cuneate ..... 92b. var. *lasiostemon*

**92a. *Vaccinium japonicum* var. *sinicum*** (Nakai) Rehder, J. Arnold Arbor. 5: 56. 1924.

扁枝越桔 *bian zhi yue ju*

*Oxycoccoides japonicus* (Miquel) Nakai var. *sinicus* Nakai, Trees Shrubs Japan 1: 168. 1922; *Agapetes vaccinioidea* H. Léveillé (Apr–May 1903), not *A. vaccinioides* Dunn (31 Oct 1903); *Hugeria japonica* (Miquel) Nakai var. *sinica* (Nakai) Handel-Mazzetti; *H. sinica* (Nakai) Maekawa; *H. vaccinioidea* (H. Léveillé) H. Hara; *Vaccinium siccum* H. Léveillé & Vaniot.

Leaf blade ovate or ovate-lanceolate, (1.5–)2–6 × 0.7–2 cm, abaxially subglabrous or pubescent towards base of midvein, base broadly cuneate to subtruncate.

• Forests, thickets; 1000–1600(–1900) m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang.

**92b. *Vaccinium japonicum* var. *lasiostemon*** Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 499. 1911.

台湾扁枝越桔 *tai wan bian zhi yue ju*

*Hugeria japonica* var. *lasiostemon* (Hayata) Sasaki; *H. lasiostemon* (Hayata) Maekawa; *H. randaiensis* Masamune; *H. vaccinioidea* var. *lasiostemon* (Hayata) H. Hara; *Oxycoccus japonicus* (Miquel) Makino var. *lasiostemon* (Hayata) Makino & Nemoto.

Leaf blade lanceolate or ovate-lanceolate, 1.2–4.2 × 0.5–1.5 cm, abaxially glabrous, base obtuse to cuneate.

• Alpine areas; 2300–2600(–3000) m. Taiwan.

