

29. RIBES Linnaeus, Sp. Pl. 1: 200. 1753.

茶沸子属 cha biao zi shu

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Grossularia Miller; *Ribesium* Medikus.

Shrubs, rarely small trees, deciduous, rarely evergreen or semievergreen, sometimes epiphytic. Branchlets spiny, prickly, or unarmed; spines sometimes verticillate below nodes. Buds with several scarious, papery, or herbaceous scales. Leaves alternate, rarely fascicled, petiolate, exstipulate; leaf blade palmately lobed or rarely entire, folded or rarely convolute in bud. Inflorescences many- or few-flowered racemes, rarely corymbs or subsessile umbels, sometimes flowers clustered or solitary. Bracts ovate to lanceolate, rarely ligulate or linear. Flowers bisexual, or unisexual and shrubs dioecious. Calyx tube rotate to cylindrical or tubular, basally adnate to ovary; lobes (4 or)5, erect or reflexed at anthesis, petaloid, sometimes changing in fruit. Petals (4 or)5, concolorous, alternate with and often smaller than calyx lobes, sometimes absent. Stamens (4 or)5, alternate with petals and inserted on rim of calyx tube or slightly lower, often vestigial or with undeveloped pollen in female flowers. Ovary inferior, rarely semi-inferior, shortly stalked, 1-loculed, vestigial or absent in male flowers; ovules many. Style 2-lobed or divided for almost 1/2 its length, rarely entire. Fruit a juicy berry, with persistent calyx apically. Seeds many, albuminous; testa and endosperm gelatinous; embryo cylindrical, minute.

About 160 species: mainly in cold and temperate regions of the N hemisphere, abundant in E Asia; 59 species (25 endemic, five introduced) in China.

Key 1

1a. Flowers bisexual.

2a. Branchlets with spines, prickles, or both.

3a. Flowers 4–20 in racemes more than 2 cm 1. *R. horridum*

3b. Flowers solitary, 2 or 3 in clusters, or in racemes less than 2 cm.

4a. Style and calyx tube adaxially villous 2. *R. reclinatum*

4b. Style and calyx tube adaxially glabrous.

5a. Fruit oblong, 2–2.5 cm 3. *R. stenocarpum*

5b. Fruit globose, rarely ellipsoid, 0.8–1.5 cm.

6a. Spines at nodes slender, basally less than 1 mm in diam.

7a. Leaf blade glabrous except at vein axils; style divided for ca. 1/2 its length 4. *R. aciculare*

7b. Leaf blade pubescent, some hairs glandular; style entire or only stigma 2-lobed 5. *R. fuyunense*

6b. Spines at nodes robust, basally more than 1 mm in diam.

8a. Calyx tube cylindrical, 7–10 mm 6. *R. formosanum*

8b. Calyx tube campanulate, to 6 mm.

9a. Style 2-lobed at apex; anthers not exerted 7. *R. burejense*

9b. Style divided for ca. 1/2 its length; anthers exerted 8. *R. alpestre*

2b. Branchlets with neither spines nor prickles.

10a. Flowers solitary or 2 per fascicle 9. *R. ambiguum*

10b. Flowers in racemes.

11a. Shrubs low, creeping, or procumbent, to 40 cm tall, rarely semierect to 1 m tall.

12a. Leaf blade with scattered, sessile, yellow glands abaxially 10. *R. procumbens*

12b. Leaf blade without scattered, sessile, yellow glands abaxially, sometimes with glandular hairs.

13a. Racemes pendent, lax, (3–)5–7-flowered; calyx purple to red 11. *R. triste*

13b. Racemes erect, dense, 5–15-flowered; calyx yellowish white 12. *R. palczewskii*

11b. Shrubs erect, usually more than 1 m tall.

14a. Racemes short, 2- or 3-flowered 13. *R. fargesii*

14b. Racemes (2–)4–30(–40) cm, (4–)8–40(–50)-flowered.

15a. Calyx tube cylindrical, 1.2–1.5 cm 14. *R. odoratum*

15b. Calyx tube campanulate or cupular, or if cylindrical then less than 0.7 cm.

16a. Leaf blade with scattered, sessile, yellow glands abaxially.

17a. Calyx and ovary with scattered, sessile, yellow glands 15. *R. nigrum*

17b. Calyx and ovary without scattered, sessile, yellow glands 16. *R. americanum*

16b. Leaf blade without scattered, sessile, yellow glands abaxially, sometimes with glandular hairs.

18a. Calyx lobes reflexed at or soon after anthesis.

19a. Racemes lax, rachis clearly visible at anthesis.

20a. Petiole 6–8 cm, leaf lobes acuminate at apex; calyx lobes not ciliate; fruit red, 0.8–1.2

cm 17. *R. griffithii*

- 20b. Petiole 3–5 cm, leaf lobes obtuse to acute at apex; calyx lobes ciliate; fruit purple-black, 0.5–0.7 cm 18. *R. altissimum*
- 19b. Racemes dense, rachis almost hidden at anthesis.
- 21a. Racemes spreading then pendulous, fewer than 30-flowered; calyx purple, without warts at base of calyx tube adaxially 19. *R. soulieanum*
- 21b. Racemes erect then pendulous, usually more than 30-flowered; calyx green to yellow, with 5 warts at base of calyx tube adaxially.
- 22a. Leaf lobes coarsely sharply serrate or doubly serrate at margin, acute or shortly acuminate at apex; warts on adaxial surface of calyx tube not joined by a raised ring 20. *R. mandshuricum*
- 22b. Leaf lobes coarsely crenate-serrate or doubly serrate at margin, obtuse or acute at apex; warts on adaxial surface of calyx tube joined by a raised ring 21. *R. multiflorum*
- 18b. Calyx lobes erect or incurved at anthesis.
- 23a. Calyx lobes ciliate or dentate at margin.
- 24a. Racemes lax, rachis clearly visible at anthesis; calyx tube pelviform, 1–1.5 mm 22. *R. pubescens*
- 24b. Racemes dense, rachis almost hidden at anthesis; calyx tube campanulate to shortly cylindrical, 1.5–3.5 mm.
- 25a. Petals not ciliate at margin; leaf blade to 12 × 15 cm, petiole 5–8 cm 23. *R. latifolium*
- 25b. Petals ciliate at margin; leaf blade to 10 × 10 cm, petiole 2.5–5 cm.
- 26a. Leaf blade and raceme rachis stalked glandular; petals subspatulate to flabellate; stamens inserted level with petals 24. *R. himalense*
- 26b. Leaf blade and raceme rachis not stalked glandular; petals narrowly cuneate to linear; stamens inserted below petals 25. *R. meyeri*
- 23b. Calyx lobes neither ciliate nor dentate at margin, at most erose.
- 27a. Racemes initially erect, 2–6 cm, 5–15-flowered; calyx tube pelviform or shallowly cupular, 1–2 mm.
- 28a. Calyx green to greenish brown; petals purplish; raceme rachis and pedicels sparsely shortly glandular hairy 26. *R. rubrum*
- 28b. Calyx yellowish white; petals yellowish; raceme rachis and pedicels pubescent at anthesis, glabrous in fruit 12. *R. palczewskii*
- 27b. Racemes nodding to pendulous, 5–40 cm, 9–50-flowered; calyx tube campanulate to shortly cylindrical, 2–6 mm.
- 29a. Racemes lax, 15–40-flowered; pedicels 3–10(–15) mm; calyx tube 4–6 mm; stamens exserted 27. *R. longiracemosum*
- 29b. Racemes dense, 5–30(–50)-flowered; pedicels absent or very short; calyx tube 2–4 mm; stamens included.
- 30a. Buds glabrous, apex obtuse; leaf blade adaxially sparsely coarsely glandular hairy; calyx lobes not incurved, apex obtuse; stamens inserted level with petals 28. *R. moupinense*
- 30b. Buds puberulent, apex acute; leaf blade adaxially densely pubescent; calyx lobes incurved, apex acute; stamens inserted below petals 29. *R. setchuense*
- 1b. Flowers unisexual (shrubs dioecious).
- 31a. Shrubs deciduous, though in leaf for most of year; flowers in subsessile umbels or fascicles, rarely solitary 30. *R. fasciculatum*
- 31b. Shrubs deciduous, semievergreen, or evergreen; flowers in racemes.
- 32a. Shrubs evergreen, rarely semievergreen, unarmed; leaf blade margin entire, rarely 3-lobed near apex.
- 33a. Branchlets and petioles glandular bristly; petioles 3–8 mm.
- 34a. Leaf blade narrowly elliptic to sublanceolate, ca. 3 × as long as wide; calyx purplish green, glabrous 31. *R. tianquanense*
- 34b. Leaf blade elliptic to obovate-elliptic, ca. 2 × as long as wide; calyx greenish white, stalked glandular 32. *R. henryi*
- 33b. Branchlets glabrous; petioles 0.5–4 cm, glabrous or sparsely glandular hairy.
- 35a. Leaf blade orbicular to reniform-orbicular, about as long as wide; calyx purple to purplish green 33. *R. hunanense*
- 35b. Leaf blade obovate to elliptic, longer than wide; calyx greenish white or yellowish green.
- 36a. Leaf blade 2–5 × 1.5–3 cm; male racemes erect; fruit 0.8–1.1 × 0.6–0.8 cm 34. *R. davidii*
- 36b. Leaf blade 5–10 × 2.5–4.5 cm; male racemes pendulous; fruit 1.5–2 × 0.7–1 cm 35. *R. laurifolium*
- 32b. Shrubs deciduous, unarmed or with 2 small prickles at each node; leaf blade margin lobed.

- 37a. Nodes each with 2 small spines; internodes minutely prickly or unarmed.
- 38a. Petioles pubescent to glandular hairy, rarely glabrescent; leaf blade margin 3–5-lobed.
- 39a. Female racemes up to 6-flowered; calyx tube 2–3 mm; fruit pubescent then glabrescent 36. *R. giraldii*
- 39b. Female racemes at least 8-flowered; calyx tube 1.5–2 mm; fruit glabrous 37. *R. pulchellum*
- 38b. Petioles glabrous, rarely puberulent; leaf blade margin 3-lobed.
- 40a. Shrubs low, to 1 m tall; leaf blade puberulent, remaining so at margin and sometimes abaxially 38. *R. saxatile*
- 40b. Shrubs erect, to 3 m tall; leaf blade glabrous.
- 41a. Petioles 0.5–1 cm; leaf blade 1–1.5 cm; male racemes 7–11-flowered 39. *R. glabrifolium*
- 41b. Petioles 1–2 cm; leaf blade 1.5–3.5 cm; male racemes 10–15-flowered 40. *R. diacanthum*
- 37b. Nodes and internodes unarmed.
- 42a. Terminal leaf lobe shorter than or rarely equaling lateral ones, apex obtuse, rarely acute.
- 43a. Leaf blade glabrous or margin ciliate, rarely viscid glandular; ovary and fruit glabrous 41. *R. heterotrichum*
- 43b. Leaf blade pubescent, or viscid or stalked glandular, or both; ovary and young fruit pubescent and glandular pubescent.
- 44a. Calyx green, sometimes tinged reddish brown 42. *R. kialanum*
- 44b. Calyx purple or purplish brown.
- 45a. Leaf blade orbicular to reniform-orbicular, pubescent and glandular, lobes coarsely obtusely serrate at margin, obtuse at apex; calyx pubescent and glandular 43. *R. orientale*
- 45b. Leaf blade broadly ovate, glandular but not pubescent, lobes sharply serrate at margin, obtuse to acute at apex; calyx glabrous, rarely puberulent 44. *R. xizangense*
- 42b. Terminal leaf lobe equaling or longer than lateral ones, apex acute, acuminate, or caudate.
- 46a. Leaf blade to 2 cm, terminal lobe slightly longer than lateral ones.
- 47a. Calyx pubescent; fruit black or reddish black 45. *R. pseudofasciculatum*
- 47b. Calyx glabrous; fruit red.
- 48a. Calyx purple; leaf blade glabrous, rarely sparsely glandular hairy adaxially; inflorescences glabrous 46. *R. humile*
- 48b. Calyx green or yellow-green; leaf blade and inflorescences minutely pubescent and stalked glandular 47. *R. glabricalycinum*
- 46b. Leaf blade more than 2 cm, terminal lobe usually much longer than lateral ones.
- 49a. Calyx hairy or glandular or both.
- 50a. Fruit black.
- 51a. Calyx green, sometimes tinged reddish brown, tube cupular; fruit sparsely stalked glandular, sometimes hairy 48. *R. vilmorinii*
- 51b. Calyx dark red or purple, tube saucer-shaped, rarely shallowly cupular; fruit glabrous 49. *R. rubrisepalum*
- 50b. Fruit yellowish green, red, or reddish brown.
- 52a. Fruit densely villous and stalked glandular.
- 53a. Leaf blade 2.5–5 cm, margin acutely serrate or doubly serrate; male racemes lax, 6–7 cm, 10–15-flowered 50. *R. franchetii*
- 53b. Leaf blade 6–10 cm, margin obtusely dentate or doubly dentate; male racemes dense, 7–15 cm, 15–30-flowered or more 51. *R. maximowiczii*
- 52b. Fruit glabrous, pubescent, or sparsely stalked glandular.
- 54a. Leaf blade 5–9 cm, margin deeply doubly serrate, terminal lobe longer than lateral ones, apex acuminate; calyx reddish brown 52. *R. takare*
- 54b. Leaf blade 2–5 cm, margin irregularly crenate-dentate or doubly dentate, rarely subentire, terminal lobe subequaling lateral ones; calyx green, sometimes tinged reddish brown 42. *R. kialanum*
- 49b. Calyx glabrous.
- 55a. Inflorescences stalked glandular, otherwise glabrous.
- 56a. Leaf blade glabrous, rarely sparsely stalked glandular, terminal lobe acute at apex; calyx green 53. *R. komarovii*
- 56b. Leaf blade coarsely appressed hairy adaxially, terminal lobe acuminate at apex; calyx yellowish brown 54. *R. maximowiczianum*
- 55b. Inflorescences hairy and stalked glandular.
- 57a. Fruit black.

- 58a. Terminal leaf lobe usually less than $2 \times$ as long as lateral ones 55. *R. luridum*
 58b. Terminal leaf lobe usually more than $2 \times$ as long as lateral ones.
 59a. Male racemes 1.5–2.5 cm; pedicels 1–2 mm; calyx green, sometimes slightly tinged reddish brown 48. *R. vilmorinii*
 59b. Male racemes 3–5 cm; pedicels 2–6 mm; calyx reddish brown 56. *R. tenue*
 57b. Fruit red or dark purple.
 60a. Leaf blade base rounded to subtruncate; calyx tube shallowly cupular 57. *R. glaciale*
 60b. Leaf blade base truncate to cordate, sometimes subtruncate; calyx tube saucer-shaped.
 61a. Calyx green to yellowish green; leaf blade margin with mostly simple teeth, rarely with some double teeth 58. *R. viridiflorum*
 61b. Calyx reddish brown or purplish brown; leaf blade margin with double teeth, or both double and simple teeth mixed.
 62a. Leaf blade oblong-ovate, rarely suborbicular, terminal lobe more than $2 \times$ as long as lateral ones, apex acuminate to caudate 56. *R. tenue*
 62b. Leaf blade broadly ovate to suborbicular, terminal lobe less than $2 \times$ as long as lateral ones, apex acute to shortly acuminate 59. *R. laciniatum*

Key 2

- 1a. Flowers bisexual; bracts short and minute, ovate or suborbicular, rarely ligulate, oblong, or lanceolate.
 2a. Branchlets armed with prickles.
 3a. Racemes 2–9 cm, 4–20-flowered; bracts lanceolate or ligulate, 1-nerved; calyx tube pelviform or pentagonal; style 2-parted 1. *R. horridum*
 3b. Racemes 1–1.5 cm or slightly more, 2–8-flowered, sometimes flowers solitary; bracts ovate or suborbicular, rarely oblong, 3-nerved; calyx tube campanulate or cylindrical; style 2-lobed or 2-parted.
 4a. Calyx tube at base adaxially and style villous; fruit globose 2. *R. reclinatum*
 4b. Calyx tube at base adaxially and style glabrous; fruit globose, rarely ellipsoid or oblong.
 5a. Fruit oblong, 2–2.5 cm 3. *R. stenocarpum*
 5b. Fruit globose, rarely ellipsoid, 0.8–1.5 cm.
 6a. Fruit stalked glandular or minutely prickly.
 7a. Ovary and fruit unarmed, stalked glandular; branchlets armed with 3 robust prickles below petiole at nodes; style divided to middle; anthers with apical nectary 8. *R. alpestre*
 7b. Ovary and fruit minutely prickly, not stalked glandular; branchlets armed with 3–7 verticillate, robust prickles below petiole at nodes; style 2-lobed only at apex; anthers without apical nectary 7. *R. burejense*
 6b. Fruit glabrous.
 8a. Leaf blade, inflorescences, and calyx glabrous; fruit 1.2–1.5 cm 4. *R. aciculare*
 8b. Leaf blade, inflorescences, and calyx pubescent; fruit 0.8–1 cm.
 9a. Branchlets with unarmed internodes and 3 robust prickles below petiole at nodes; calyx tube cylindrical; style shorter than stamens, apex 2-lobed; fruit red 6. *R. formosanum*
 9b. Branchlets with minutely spiny internodes and 3–7 verticillate, acicular prickles below petiole at nodes; calyx tube campanulate; style subequaling stamens, entire or only stigma slightly 2-lobed; fruit black 5. *R. fuyunense*
 2b. Branchlets unarmed.
 10a. Flowers solitary or 2-fascicled 9. *R. ambiguum*
 10b. Flowers in racemes.
 11a. Racemes 2- or 3-flowered 13. *R. fargesii*
 11b. Racemes (4–)8–40(–50)-flowered.
 12a. Flowers yellow; calyx tube cylindrical; style entire or only stigma 2-lobed 14. *R. odoratum*
 12b. Flowers green, yellowish white, or red; calyx tube pelviform, cupular, campanulate, or shortly cylindrical; style 2-lobed, rarely entire.
 13a. Leaf blade, calyx, ovary, and fruit yellow glandular, rarely eglandular.

- 14a. Shrubs low, trailing, 20–40 cm tall; leaf blade orbicular-reniform, abaxially glabrous, rarely sparsely pubescent along veins, yellow glandular; inflorescence axis and pedicels glabrous; fruit purple-brown 10. *R. procumbens*
- 14b. Shrubs erect, 1–2 m tall; leaf blade broadly ovate or suborbicular, abaxially pubescent and glandular; inflorescence axis and pedicels pubescent; fruit black.
- 15a. Calyx yellowish green, reddish, or glaucous, pubescent and yellow glandular, tube subcampanulate; style apically 2-lobed; ovary sparsely pubescent and glandular 15. *R. nigrum*
- 15b. Calyx yellowish white, pubescent, eglandular, tube shortly cylindric-campanulate; style entire or only stigma 2-lobed; ovary glabrous, eglandular 16. *R. americanum*
- 13b. Leaf blade, calyx, ovary, and fruit eglandular, rarely stalked glandular.
- 16a. Calyx tube pelviform or shallowly cupular.
- 17a. Calyx lobes reflexed, not ciliate at margin.
- 18a. Leaf lobes coarsely sharply serrate or doubly serrate at margin, acute or shortly acuminate at apex; calyx tube adaxially at base with 5 warts not connected by an elevated ring 20. *R. mandshuricum*
- 18b. Leaf lobes coarsely crenate-serrate or doubly serrate at margin, subacute or subobtuse at apex; calyx tube adaxially at base with 5 warts connected by an elevated ring 21. *R. multiflorum*
- 17b. Calyx lobes erect, ciliate or not at margin.
- 19a. Shrubs low, subcreeping, to 40(–80) cm tall 11. *R. triste*
- 19b. Shrubs erect, to 100 cm tall or more.
- 20a. Calyx lobes ciliate at margin 22. *R. pubescens*
- 20b. Calyx lobes not ciliate at margin.
- 21a. Leaf blade reniform-orbicular, rarely suborbicular, abaxially pubescent; inflorescence rachis and pedicels pubescent; calyx yellow-white; petals yellowish 12. *R. palczewskii*
- 21b. Leaf blade suborbicular, glabrous on both surfaces or abaxially sparsely pubescent; inflorescence rachis and pedicels glabrous; calyx greenish or greenish brown; petals purplish 26. *R. rubrum*
- 16b. Calyx tube campanulate to shortly cylindric-campanulate.
- 22a. Calyx lobes reflexed, tube campanulate.
- 23a. Leaf blade glabrous on both surfaces, lobes subacute or subobtuse at apex; calyx lobes ciliate at margin; stamens inserted below petals 18. *R. altissimum*
- 23b. Leaf blade pubescent abaxially, lobes acuminate or shortly so at apex, rarely acute; calyx lobes not ciliate at margin; stamens inserted level with petals.
- 24a. Racemes lax, 7–15 cm, 10–20-flowered; anthers ovoid or oblong-ovoid, apex acute, with a nectary 17. *R. griffithii*
- 24b. Racemes dense, 4–6 cm, 5–25-flowered; anthers globose or subglobose, apex obtuse, slightly impressed, without a nectary 19. *R. soulieanum*
- 22b. Calyx lobes erect, tube campanulate to shortly cylindric-campanulate.
- 25a. Calyx lobes not ciliate at margin.
- 26a. Calyx tube shortly cylindric-campanulate; stamens and style longer than calyx lobes; racemes lax, 15–25(–30) cm 27. *R. longiracemosum*
- 26b. Calyx tube campanulate; stamens and style shorter than calyx lobes; racemes dense, 5–12(–16) cm.
- 27a. Branchlets and leaf blade glabrous or leaf blade abaxially pubescent along veins; calyx lobes apically obtuse but not incurved; stamens inserted level with petals . 28. *R. moupinense*
- 27b. Branchlets and leaf blade pubescent; calyx lobes apically subacute and incurved; stamens inserted below petals 29. *R. setchuense*
- 25b. Calyx lobes ciliate at margin.
- 28a. Branchlets and petioles both pubescent and shortly stalked glandular; calyx puberulent, lobes dentate; petals not ciliate at margin 23. *R. latifolium*
- 28b. Branchlets and petioles glabrous or subglabrous; calyx glabrous, lobes not dentate; petals ciliate at margin or apex.

- 29a. Leaf blade stalked glandular; calyx tube campanulate; stamens inserted level with petals 24. *R. himalense*
- 29b. Leaf blade not stalked glandular; calyx tube shortly cylindric-campanulate; stamens inserted below petals 25. *R. meyeri*
- 1b. Flowers unisexual (shrubs dioecious); bracts narrow, ligulate, oblong, elliptic, lanceolate, or linear.
- 30a. Inflorescences ± subsessile, 2–9-flowered umbels, or flowers few and fascicled, rarely solitary; shrubs deciduous 30. *R. fasciculatum*
- 30b. Inflorescences racemes; shrubs deciduous or evergreen, rarely semievergreen.
- 31a. Shrubs evergreen, rarely semievergreen; branchlets unarmed; leaf blade margin entire.
- 32a. Fruit glabrous; leaf blade glabrous.
- 33a. Leaf blade obovate-elliptic or broadly elliptic, petiole 0.5–1.5 cm, stalked glandular; calyx green-white or yellow-green 34. *R. davidii*
- 33b. Leaf blade suborbicular or reniform-orbicular, petiole 1–4 cm, eglandular; calyx purplish or greenish purple 33. *R. hunanense*
- 32b. Fruit usually pubescent or stalked glandular; leaf blade glabrous or stalked glandular.
- 34a. Fruit stalked glandular 32. *R. henryi*
- 34b. Fruit pubescent.
- 35a. Leaf blade narrowly elliptic or sublanceolate, rarely broadly elliptic, abaxially glandular bristly along midvein and at margin, petiole 0.3–0.8 cm, glandular bristly; calyx purple-green, glabrous; fruit green 31. *R. tianquanense*
- 35b. Leaf blade ovate, ovate-oblong, or elliptic, glabrous, petiole 0.7–1.8 cm, glabrous; calyx yellowish green, pubescent or glabrous; fruit purple 35. *R. laurifolium*
- 31b. Shrubs deciduous; branchlets unarmed or with 2 small prickles at nodes; leaf blade margin lobed.
- 36a. Branchlets with 2 small prickles at nodes, sparsely minutely spiny or unarmed at internodes; staminate racemes (2–)3–7 cm, 7–20-flowered.
- 37a. Racemes glabrous 40. *R. diacanthum*
- 37b. Racemes pubescent.
- 38a. Fruit stalked glandular 36. *R. giraldii*
- 38b. Fruit glabrous.
- 39a. Leaf blade glabrous 39. *R. glabrifolium*
- 39b. Leaf blade pubescent on both surfaces or at margin.
- 40a. Leaf blade obovate, pubescent only at margin or sometimes abaxially puberulent, base truncate, petiole glabrous 38. *R. saxatile*
- 40b. Leaf blade broadly ovate, pubescent on both surfaces, base subtruncate or shallowly cordate, petiole pubescent 37. *R. pulchellum*
- 36b. Branchlets unarmed; staminate racemes (1–)5–15 cm, (4–)10–30-flowered.
- 41a. Terminal leaf lobe subequalling lateral ones, apex obtuse, rarely acute.
- 42a. Fruit glabrous 41. *R. heterotrichum*
- 42b. Fruit pubescent and stalked glandular.
- 43a. Leaf blade suborbicular or reniform-orbicular, pubescent, both viscous glandular and shortly stalked glandular, lobes coarsely obtusely serrate at margin, obtuse at apex; calyx pubescent and shortly stalked glandular 43. *R. orientale*
- 43b. Leaf blade broadly ovate, glabrous, either viscous glandular or shortly stalked glandular (not both), lobes sharply serrate at margin, acute at apex; calyx glabrous, rarely puberulent 44. *R. xizangense*
- 41b. Terminal leaf lobe longer than, rarely equalling, lateral ones, apex acute, acuminate, or caudate.
- 44a. Leaf blade 1–2 cm, terminal lobe slightly longer than lateral ones, apex acute; calyx lobes spreading or reflexed.
- 45a. Calyx pubescent; fruit black or red-black 45. *R. pseudofasciculatum*
- 45b. Calyx glabrous; fruit red.
- 46a. Calyx purple; leaf blade and inflorescences glabrous 46. *R. humile*

- 46b. Calyx green or yellow-green; leaf blade and inflorescences minutely pubescent and shortly stalked glandular 47. *R. glabricalycinum*
- 44b. Leaf blade 2–10 cm, terminal lobe usually much longer than lateral ones, apex acuminate or shortly so to caudate, rarely acute; calyx lobes erect, sometimes reflexed.
- 47a. Calyx pubescent.
- 48a. Fruit black.
- 49a. Calyx green or slightly stained red-brown, tube cupular, lobes always reflexed; fruit sparsely stalked glandular 48. *R. vilmorinii*
- 49b. Calyx scarlet or purple, tube saucer-shaped, rarely shallowly cupular, lobes erect; fruit glabrous 49. *R. rubrisepalum*
- 48b. Fruit red or red-brown.
- 50a. Fruit pubescent and stalked glandular.
- 51a. Leaf blade 2.5–5 cm, coarsely sharply incised serrate or doubly serrate; male racemes lax, 6–7 cm, 10–15-flowered; calyx red; fruit 4–6 mm in diam. 50. *R. franchetii*
- 51b. Leaf blade 6–10 cm, coarsely obtusely serrate or doubly serrate; male racemes dense, 7–15 cm, 15–30-flowered or more; calyx yellow-green, slightly tinged red; fruit 7–10 mm in diam. 51. *R. maximowiczii*
- 50b. Fruit glabrous and only sparsely stalked glandular.
- 52a. Leaf blade 5–9 cm, glabrous or sparsely stalked glandular, margin deeply incised, terminal lobe longer than lateral ones, apex acuminate; calyx red-brown, lobes erect, 3-veined 52. *R. takare*
- 52b. Leaf blade 2–5 cm, pubescent and stalked glandular, margin lobed or subentire, terminal lobe subequalling lateral ones, apex obtuse or acute; calyx green or slightly suffused reddish brown, lobes reflexed or spreading, obscurely 5-veined 42. *R. kialanum*
- 47b. Calyx glabrous.
- 53a. Inflorescences glabrous.
- 54a. Leaf blade glabrous, rarely sparsely stalked glandular, terminal lobe acute at apex; calyx green 53. *R. komarovii*
- 54b. Leaf blade coarsely appressed pubescent, terminal lobe acuminate at apex; calyx yellow-brown 54. *R. maximowiczianum*
- 53b. Inflorescences pubescent and stalked glandular.
- 55a. Fruit black 55. *R. luridum*
- 55b. Fruit red.
- 56a. Leaf blade rounded to subtruncate at base; calyx tube shallowly cupular 57. *R. glaciale*
- 56b. Leaf blade truncate to cordate at base; calyx tube saucer-shaped.
- 57a. Calyx green or yellow-green; leaf margin coarsely and sharply simply serrate or rarely also with double teeth 58. *R. viridiflorum*
- 57b. Calyx red-brown or purple-brown; leaf margin incised doubly serrate or also with coarse, simple teeth.
- 58a. Branchlets and petioles pubescent and stalked glandular; leaf blade broadly ovate to suborbicular, terminal lobe slightly longer than lateral ones, apex acute to shortly acuminate; calyx lobes lanceolate or narrowly oblong 59. *R. laciniatum*
- 58b. Branchlets and petioles not pubescent or only sparsely stalked glandular; leaf blade oblong-ovate, rarely suborbicular, terminal lobe 2–3 × as long as lateral ones, apex acuminate to caudate; calyx lobes ovate or ligulate 56. *R. tenue*

1. *Ribes horridum* Ruprecht ex Maximowicz, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 9: 117. 1859.

密刺茶沸子 mi ci cha biao zi

Ribes lacustre (Persoon) Poiret var. *horridum* (Ruprecht ex Maximowicz) Janczewski.

Shrubs 0.8–1.5 m tall. Branchlets laxly spreading; nodal spines numerous, verticillate, robust, needlelike, to 1

cm; internodes with dense, brownish yellow, needlelike spines. Buds ovoid, apex obtuse; scales papery. Petiole 1–4(–5) cm, spiny-bristly and sparsely pubescent; leaf blade broadly ovate to suborbicular, 2–4 cm, glabrous, sparsely spiny, base cordate; lobes (3–)5(–7), margin coarsely serrate or doubly serrate, apex obtuse or acute; terminal lobe rhombic, slightly longer than lateral ones.

Racemes nodding, 2–9 cm, 4–20-flowered; rachis and pedicels pubescent and glandular hairy; bracts broadly lanceolate to ligulate, 2–3 mm, 1-veined, margin ciliate. Flowers bisexual; pedicel 5–7 mm. Calyx glabrous; tube greenish brown or purplish brown, pelviform, 2–3 mm; lobes spreading, rarely reflexed, flabellate to suborbicular. Petals greenish white to yellowish green, flabellate, ca. 2 mm. Ovary pyriform, glandular hairy. Style equaling or longer than stamens, glabrous, 2-cleft. Fruit black, globose, 0.8–1.2 cm, stalked glandular. Fl. May–Jun, fr. Jul–Aug.

Coniferous forests, forest margins; 1500–2100 m. S Jilin (Changbai Shan) [Japan, Korea, Russia].

2. *Ribes reclinatum* Linnaeus, Sp. Pl. 1: 201. 1753.

欧洲醋栗 ou zhou cu li

Grossularia reclinata (Linnaeus) Miller; *G. vulgaris* Spach; *Ribes grossularia* Linnaeus.

Shrubs 1–1.5 m tall. Branchlets pubescent when young; nodal spines 1–3, robust; internodes with sparse, needlelike spines, rarely unarmed. Buds oblong-ovoid to ovoid-lanceolate, 4–5 mm, apex acute to shortly acuminate; scales scarious. Petiole 1–2 cm, pubescent, plumose hairy near base; leaf blade orbicular to subreniform, 2–4(–6) cm, subleathery, pubescent, base truncate or shallowly cordate; lobes 3–5, margin coarsely obtusely dentate, apex obtuse. Flowers axillary, solitary or 2 or 3 in short racemes, bisexual; bracts ovate to orbicular, 1.5–2 mm, 3-veined, pubescent; pedicel 5–7 mm, pubescent or shortly stalked glandular. Calyx greenish white tinged red, rarely reddish, pubescent; tube shortly campanulate, 3–5 mm, villous adaxially; lobes reflexed at anthesis, oblong to ligulate, rarely obovate-oblong, 5–7 mm. Petals greenish white, rarely red, subflabellate to broadly obovate, 1.5–2.5 mm, pubescent. Stamens erect, 3–5 mm; filaments usually white; anthers ovoid. Ovary and fruit pubescent and glandular hairy, rarely glandular hairy only. Style clavate, villous, 2-lobed. Fruit yellowish green or red, globose, to 1.4 cm. Fl. May–Jun, fr. Jul–Aug.

Widely naturalized in forests and thickets; medium altitudes. Hebei, Heilongjiang, Jilin, Liaoning, Shandong, Xinjiang, probably elsewhere [native to Europe].

3. *Ribes stenocarpum* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, Sér. 3, 27: 475. 1881.

长果茶沸子 chang guo cha biao zi

Grossularia stenocarpa (Maximowicz) Berger.

Shrubs 1–2(–3) m tall. Branchlets pubescent when young, gradually glabrescent; nodal spines 1–3, robust, 0.8–2 cm; internodes sparsely minutely prickly or unarmed. Buds ovoid; scales scarious. Petiole (1–)2–3 cm, pubescent and sparsely glandular hairy; leaf blade broadly ovate to suborbicular, 2–3 × 2.5–4 cm, pubescent, gradually glabrescent, sometimes sparsely shortly stalked glandular along veins, base truncate to subcordate; lobes 3–5, margin coarsely obtusely dentate, apex obtuse. Flowers axillary, solitary or 2 or 3 in short racemes, bisexual; bracts paired, broadly ovate, 2–3

mm, 3-veined, margin sparsely glandular hairy; pedicel 3–5 mm, sparsely glandular hairy. Calyx green to greenish brown, glabrous; tube campanulate, 4–6 mm, glabrous adaxially; lobes spreading or reflexed at anthesis, usually erect in fruit, ligulate to oblong, 5–7 mm. Petals white, oblong to ligulate, 4–6 mm. Stamens equaling or slightly longer than petals; filaments white; anthers ovoid to ovoid-oblong. Ovary oblong, glabrous. Style longer than stamens, divided for almost 1/2 its length. Fruit red, or green tinged red, oblong, 2–2.5 × ca. 1 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

• Coniferous or mixed forests, thickets on mountain slopes, ravines; 2300–3300 m. Gansu, E and S Qinghai, Shaanxi, NW Sichuan.

4. *Ribes aciculare* Smith in Rees, Cycl. 30: 372. 1819.

阿尔泰醋栗 a er tai cu li

Grossularia acicularis (Smith) Spach.

Shrubs to 1 m tall or slightly more. Branchlets glabrous; nodal spines 3–7, verticillate, needlelike, to 1 cm; internodes spiny. Buds oblong, 4–6 mm, apex acute; scales scarious. Petiole to 3 cm, glabrous to sparsely puberulent; leaf blade broadly ovate to suborbicular, 1.5–3 × 3–5 cm, mostly glabrous, abaxial vein-axils sparsely puberulent, base truncate to cordate; lobes 3–5, margin coarsely acutely serrate, apex obtuse or acute; terminal lobe subequaling lateral ones. Flowers solitary or 2 or 3 in short racemes, bisexual; rachis 1–1.2 cm; bracts ovate to narrowly so, 2–3.5 mm, 3-veined, usually glabrous; pedicel 3–6 mm, glabrous or sparsely stalked glandular. Calyx greenish white tinged yellow or pink; tube broadly campanulate, 4–6 mm, glabrous on both surfaces; lobes reflexed, spreading or erect in fruit, oblong to spatulate, 5–6 mm. Petals white, obovate, 2–3.5 mm. Stamens slightly longer than petals; filaments white; anthers ovoid-ellipsoid. Ovary glabrous, rarely sparsely stalked glandular. Style glabrous, divided for ca. 1/2 its length. Fruit red, globose, 1.2–1.5 cm, glabrous or sparsely stalked glandular. Fl. May–Jun, fr. Jul–Aug.

Forest margins, thickets, rocky slopes; 1500–2100 m. N Xinjiang (Altay Shan) [Mongolia, Russia].

5. *Ribes fuyunense* T. C. Ku & Konta, Guihaia 9: 287. 1989.

富蕴茶沸子 fu yun cha biao zi

Shrubs 1–2 m tall. Branchlets pubescent; nodal spines 3–7, verticillate, needlelike, to 1 cm; internodes minutely sparsely prickly. Buds yellowish brown, oblong to ovoid, 4–6 × 2–3 mm, pubescent, apex obtuse or acute. Petiole 1.5–3 cm, minutely pubescent, sparsely stalked glandular near base; leaf blade broadly ovate to suborbicular, 1.5–2.5 cm, sparsely pubescent, usually also with small glands, base rounded to subcordate; lobes 3–5, margin coarsely serrate, apex obtuse or acute; terminal lobe subequaling or slightly longer than lateral ones. Flowers solitary or 2 or 3 in short racemes, bisexual; bracts ovate to suborbicular, 1.5–2.5 mm, pubescent, margin shortly stalked glandular; pedicel 2–4 mm, minutely pubescent and

sparsely stalked glandular. Calyx pubescent then glabrescent; tube campanulate, 4–6 mm, glabrous adaxially; lobes reflexed, oblong to ligulate, 5–7 mm. Petals obovate-oblong to ligulate, 1.5–2.5 mm. Stamens longer than petals. Ovary glabrous. Style slightly shorter than or subequaling stamens, apex entire or stigma 2-lobed. Fruit purple-black, globose, 0.8–1 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

• Moist mountain slopes, dry foothills, rock crevices; 900–1900 m. N Xinjiang.

6. *Ribes formosanum* Hayata, Bot. Mag. (Tokyo) 20: 56. 1906.

台湾茶沸子 tai wan cha biao zi

Shrubs to 2 m tall. Branchlets stout, glabrous to sparsely pubescent; nodal spines 3, robust, to 1.3 cm; internodes unarmed. Buds ovoid, 2–4 mm, apex acute; scales scarious. Leaves 1–3-clustered at branchlet apex; petiole 1–2 cm, minutely pubescent; leaf blade suborbicular, 1.5–2 cm, sparsely puberulent, base truncate to shallowly cordate; lobes 3–5, reaching about halfway to leaf blade base, margin coarsely obtusely dentate, apex obtuse; terminal lobe slightly longer than lateral ones. Flowers often 1 per leaf axil, bisexual; bracts 2 per node, ovate, 2–4 mm, 3-veined, margin stalked glandular; pedicel 1–1.5 cm, sparsely pubescent or stalked glandular. Calyx minutely pubescent; tube cylindric, 7–10 mm, glabrous adaxially; lobes reflexed, spreading in fruit, oblong to elliptic, 7–9 mm. Petals scalelike, 4–5 mm. Stamens slightly longer than petals. Ovary subglobose, glabrous. Style glabrous, apex 2-lobed. Fruit red, globose, 0.8–1 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

• Coniferous or mixed forests; 2500–3800 m. Taiwan.

7. *Ribes burejense* Fr. Schmidt, Mém. Acad. Imp. Sci. Saint Pétersbourg, Sér. 7, 12(2): 42. 1868.

刺果茶沸子 ci guo cha biao zi

Shrubs 1–1.5(–2) m tall. Branchlets pubescent when young, becoming glossy; nodal spines 3–7, stout, to 1 cm; internodes with dense, needlelike spines. Buds oblong, apex acute; scales scarious. Petiole 1.5–3 cm, pubescent and sparsely glandular hairy; leaf blade broadly ovate, 1.5–4 × 1.5–5 cm, pubescent when young, gradually glabrescent, abaxial veins sparsely glandular hairy, base truncate to cordate; lobes 3–5, margin coarsely obtusely dentate, apex obtuse to acute. Flowers axillary, solitary or 2 or 3 in short racemes, bisexual; bracts broadly ovate, 3–4 mm, pubescent, 3-veined; pedicel 5–10 mm, subglabrous, sometimes glandular hairy. Calyx brown to reddish brown, subglabrous; tube broadly campanulate, 3–4 mm; lobes spreading or reflexed, erect in fruit, oblong to spatulate, 6–7 mm. Petals white to pinkish, oblong to spatulate, 4–5 mm. Stamens subequaling petals; anthers ovoid-

ellipsoid, without nectary at apex. Ovary glabrous, but with minute, yellowish brown spines. Style subequaling stamens, apex 2-lobed. Fruit reddish black when mature, globose, ca. 1 cm, glabrous, rarely villous, with numerous minute, yellowish brown spines. Fl. May–Jun, fr. Jul–Aug.

Coniferous, broad-leaved, and mixed forests, open woods, forest margins, thickets and stream banks in mountain regions; 900–2300 m. Gansu, Hebei, Heilongjiang, W Henan, E and S Jilin, E Liaoning, S Nei Mongol, SE Shaanxi, Shanxi [N Korea, Mongolia, Russia].

- 1a. Fruit not villous, but with numerous minute, yellowish brown spines . 7a. var. *burejense*
1b. Fruit villous and with numerous minute, yellowish brown spines .. 7b. var. *villosum*

7a. *Ribes burejense* var. *burejense*

刺果茶沸子(原变种) ci guo cha biao zi (yuan bian zhong)

Grossularia burejensis (Fr. Schmidt) Berger; *Ribes grossularioides* Hemsley; *R. macrocalyx* Hance.

Fruit not villous, but with numerous minute, yellowish brown spines.

Coniferous, broad-leaved, and mixed forests, forest margins, thickets and stream banks in mountain regions; 900–2300 m. Gansu, Hebei, Heilongjiang, W Henan, E Jilin, E Liaoning, S Nei Mongol, SE Shaanxi, Shanxi [N Korea, Mongolia, Russia].

7b. *Ribes burejense* var. *villosum* L. T. Lu, in Acta Phytotax. Sin. 31: 452. 1993.

长毛茶沸子 chang mao cha biao zi

Fruit villous and with numerous minute, yellowish brown spines.

• Shady broad-leaved forests, open woods; 900–1000 m. S Jilin (Changbai Shan).

8. *Ribes alpestre* Wallich ex Decaisne in Jacquemont, Voy. Inde 4(Bot.): 64. 1844.

长刺茶沸子 chang ci cha biao zi

Shrubs 1–3 m tall. Branchlets puberulent when young; nodal spines 3, verticillate, stout, 1–3 cm; internodes sparsely and minutely prickly or stalked glandular. Buds ovoid; scales scarious. Petiole 2–3.5 cm, puberulent or sparsely glandular hairy; leaf blade broadly ovate, 1.5–3 × 2–4 cm, puberulent, more densely so along veins, glabrescent, base subtruncate to cordate; lobes 3–5, margin coarsely obtusely serrate or doubly serrate, apex obtuse; terminal lobe subequaling or slightly longer than lateral ones. Flowers axillary, solitary or 2 or 3 in short racemes, bisexual; bracts paired, broadly ovate to ovate-triangular, 2–3 mm, 3-veined; pedicel 5–8 mm, glabrous or sparsely glandular hairy. Calyx greenish or reddish brown, pubescent and sparsely stalked glandular, rarely glabrous; tube campanulate, 5–6 mm, glabrous adaxially; lobes reflexed, erect in fruit, oblong to ligulate, 5–7 mm. Petals white, elliptic to oblong, rarely obovate, 2.5–3.5 mm. Stamens ca. 4–5 mm; anthers exerted, ovoid, apex with cupular nectary. Ovary glabrous, rarely pubescent, usually stalked glandular. Style clavate, divided for almost 1/2 its length. Fruit purple, globose

to ellipsoid, 1.2–1.5 × 1–1.2 cm, usually stalked glandular. Fl. Apr–Jun, fr. Jun–Sep.

Broad-leaved or coniferous forests, undergrowth of sparse forests on sunny slopes, forest margins, foothills, grasslands in ravines, river banks; 1000–3900 m. Gansu, SE Ningxia, Qinghai, Shaanxi, Shanxi, W Sichuan, SE Xizang, W Yunnan [Afghanistan, Bhutan, Kashmir]. The fruit can be made into soft drinks and wine or eaten raw.

- 1a. Spines stout, to 3 cm; calyx glabrous or subglabrous 8c. var. *giganteum*
1b. Spines 1–2 cm; calyx pubescent.
2a. Ovary and fruit stalked glandular 8a. var. *alpestre*
2b. Ovary and fruit not stalked glandular;
ovary pubescent; mature fruit
glabrous 8b. var. *eglandulosum*

8a. *Ribes alpestre* var. *alpestre*

长刺茶沸子(原变种) chang ci cha biao zi (yuan bian zhong)

Spines 1–2 cm. Calyx pubescent. Ovary and fruit stalked glandular.

Undergrowth of sparse forests on sunny slopes, forest margins, grasslands in ravines, river banks; 1000–3900 m. Gansu, Qinghai, Shaanxi, Shanxi, W Sichuan, SE Xizang, W Yunnan [Afghanistan, Bhutan, Kashmir].

8b. *Ribes alpestre* var. *eglandulosum* L. T. Lu, Acta Phytotax. Sin. 31: 451. 1993.

无腺茶沸子 wu xian cha biao zi

Spines 1–2 cm. Calyx pubescent. Ovary and fruit not stalked glandular. Ovary pubescent. Mature fruit glabrous.

• Forests, forest margins, foothills, river banks; 2400–3500 m. W Sichuan, SE Xizang.

8c. *Ribes alpestre* var. *giganteum* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1910: 72. 1910.

大刺茶沸子 da ci cha biao zi

Spines stout, to 3 cm. Calyx glabrous or subglabrous. Ovary and fruit glabrous, not stalked glandular.

• Broad-leaved or coniferous forests and forest margins on shady slopes; 2500–3700 m. E Gansu, SE Ningxia, E Qinghai, E Shanxi, W Sichuan.

9. *Ribes ambiguum* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, Sér. 3, 19: 251. 1874.

四川蔓茶沸子 si chuan man cha biao zi

Shrubs often epiphytic, to 1 m tall. Branchlets brown to grayish brown, glabrous, unarmed. Buds brown, ovoid, small, glabrous when old. Petiole to 4 cm, pubescent, rarely sparsely glandular hairy near base; leaf blade suborbicular to orbicular, 3–4.5 cm, pubescent on both surfaces, rarely subglabrous, abaxially viscous glandular, base cordate; lobes 3–5, broadly ovate to triangular-ovate, margin obtusely crenate-dentate, apex obtuse; terminal lobe subequaling lateral ones. Flowers 1 or 2, bisexual, 10–12 mm in diam.; bracts 2, to 2 mm, glabrous or sparsely stalked glandular at margin; pedicel to 1 cm, to 2 cm in fruit, pubescent or subglabrous. Calyx green, glabrous; tube pelviform, 1–

2 mm; lobes always erect, ligulate to elliptic, 5–7 mm. Petals subspatulate, 2.5–3.5 mm. Stamens longer than petals; anthers globose. Ovary subobovoid, glabrous, long stalked glandular. Style subequaling stamens, entire. Fruit green, subglobose, 1–1.2 cm, long stalked glandular. Seeds numerous, brown, ovoid, small. Fl. Apr–May, fr. Jul–Aug.

E Sichuan [Japan].

10. *Ribes procumbens* Pallas, Fl. Ross. 1(2): 35. 1789.

水葡萄茶沸子 shui pu tao cha biao zi

Shrubs prostrate, spreading, rooting, 0.2–0.4 m tall. Branchlets yellowish brown or brownish when young, later grayish brown, glabrous, sparsely yellow glandular, unarmed. Buds brown, oblong-ovoid to ellipsoid, 4–7 mm, apex obtuse or acute; scales pubescent at margin. Petiole 2–4 cm, glabrous or sparsely pubescent when young, yellow glandular or with some glandular hairs; leaf blade orbicular-reniform, 2.5–6 × 5–8 cm, glabrous on both surfaces or abaxially sparsely fragrant yellow glandular, rarely puberulent along veins, base truncate to shallowly cordate; lobes 3–5, ovate, margin deeply obtusely dentate, apex obtuse; terminal lobe subequaling lateral ones. Racemes 2–4 mm, 6–12-flowered; rachis and pedicels glabrous; bracts broadly triangular-ovate, 0.7–1.5 mm, sometimes absent. Flowers bisexual; pedicel 2–6 mm. Calyx pubescent and sparsely glandular; tube greenish, pelviform, 1–1.5 mm; lobes reflexed, purple, ovate to ovate-elliptic, 2–3.5 mm, 3-veined. Petals subflabellate to obovate, 1–1.5 mm. Stamens subequaling petals; anthers subglobose. Ovary glabrous or sparsely yellow glandular. Style entire or stigma 2-lobed. Fruit purple-brown, ovoid-globose, 1–1.3 cm in diam., glabrous, sparsely yellow glandular. Fl. May–Jun, fr. Jul–Aug.

Coniferous or mixed forests, river banks; low altitudes. N Heilongjiang, NE Nei Mongol [Japan, N Korea, N Mongolia, Russia].

11. *Ribes triste* Pallas, Nova Acta Acad. Sci. Imp. Petrop. Hist. Acad. 10: 378. 1797.

矮茶沸子 ai cha biao zi

Shrubs low, almost creeping, to 0.4 m tall, rarely erect to 0.8 m tall. Branchlets spreading, glabrous or puberulent when young, unarmed. Buds brown, ovoid, 4–6 mm, sparsely pubescent, apex acute. Petiole (1.5–)3–6 cm, puberulent, scattered stalked glandular; leaf blade reniform to orbicular-reniform, 3–6 × 4–7(–8) cm, glabrous or pubescent along veins abaxially, base shallowly cordate or subtruncate; lobes 3(–5), broadly triangular, margin coarsely sharply serrate, apex obtuse; terminal lobe slightly longer than lateral ones. Racemes pendent, lax, 2–4 cm, (3–)5–7-flowered; rachis and pedicels pubescent and sparsely glandular hairy; bracts ovate-orbicular, rarely oblong, 1.5–2 mm. Flowers bisexual; pedicel 2.5–4 mm. Calyx purple, glabrous;

tube shallowly cupular to subpelviform; lobes erect, purple or red tinged yellowish green, spatulate-orbicular, 1.5–2.5 mm. Petals red or purple, subflabellate to obovate or square, sometimes subcuneate, 0.7–1.3 mm. Stamens subequaling petals. Ovary glabrous. Style stout, subequaling stamens, deeply divided for ca. 1/2 its length or more. Fruit red, ovoid, 0.7–1 cm in diam., glabrous. Fl. May–Jun, fr. Jun–Aug.

Coniferous or mixed forests, forest margins, mossy rocky slopes; 1000–1500 m. Heilongjiang, E Jilin, SE Liaoning, E Nei Mongol [Japan, Korea, Russia; North America].

- 1a. Leaf blade thin, to 6 cm; petiole 3–6 cm 11a. var. *triste*
- 1b. Leaf blade thick, 3–4.5 cm; petiole 1.5–2.5 cm 11b. var. *repens*

11a. *Ribes triste* var. *triste*

矮茶沸子(原变种) ai cha biao zi (yuan bian zhong)

Coreosma tristis (Pallas) Lunell; *Ribes albinervium* Michaux; *R. melancholicum* Sievers ex Pallas; *R. propinquum* Turczaninow.

Leaf blade thin, to 6 cm; petiole 3–6 cm.

Coniferous or mixed forests; 1000–1500 m. N Heilongjiang, E Jilin, SE Liaoning, E Nei Mongol [Japan, Korea, Russia; North America].

11b. *Ribes triste* var. *repens* (A. I. Baranov) L. T. Lu in L. T. Lu & S. M. Hwang, Fl. Reipubl. Popularis Sin. 35(1): 320. 1995.

伏生茶沸子 fu sheng cha biao zi

Ribes repens A. I. Baranov, Acta Soc. Harb. Invest. Nat. & Ethnogr. 12: 31. 1954.

Leaf blade thick, 3–4.5 cm; petiole 1.5–2.5 cm.

• Coniferous forests, forest margins, mossy rocky slopes; 1000–1300 m. S Heilongjiang, NE Jilin, NE Nei Mongol.

12. *Ribes palczewskii* (Janczewski) Pojarkova, Trudy Prikl. Bot. 22(3): 341. 1929.

英吉利茶沸子 ying ji li cha biao zi

Ribes rubrum Linnaeus var. *palczewskii* Janczewski, Mém. Soc. Phys. Hist. Nat. Genève 35. 3: 290. 1907; *R. densiflorum* Liou (1955), not Philippi (1856); *R. liouanum* Kitagawa; *R. pubescens* Komarov (1903), not (Swartz ex Hartman) Hedlund (1901).

Shrubs 0.5–1 m tall. Branchlets puberulent then glabrous, unarmed. Buds grayish brown, ovoid, 4–6 mm, pubescent, apex acute. Petiole 2–5 cm, sparsely shortly stalked glandular and sparsely long stalked glandular near base; leaf blade reniform-orbicular, rarely suborbicular, 3.5–6 × 4–7 cm, abaxially sparsely pubescent, adaxially glabrous, base shallowly cordate to subtruncate; lobes 3–5, broadly triangular to ovate-triangular, margin coarsely sharply serrate, apex obtuse to acute; terminal lobe subequaling or slightly longer than lateral ones. Racemes erect, dense, 2–5 cm, 5–15-

flowered; rachis and pedicels pubescent, glabrous in fruit; bracts broadly ovate to ovate-orbicular, 1.5–2 mm. Flowers bisexual, 3–3.5 mm in diam.; pedicel 1–3 mm. Calyx yellowish white, glabrous; tube shallowly cupular, 1.5–2 mm; lobes erect, obovate to obovate-ligulate, 1.5–2.5 mm. Petals yellowish, subtruncate, ca. 1.2 mm. Stamens subequaling petals. Ovary glabrous. Style subequaling stamens, 2-lobed. Fruit red, subglobose, 0.7–0.9 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

Coniferous and mixed forests, *Larix* forests on mountain slopes, thickets along river and stream banks; 600–1500 m. Heilongjiang, Nei Mongol [Russia].

13. *Ribes fargesii* Franchet, Bull. Soc. Linn. Paris, n.s., 1: 86. 1898.

花茶沸子 hua cha biao zi

Shrubs to 2 m tall. Branchlets short, stout, glabrous, unarmed. Buds brown, oblong-ovoid to ovoid, 3–6 mm, glabrous, apex acute. Petiole 0.7–1.5 cm, usually red glandular hairy near base; leaf blade suborbicular to subovate, 3–4.5(–6) cm, glabrous, base rounded to subtruncate; lobes 3, shallow, margin coarsely serrate; terminal lobe triangular to ovate-triangular, 3–5 × as long as lateral ones, apex obtuse or acute; lateral lobes 4–6 mm, apex obtuse. Racemes short, 2–3-flowered; rachis and pedicels glabrous; bracts linear to lanceolate, glabrous, caducous. Flowers bisexual, 4–5 mm in diam.; pedicel short, 3–5 mm in fruit. Calyx green, sometimes tinged red, glabrous; tube pelviform, 1–1.5 mm; lobes erect, ligulate; 2.5–4 mm. Petals poorly developed or nearly absent, obtriangular. Stamens inserted below petals; anthers globose, apex with nectary. Ovary glabrous. Style short, 2-lobed. Fruit subglobose to broadly ellipsoid, 0.6–0.7 cm in diam. Seeds more than 20, oblong. Fl. Apr–May, fr. Jun–Jul.

• About 1800 m. E Sichuan.

14. *Ribes odoratum* Wendland in Bartling & Wendland, Beitr. Bot. 2: 15. 1825.

香茶沸子 xiang cha biao zi

Chrysobotrya odorata (Wendland) Rydberg; *Coreosma longifolia* Lunell; *C. odorata* (Wendland) Nieuwland; *Ribes fragrans* Loddiges (1830), not Pallas (1797).

Shrubs 1–2 m tall. Branchlets pubescent when young, glabrescent, unarmed. Buds brown to purplish brown, ovoid to narrowly so, 5–7 × 3–4 mm, pubescent, apex obtuse or acute. Petiole (0.5–)1–2 cm, pubescent; leaf blade obovate to orbicular-reniform, 2–5 cm, pubescent and glandular, later glabrescent, base cuneate, rarely subrounded or truncate; lobes 3–5, margin coarsely obtusely dentate, apex obtuse; terminal lobe equaling or slightly longer than lateral ones. Racemes often nodding, 2–5 cm, 5–10-flowered; rachis and pedicels pubescent; bracts ovate-lanceolate to elliptic-lanceolate, 5–7 mm, pubescent. Flowers bisexual, fragrant. Calyx

yellow, glabrous; tube sometimes slightly greenish, cylindrical, 12–15 × 1.5–2.5 mm; lobes spreading or reflexed, oblong to spatulate, 5–7 mm. Petals pinkish, subs spatulate to broadly obovate, 2.5–3.5 mm, glabrous. Stamens shorter than or equaling petals; anthers oblong. Ovary glabrous. Style 11–14 mm, entire or green stigma 2-lobed. Fruit black, globose to broadly ellipsoid, 0.8–1 cm, glabrous. Fl. May, fr. Jul–Aug. Cultivated as an ornamental. Heilongjiang, Liaoning, probably elsewhere in NE China [native to North America].

15. *Ribes nigrum* Linnaeus, Sp. Pl. 1: 201. 1753.

黑茶沸子 *hei cha biao zi*

Botrycarpum nigrum (Linnaeus) A. Richard; *Grossularia nigra* (Linnaeus) Ruprecht; *Ribes cyathiforme* Pojarkova; *R. pauciflorum* Turczaninow ex Ledebour.

Shrubs 1–2 m tall. Branchlets pubescent when young, glabrescent. Buds brown or yellowish brown, oblong-ovoid to ellipsoid, (3–)4–7 mm, pubescent, apex acute. Petiole 1–4 cm, pubescent, rarely sparsely glandular, sometimes plumose hairy near base; leaf blade suborbicular, 4–9 × 4.5–11 cm, abaxially pubescent and yellow glandular, adaxially puberulent when young, glabrescent, base cordate; lobes 3–5, broadly triangular, margin irregularly coarsely sharply serrate, apex acute; terminal lobe somewhat longer than lateral ones. Racemes arching or nodding, 3–5(–8) cm, 4–12-flowered; rachis and pedicels pubescent, often sparsely yellow glandular; bracts lanceolate or ovate, 1–2 mm, pubescent. Flowers bisexual, 5–7 mm in diam.; pedicel 2–5 mm. Calyx yellowish green to pinkish, pubescent and yellow glandular; tube subcampanulate, 1.5–2.5 mm; lobes spreading or reflexed, ligulate, 3–4 mm. Petals ovate to ovate-elliptic, 2–3 mm. Stamens subequaling petals; anthers ovoid, apex with nectary. Ovary sparsely pubescent and glandular. Style not equaling stamens, 2-lobed, rarely subentire. Fruit black, subglobose, 0.8–1(–1.4) cm, sparsely glandular. Fl. May–Jun, fr. Jul–Aug.

Naturalized in coniferous or mixed forests on slopes, moist valleys, ditch banks. Heilongjiang, NE Nei Mongol, N Xinjiang [native to Europe].

16. *Ribes americanum* Miller, Gard. Dict., ed. 8, *Ribes* no. 4. 1768.

美洲茶沸子 *mei zhou cha biao zi*

Coreosma americana (Miller) Nieuwland; *C. florida* (L’Héritier) Spach; *Ribes floridum* L’Héritier; *R. recurvatum* Michaux.

Shrubs 1–2 m tall. Branchlets slender, pubescent, yellow glandular, unarmed. Buds brown, ovoid, 2.5–5 mm, pubescent and glandular, apex obtuse. Petiole 2–5 cm, pubescent and sparsely yellow glandular, sometimes plumose hairy near base; leaf blade broadly ovate to suborbicular, 2.5–6 × 3–7(–8) cm, abaxially pubescent along veins, adaxially glabrous, yellow

glandular on both surfaces, base cordate or subtruncate; lobes 3–5, ovate to triangular-ovate, margin deeply serrate or doubly serrate, apex acute; terminal lobe slightly longer than lateral ones. Racemes pendulous, (4–)5–8 cm, 8–20-flowered or more; rachis and pedicels pubescent; bracts lanceolate to linear, 6–10 mm, pubescent, rarely sparsely glandular. Flowers bisexual; pedicel 2–4 mm. Calyx yellowish white, pubescent; tube campanulate to shortly cylindrical, 3–5 mm; lobes spreading then reflexed, oblong to ligulate, 3.5–6 mm. Petals yellowish white, ligulate, 2.5–4.5 mm. Stamens subequaling petals; anthers oblong, apex with nectary. Ovary glabrous. Style equaling or slightly longer than stamens, entire or stigma 2-lobed. Fruit black, subglobose, 0.8–1 cm, glabrous. Fl. May, fr. Jun–Jul.

Forests along river banks in mountain regions, grasslands. N China (precise distribution unknown) [native to North America].

17. *Ribes griffithii* J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 88. 1858.

曲萼茶沸子 *qu e cha biao zi*

Shrubs 2–3 m tall. Branchlets stout, glabrous, unarmed. Buds brown, ovoid, 5–7 mm, pubescent, apex acute. Petiole 6–8 cm, glabrous or puberulent, sometimes sparsely long stalked glandular near base; leaf blade suborbicular, 5–7(–9) × 6–10 cm, sparsely shortly stalked glandular on both surfaces, sometimes pubescent along veins abaxially when young, base deeply or shallowly cordate; lobes (3–)5, ovate-triangular, margin deeply or shallowly incised doubly serrate, apex acuminate; terminal lobe slightly longer than lateral ones. Racemes nodding, lax, 7–15 cm, 10–20-flowered; rachis and pedicels pubescent; bracts ligulate or lanceolate to ovate, (2–)5–7 mm, pubescent. Flowers bisexual, 5–6 mm in diam.; pedicel 1–2 mm. Calyx yellowish green tinged purple or red, glabrous; tube campanulate, 1.5–2.5 mm; lobes reflexed, elliptic to ligulate or oblong, 2–3 mm. Petals subs spatulate to subflabellate, 1–2 mm. Stamens inserted level with petals and equaling or slightly longer than them; anthers ovoid to narrowly so, apex with nectary. Ovary subglobose, glabrous. Style equaling or slightly longer than stamens, subentire or 2-lobed. Fruit red, ovoid-globose, 0.8–1.2 cm in diam., glabrous. Fl. May–Jun, fr. Jul–Sep.

Forests and forest margins in mountain regions, foothill thickets; 2600–4200 m. W Sichuan, Xizang, NW Yunnan [Bhutan, NE India, Nepal].

- 1a. Leaf blade shallowly cordate at base, lobes deeply incised doubly serrate at margin 17a. var. *griffithii*
- 1b. Leaf blade deeply cordate at base, lobes shallowly incised doubly serrate at margin 17b. var. *gongshanense*

17a. *Ribes griffithii* var. *griffithii*

曲萼茶沸子(原变种) *qu e cha biao zi (yuan bian zhong)*

Ribes moupinense Franchet f. *incisoserratum* T. C. Ku

Leaf blade shallowly cordate at base, lobes deeply incised doubly serrate at margin.

Forests and forest margins in mountain regions, foothill thickets; 2600–4200 m. W Sichuan, Xizang, NW Yunnan [Bhutan, NE India, Nepal].

17b. *Ribes griffithii* var. *gongshanense* (T. C. Ku) L. T. Lu in L. T. Lu & S. M. Hwang, *Fl. Reipubl. Popularis Sin.* 35(1): 309. 1995.

贡山茶沸子 *gong shan cha biao zi*

Ribes gongshanense T. C. Ku, *Guihaia* 9: 285. 1989.

Leaf blade deeply cordate at base, lobes shallowly incised doubly serrate at margin.

• Coniferous forests; below 3200 m. NW Yunnan (Gongshan Drung-Nu Zu Zizhixian).

18. *Ribes altissimum* Turczaninow ex Pojarkova, *Trudy Bot. Inst. Akad. Nauk SSSR, Ser. 1, Fl. Sist. Vyssh. Rast.* 2: 179. 1936.

高茶沸子 *gao cha biao zi*

Shrubs (1–)2–3 m tall. Branchlets glabrous, rarely sparsely shortly glandular hairy, unarmed. Buds brown, ovoid to narrowly so, pubescent, apex obtuse or acute. Petiole 3–5 cm, glabrous, rarely sparsely puberulent or shortly glandular hairy; leaf blade suborbicular, 3–6 cm, glabrous, sometimes sparsely shortly stalked glandular along veins abaxially, base cordate; lobes 3–5, ovate-triangular, margin deeply and sharply doubly serrate, sometimes with some simple teeth, apex obtuse or acute; terminal lobe equaling or slightly longer than lateral ones. Racemes slightly pendulous, 3–8 cm, 10–25-flowered; rachis and pedicels pubescent and shortly stalked glandular; bracts broadly ovate, margin sparsely glandular hairy. Flowers bisexual, 4–5 mm in diam.; pedicel 1–3 mm. Calyx yellowish, often spotted purple, glabrous; tube campanulate, 1.5–2.5 mm; lobes reflexed, subligulate to narrowly obovate, 1.5–2.5 mm, margin ciliate. Petals subflabellate to obovate, 0.8–1.5 mm. Stamens inserted below petals and subequaling them. Ovary glabrous. Style broadly conical, apex 2-lobed. Fruit purplish black, subglobose, 0.5–0.7 cm, glabrous. Fl. Jun, fr. Jul–Aug.

Coniferous or mixed forests and forest margins on mountain slopes; below 2000 m. N Xinjiang (Burqin Xian, Fuhai Xian) [N Mongolia, Russia (Siberia)].

19. *Ribes soulieanum* Janczewski, *Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math.* 1906: 4. 1906.

滇中茶沸子 *dian zhong cha biao zi*

Shrubs 1–2 m tall. Branchlets stout, glabrous or puberulent. Buds purple, narrowly ovoid, 5–7 mm, apex acute. Petiole 4–6 cm, puberulent when young, sparsely long

stalked glandular near base; leaf blade suborbicular, 4–7 × 4.5–8 cm, glabrous or abaxially pubescent along veins, base cordate; lobes 3(–5), ovate-triangular, margin deeply and sharply doubly serrate, also with some simple teeth, apex acute or shortly acuminate; terminal lobe slightly longer than lateral ones. Racemes spreading then pendulous, dense, 4–6 cm, 15–25-flowered; rachis and pedicels pubescent; bracts lanceolate, puberulent, margin slightly glandular hairy. Flowers bisexual, 5–7 mm in diam.; pedicel 0.5–2 mm. Calyx purple, glabrous; tube campanulate, 2–3 mm; lobes reflexed, ovate-ligulate, 2–3.5 mm. Petals erect, red, subreniform to reniform-orbicular, 1–2 mm. Stamens inserted level with and equaling or slightly longer than petals; anthers subglobose, apex without nectary. Ovary ellipsoid, glabrous. Style longer than stamens, 2-lobed. Fruit red, globose, 0.6–0.8 cm, glabrous. Fl. Apr–May, fr. Jun–Aug.

• Forest margins, foothills; below 3000 m. Xizang, NW Yunnan.

20. *Ribes mandshuricum* (Maximowicz) Komarov, *Trudy Imp. S.-Peterburgsk. Bot. Sada* 22: 437. 1903.

东北茶沸子 *dong bei cha biao zi*

Shrubs 1–3 m tall. Branchlets pubescent or subglabrous, unarmed. Buds brownish, ovoid to oblong, 4–7 mm, puberulent, apex obtuse or acute. Petiole 4–7 cm, pubescent; leaf blade 5–10 cm, appressed-pubescent on both surfaces or adaxially glabrous when young, glabrescent, rarely villous or tomentose, base cordate; lobes 3(–5), ovate-triangular, margin irregularly coarsely sharply serrate or doubly serrate, apex acute to shortly acuminate; terminal lobe slightly longer than lateral ones. Racemes erect then nodding, (3–)7–16(–20) cm, 40–50-flowered; rachis and pedicels densely pubescent; bracts ovate, glabrous or puberulent. Flowers bisexual, 3–5 mm in diam.; pedicel 1–3 mm. Calyx greenish or tinged yellow, glabrous or hairy; tube pelviform, 1–1.5(–2) mm, with 5 unconnected warts adaxially at base; lobes reflexed, obovate-ligulate to ligulate, (1–)2–3 mm. Petals yellowish green, subspatulate, 1–1.5 mm. Stamens longer than petals. Ovary glabrous or hairy. Style shorter than or equaling stamens, 2-lobed or sometimes divided for almost 1/2 its length. Fruit globose, red, 0.7–0.9 cm, glabrous or hairy. Fl. Apr–Jun, fr. Jul–Aug.

Coniferous or mixed forests or thickets on mountain slopes or in valleys, ravines; 300–1900 m. E Gansu, Hebei, Heilongjiang, W Henan, E Jilin, Liaoning, Nei Mongol, NE Shandong, SW Shaanxi, C Shanxi [N Korea, Russia (Siberia)].

- 1a. Calyx, ovary, and young fruit villous; leaf blade abaxially densely tomentose, adaxially villous 20c. var. *villosum*
- 1b. Calyx glabrous or subglabrous; ovary and fruit glabrous; leaf blade appressed-pubescent to glabrous.
 - 2a. Leaf blade appressed-pubescent on both surfaces when young, glabrescent;

racemes 7–16(–20) cm; calyx lobes 2–3 mm 20a. var. *mandshuricum*

- 2b. Leaf blade abaxially slightly pubescent along veins, more densely so at vein axils, adaxially glabrous when young; racemes 3–8 cm; calyx lobes 1–2 mm 20b. var. *subglabrum*

20a. *Ribes mandshuricum* var. *mandshuricum*

东北茶沸子(原变种) dong bei cha biao zi (yuan bian zhong)

Ribes multiflorum Kitaibel ex Schultes var. *mandshuricum* Maximowicz, Bull. Acad. Imp. Sci. Saint-Pétersbourg, Sér. 3, 19: 258. 1874.

Leaf blade appressed-pubescent on both surfaces when young, glabrescent. Racemes 7–16(–20) cm. Calyx glabrous or subglabrous; lobes 2–3 mm. Ovary and fruit glabrous.

Coniferous or mixed forests or thickets on mountain slopes or in valleys; 300–1800 m. E Gansu, Hebei, Heilongjiang, SW Henan, E Jilin, Liaoning, Nei Mongol, SW Shaanxi, WC Shanxi [N Korea, Russia (Siberia)].

20b. *Ribes mandshuricum* var. *subglabrum* Komarov, Trudy Imp. S.-Peterburgsk. Bot. Sada 22: 439. 1903.

光耀北茶沸子 guang ye dong bei cha biao zi

Leaf blade abaxially slightly pubescent along veins, more densely so at vein axils, adaxially glabrous when young. Racemes 3–8 cm. Calyx glabrous or subglabrous; lobes 1–2 mm. Ovary and fruit glabrous.

Forests on mountain slopes, ravines; 800–1900 m. Hebei, SW Heilongjiang, W Henan, E Jilin, NE Liaoning, NE Shandong, SC Shanxi [N Korea].

20c. *Ribes mandshuricum* var. *villosum* Komarov, Trudy Imp. S.-Peterburgsk. Bot. Sada 22: 438. 1903.

内蒙茶沸子 nei meng cha biao zi

Leaf blade abaxially densely tomentose, adaxially villous. Calyx, ovary, and young fruit villous.

• Ravines, slopes; low altitudes. NE Nei Mongol.

21. *Ribes multiflorum* Kitaibel ex Schultes in Roemer & Schultes, Syst. Veg. 5: 493. 1819.

多花茶沸子 duo hua cha biao zi

Ribes vitifolium Host.

Shrubs to 2 m tall. Branchlets robust, pubescent when young, unarmed. Buds purplish black or purplish brown, ovoid to oblong-ovoid, 7–9 mm, pubescent, apex acute. Petiole 3–5(–8) cm, pubescent, sometimes plumose hairy near base; leaf blade suborbicular, 5–10 cm, pubescent, more densely so abaxially, base truncate to shallowly cordate; lobes 3–5, broadly triangular, margin coarsely crenate-dentate, usually with some double teeth, apex obtuse or acute. Racemes erect then pendent, dense, 5–8(–12) cm, up to 50-flowered; rachis and pedicels pubescent; bracts ovate-orbicular, 1–2 mm, puberulent. Flowers bisexual, 5–6 mm in diam.; pedicel 2–4 mm. Calyx yellowish green, glabrous; tube pelviform to shallowly cupular, 1–1.5 mm, with 5 warts adaxially at base connected by a raised ring; lobes

reflexed after anthesis, ligulate to obovate-ligulate, 1.5–2.5 mm. Petals reflexed, subspatulate to obovate, 1–1.5 mm. Stamens longer than petals. Ovary glabrous. Style subequaling stamens, 2-lobed for almost 1/2 its length. Fruit dark red, subglobose, 0.7–0.9 cm, glabrous. Fl. Apr–May, fr. Jun–Jul.

Widely introduced and escaped in N China (precise distribution unknown) [native to SE Europe].

22. *Ribes pubescens* (Swartz ex Hartman) Hedlund, Bot. Not. 1901: 100. 1901.

毛茶沸子 mao cha biao zi

Ribes rubrum Linnaeus var. *pubescens* Swartz ex Hartman, Handb. Skand. Fl. 112. 1820.

Shrubs 1–2 m tall. Branchlets pubescent, later glabrous, unarmed. Buds brown, ovoid to oblong-ovoid, 4–6 mm, pubescent, apex obtuse to acute. Petiole red, 2–5(–7) cm, pubescent; leaf blade suborbicular to reniform-orbicular, 3–6 cm, abaxially densely pubescent, adaxially sparsely so, base shallowly cordate, rarely subtruncate; lobes (3–)5, broadly triangular to ovate-triangular, margin coarsely serrate, with some double teeth; terminal lobe subequaling lateral ones. Racemes erect then nodding, lax, 4–9(–11) cm, 8–22-flowered; rachis and pedicels pubescent or sparsely glandular hairy; bracts broadly ovate to orbicular-ovate, 1–1.5 mm. Flowers bisexual, 4–5 mm in diam.; pedicel 3–5 mm. Calyx green, spotted brown or brownish red, glabrous; tube pelviform, 1–1.5 mm; lobes erect, spatulate-orbicular to obovate-ligulate, 1.5–2.5 mm, margin ciliate. Petals green tinged brown or brownish red, cuneate to subflabellate, 1–1.5 mm. Stamens subequaling petals. Ovary glabrous. Style not longer than stamens, 2-lobed. Fruit red, globose, 0.7–0.9 cm, glabrous.

Thickets on poor dry mountain slopes, bare rocky mountain tops. N Heilongjiang (Da Hinggan Ling), NE Nei Mongol [N Mongolia, Russia; NC Europe].

23. *Ribes latifolium* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1906: 4. 1906.

阔叶茶沸子 kuo ye cha biao zi

Shrubs 1–2 m tall. Branchlets pubescent, usually also sparsely stalked glandular, unarmed. Buds purplish brown, oblong-ovoid, 5–7 mm, pubescent, apex acute. Petiole 5–8 cm, sparsely pubescent and glandular hairy; leaf blade thin, 7–12 × 8–15 cm, glabrous or sparsely puberulent, base cordate; lobes 3–5, triangular to ovate-triangular, margin coarsely and sharply serrate, apex acute to shortly acuminate; terminal lobe equaling or slightly longer than lateral ones. Racemes erect or slightly pendent, 3–6 cm, 6–20-flowered; rachis and pedicels pubescent and sparsely stalked glandular; bracts ovate, 1–1.5 mm, puberulent. Flowers bisexual, 5–7 mm in diam.; pedicel 1.5–3 mm. Calyx dark purple, glabrous or puberulent; tube subcampanulate, 2.5–3.5 mm; lobes erect, spatulate to obovate-oblong, 2–3 mm,

margin ciliate, dentate. Petals subflabellate to subspatulate, 1.5–2 mm. Stamens equaling or slightly longer than petals. Ovary glabrous. Style subequaling stamens, 2-lobed. Fruit red, globose, 0.7–0.9 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

Larix forests and forest margins, roadsides; 1100–1500 m. S Jilin (Changbai Shan) [Japan, Russia].

24. *Ribes himalense* Royle ex Decaisne in Jacquemont, Voy. Inde 4(Bot.): 66. 1844.

糖茶沸子 tang cha biao zi

Shrubs 1–2 m tall. Branchlets glabrous. unarmed. Buds purplish brown, ovoid to oblong, 3–5 mm, glabrous or puberulent at scale margins, apex acute. Petiole red, 3–5 cm, glabrous or minutely pubescent, sparsely glandular hairy or tuberculate near base; leaf blade ovate to suborbicular, 5–10 × 6–10 cm, sparsely glandular hairy or tuberculate on both surfaces, with or without eglandular hairs, base cordate; lobes 3–5, ovate-triangular, margin roughly sharply doubly serrate, also with some simple teeth, apex acute to shortly acuminate; terminal lobe slightly longer than lateral ones. Racemes dense, (2.5–)5–10 cm, 8–20-flowered; rachis and pedicels pubescent or sparsely stalked glandular; bracts ovate, rarely oblong to sublanceolate, 1–2 mm or slightly longer, puberulent. Flowers bisexual, 4–6 mm in diam.; pedicel 1.5–3 mm. Calyx green tinged purple or purplish red, glabrous or puberulent; tube campanulate, 1.5–2 mm; lobes erect, obovate-spatulate to suborbicular, 2–3.5 mm, margin ciliate. Petals red or green tinged purplish, subspatulate to flabellate, 1–1.7 mm, margin ciliate. Stamens inserted level with petals and subequaling them. Ovary glabrous. Style subequaling stamens, apex 2-lobed. Fruit red, turning purplish black after maturity, globose, 0.6–0.7 cm, glabrous. Fl. Apr–Jun, fr. Jul–Aug.

Mixed, coniferous, or broad-leaved forests and forest margins, thickets on mountain slopes, river banks, or in ravines, grasslands on mountain slopes, mountain valleys, stream banks, roadsides; 1200–4100 m. Gansu, Hebei, NW Henan, W Hubei, Nei Mongol, SE Ningxia, Qinghai, Shaanxi, Shanxi, Sichuan, Xizang, NW Yunnan [Bhutan, Kashmir, Nepal, Sikkim].

Five varieties may be recognized in China. *Ribes himalense* var. *salwinense* J. Anthony (Notes Roy. Bot. Gard. Edinburgh 18: 24. 1933), recorded from SE Xizang, NW Yunnan, and N Myanmar, might represent a sixth variety. In the protologue, it was said to differ from var. *himalense* in having leaf blades hairy on both surfaces; however two of the three cited specimens, *Forrest 14957* and *Forrest 14985* (both at E), are densely hairy only abaxially, while the third, *Forrest 24913* (E), seems no hairier than var. *himalense*.

1a. Calyx pubescent 24e. var. *pubicalycinum*

1b. Calyx glabrous.

2a. Petiole and leaf blade densely pubescent and sparsely tuberculate 24d. var. *trichophyllum*

2b. Petiole and leaf blade glabrous, rarely puberulent or sparsely shortly glandular hairy.

3a. Petiole and abaxial leaf blade veins distinctly tuberculate and

sometimes sparsely shortly stalked glandular . 24c. var. *verruculosum*

3b. Petiole and abaxial leaf blade veins not tuberculate.

4a. Branchlets, petiole, leaf blade, and inflorescence usually not stalked glandular, rarely inconspicuously shortly stalked glandular 24a. var. *himalense*

4b. Branchlets, petiole, leaf blade, and inflorescence sparsely or densely shortly stalked glandular 24b. var. *glandulosum*

24a. *Ribes himalense* var. *himalense*

糖茶沸子(原变种) tang cha biao zi (yuan bian zhong)

Ribes emodense Rehder.

Branchlets, petiole, leaf blade, and inflorescence usually not stalked glandular, rarely inconspicuously shortly stalked glandular. Petiole and abaxial leaf blade veins not tuberculate. Calyx glabrous.

Coniferous forests and forest margins, thickets on river banks, mountain valleys; 1200–4000 m. W Hubei, Sichuan, SE Xizang, NW Yunnan [Bhutan, Kashmir, Nepal, Sikkim].

24b. *Ribes himalense* var. *glandulosum* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1910: 69. 1910.

疏腺茶沸子 shu xian cha biao zi

Branchlets, petiole, leaf blade, and inflorescence sparsely or densely shortly stalked glandular. Petiole and abaxial leaf blade veins not tuberculate. Flowers dark purple. Calyx glabrous.

• Coniferous forests, thickets on mountain slopes; 2500–3400 m. SW Shaanxi, W Sichuan.

24c. *Ribes himalense* var. *verruculosum* (Rehder) L. T. Lu in L. T. Lu & S. M. Hwang, Fl. Reipubl. Popularis Sin. 35(1): 306. 1995.

瘤糖茶沸子 liu tang cha biao zi

Ribes emodense var. *verruculosum* Rehder, J. Arnold Arbor. 5: 162. 1924; *R. kansuense* K. S. Hao.

Petiole and abaxial leaf blade veins distinctly tuberculate and sometimes sparsely shortly stalked glandular. Inflorescences 2.5–5 cm. Calyx glabrous.

• Coniferous or broad-leaved forests and forest margins in valleys, thickets on mountain slopes; 1600–4100 m. Gansu, Hebei, NW Henan, Nei Mongol, SE Ningxia, Qinghai, Shaanxi, Shanxi, W Sichuan, E Xizang, NW Yunnan.

24d. *Ribes himalense* var. *trichophyllum* T. C. Ku, Guihaia 9(4): 288. 1989.

异毛茶沸子 yi mao cha biao zi

Petiole and leaf blade densely pubescent and sparsely tuberculate. Calyx glabrous.

• Mixed or coniferous forests in valleys, thickets in ravines, grasslands on mountain slopes, roadsides; 1700–3800 m. E Gansu, NW Hebei, E Qinghai, Shaanxi, NW Shanxi, Sichuan.

24e. *Ribes himalense* var. *pubicalycinum* L. T. Lu & J. T. Pan, Acta Phytotax. Sin. 31: 452. 1993.

毛萼茶沸子 *mao e cha biao zi*

Calyx pubescent.

• Coniferous forests, roadside thickets on mountain slopes, stream banks; 2600–3800 m. W Sichuan, Xizang.

25. *Ribes meyeri* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, Sér. 3, 19: 260. 1874.

天山茶沸子 *tian shan cha biao zi*

Shrubs 1–2 m tall. Branchlets glabrous or slightly puberulent, rarely sparsely shortly stalked glandular, unarmed. Buds brown, ovoid to oblong, 2.5–4.5 mm, glabrous or puberulent, apex acute. Petiole 2.5–5 cm, sparsely glandular hairy near base, rarely with some eglandular hairs; leaf blade suborbicular, 3–7 cm, glabrous or abaxially pubescent, base shallowly cordate, rarely truncate; lobes (3–)5, triangular to ovate-triangular, margin coarsely serrate, apex obtuse or acute; terminal lobe equaling or longer than lateral ones. Racemes nodding, dense, 3–5(–6) cm, 7–17-flowered; rachis and pedicels pubescent or subglabrous; bracts ovate, 1–2 mm, puberulent. Flowers bisexual, 3.5–5(–6) mm in diam.; pedicel 1–2.5 mm. Calyx purple or brownish, dotted purple, glabrous; tube campanulate to shortly cylindrical, 2–3 mm; lobes erect after anthesis, spatulate to obovate, 2.5–3.5 mm, margin ciliate. Petals narrowly cuneate to linear, 1–1.5 mm, margin sometimes slightly ciliate. Stamens inserted slightly below petals and slightly longer than them. Ovary glabrous. Style longer than stamens, apex 2-lobed. Fruit purplish black, globose, 0.7–0.8(–1) cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

Forests and forest margins on mountain slopes, river banks, or in valleys, thickets in valleys or on roadsides, rock crevices in gullies, streamsides; 1200–3900 m. Xinjiang [Mongolia, Russia].

- 1a. Branchlets and leaf blade abaxially glabrous or sparsely pubescent; fruit 0.7–0.8 cm 25a. var. *meyeri*
- 1b. Branchlets and leaf blade abaxially densely pubescent; fruit 0.8–1 cm 25b. var. *pubescens*

25a. *Ribes meyeri* var. *meyeri*

天山茶沸子(原变种) *tian shan cha biao zi* (*yuan bian zhong*)

Grossularia atropurpurea Osten-Sacken & Ruprecht.

Branchlets and leaf blade abaxially glabrous or sparsely pubescent. Fruit 0.7–0.8 cm.

Coniferous forests on river banks, open forests on mountain slopes, thickets on roadsides; 1400–3900 m. Xinjiang [Mongolia, Russia].

25b. *Ribes meyeri* var. *pubescens* L. T. Lu, Acta Phytotax. Sin. 31: 453. 1993.

北疆茶沸子 *bei jiang cha biao zi*

Branchlets and leaf blade abaxially densely pubescent. Fruit 0.8–1 cm.

• Forests and forest margins on slopes or in valleys, thickets in valleys, rock crevices in gullies, streamsides; 1200–2000 m. Xinjiang.

26. *Ribes rubrum* Linnaeus, Sp. Pl. 1: 200. 1753.

红茶沸子 *hong cha biao zi*

Ribes scandicum Hedlund; *R. spicatum* E. Robson; *R. sylvestre* Syme.

Shrubs 1–1.5 m tall. Branchlets glabrous or scattered shortly stalked glandular, unarmed. Buds purplish brown, oblong-ovoid to oblong, 5–7 mm, apex obtuse or acute. Petiole 3–6 cm, sometimes puberulent, glandular hairy near base; leaf blade suborbicular, 3–7 × 4–9 cm, glabrous, rarely puberulent abaxially or sparsely stalked glandular along veins, base cordate, rarely subtruncate; lobes 3–5, broadly ovate-triangular, margin coarsely sharply serrate, apex obtuse to acute; terminal lobe subequaling lateral ones. Racemes erect then nodding, 2–6 cm, 5–15-flowered; rachis and pedicels sparsely shortly stalked glandular; bracts broadly ovate, rarely suborbicular, 1–2 mm, glabrous. Flowers bisexual, 6–8 mm in diam.; pedicel 3–5 mm. Calyx greenish or greenish brown, glabrous; tube pelviform, 1–1.5 mm; lobes erect, spatulate-orbicular, 2–2.5 mm. Petals purplish, subs spatulate to subflabellate, 0.5–1 mm. Stamens equaling or longer than petals. Ovary glabrous. Style equaling or longer than stamens, 2-lobed. Fruit red, globose, rarely ellipsoid, 0.8–1.1 cm in diam., glabrous. Fl. May–Jun, fr. Jul–Aug.

NE China (precise distribution unknown) [N Asia; Europe].

This species is cultivated as an ornamental in cold regions and is also used for making fruit drinks and wine.

27. *Ribes longiracemosum* Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 8: 238. 1886.

长序茶沸子 *chang xu cha biao zi*

Shrubs 2–3 m tall. Branchlets stout, glabrous, sometimes glandular hairy, unarmed. Buds brown, ovoid to oblong, 4–6 mm, glabrous, apex obtuse or acute. Petiole 4.5–8(–10) cm, glabrous or sparsely puberulent when young, sometimes glandular hairy near base; leaf blade ovate, 5–12 cm, glabrous or slightly pubescent at vein axils at base abaxially, rarely pubescent on both surfaces, base deeply cordate; lobes 3(–5), ovate to triangular-ovate, margin irregularly coarsely serrate, sometimes also with sparse, double teeth; terminal lobe longer than lateral ones. Racemes pendulous, lax, 15–35(–40) cm, 15–20(–25)-flowered; rachis and pedicels puberulent; bracts suborbicular or ovate to ovate-lanceolate, rarely oblong, (1.5–)3–7 mm, glabrous or puberulent. Flowers bisexual, 5–6 mm in diam.; pedicel 3–10(–15) mm. Calyx green tinged purple, glabrous, rarely pubescent; tube tinged red,

campanulate to shortly cylindric, 4–6 mm; lobes erect, green, oblong to subligulate, 2–3 mm. Petals subflabellate, ca. 1/2 as long as calyx lobes. Stamens inserted below petals, longer than calyx lobes and exerted; anthers white. Ovary glabrous, rarely pubescent. Style slightly longer than stamens, entire or stigma 2-lobed. Fruit black, globose, 0.7–0.9 cm, glabrous or sparsely pubescent. Fl. Apr–May, fr. Jun–Aug.

• Forests or thickets on mountain slopes or in valleys, mixed forests in gullies; 1100–3800 m. SE Gansu, W Hubei, E Shaanxi, Sichuan, Yunnan.

- 1a. Leaf blade pubescent.
 - 2a. Leaf blade, calyx, and fruit pubescent 27d. var. *pilosum*
 - 2b. Leaf blade sparsely to densely pubescent abaxially; calyx and fruit glabrous 27c. var. *dauidii*
- 1b. Leaf blade glabrous, rarely slightly pubescent at vein axils at base abaxially.
 - 3a. Racemes to 35 cm, pedicels 10–15 mm; branchlets and abaxial leaf blade veins usually shortly glandular hairy .. 27b. var. *gracillimum*
 - 3b. Racemes 15–25(–30) cm, pedicels 4–10 mm; branchlets and abaxial leaf blade veins usually not shortly glandular hairy 27a. var. *longiracemosum*

27a. *Ribes longiracemosum* var. *longiracemosum*
长序茶沸子(原变种) chang xu cha biao zi (yuan bian zhong)

Ribes longiracemosum var. *wilsonii* Janczewski.
Branchlets and abaxial leaf blade veins usually not shortly glandular hairy. Racemes 15–25(–30) cm; pedicels 4–10 mm.

• Forests or thickets on mountain slopes or in valleys, mixed forests in gullies; 1700–3800 m. W Hubei, Sichuan, Yunnan.

27b. *Ribes longiracemosum* var. *gracillimum* L. T. Lu, Acta Phytotax. Sin. 31: 452. 1993.

纤细茶沸子 xian xi cha biao zi
Ribes gracillimum K. S. Hao, Repert. Spec. Nov. Regni Veg. 40: 214. 1936, not Coville & Britton (1908); *R. haoi* C. Y. Yang & Han.
Branchlets and abaxial leaf blade veins usually shortly glandular hairy. Racemes slender, to 35 cm; pedicels 10–15 mm.

• Forests in mountain valleys, thickets on mountain slopes; 2300–2700 m. SE Gansu, E Shaanxi (Xigu).

27c. *Ribes longiracemosum* var. *dauidii* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1910: 71. 1910.

腺毛茶沸子 xian mao cha biao zi
Leaf blade sparsely to densely pubescent abaxially. Racemes to 40 cm. Calyx and fruit glabrous.

• Mixed forests, shady thickets on mountain slopes, gullies; 1100–3400 m. W Sichuan, Yunnan.

27d. *Ribes longiracemosum* var. *pilosum* T. C. Ku, Guihaia 9(4): 288. 1989.

毛长串茶沸子 mao chang chuan cha biao zi
Leaf blade, calyx, and fruit pubescent.

• Coniferous forests on mountain slopes; below 2800 m. NW Yunnan.

28. *Ribes moupinense* Franchet, Nouv. Arch. Mus. Hist. Nat., sér. 2, 8: 238. 1886.

宝兴茶沸子 bao xing cha biao zi
Shrubs 2–3(–5) m tall. Branchlets dark purplish brown to brown, glabrous, unarmed. Buds brown, ovoid to oblong, 4–5 × 2–3 mm, glabrous, apex obtuse. Petiole 3–9 cm, puberulent, sparsely glandular hairy near base; leaf blade ovate to broadly triangular-ovate, 5–9 cm, abaxially pubescent or minutely stalked glandular along veins and at vein axils, adaxially glabrous or sparsely coarsely glandular hairy, base cordate or deeply so, rarely subtruncate; lobes 3–5, narrowly ovate to narrowly triangular, margin irregularly sharply serrate or doubly serrate, apex acute to long acuminate; terminal lobe subequaling or longer than lateral ones. Racemes nodding, dense, 5–10(–12) cm, 9–25-flowered; rachis pubescent; bracts narrowly ovate to lanceolate-ovate or broadly ovate to suborbicular, 1.5–4 mm, glabrous or margin sparsely ciliate. Flowers bisexual, 4–6 mm in diam.; pedicel usually short or absent. Calyx green tinged red, glabrous; tube campanulate, 2.5–4 mm; lobes not incurved, ovate to ligulate, 2–3.5 mm, margin not ciliate. Petals obtriangular-flabellate, 1–1.8 mm. Stamens inserted level with petals and subequaling them; anthers globose. Ovary glabrous, rarely pubescent. Style not equaling stamens, apex 2-lobed. Fruit black, globose, 0.5–0.7 cm, glabrous, rarely pubescent. Fl. May–Jun, fr. Jul–Aug.

• Coniferous or mixed forests and forest margins on mountain slopes and in valleys, thickets, rocky and high mountain slopes; 1400–4700 m. SW Anhui, Gansu, NE Guizhou, W Hubei, Shaanxi, Sichuan, Yunnan.

1a. Ovary and fruit pubescent 28d. var. *pubicarpum*

1b. Ovary and fruit glabrous.

2a. Leaf blade lobed less than halfway to base, lobes narrowly triangular to narrowly triangular-ovate; fruiting pedicel very short or absent 28a. var. *moupinense*

2b. Leaf blade lobed more than halfway to base, lobes broadly or narrowly ovate-lanceolate to narrowly triangular-ovate; fruiting pedicel very short or 5–8 mm

3a. Leaf lobes 3, narrowly ovate-lanceolate to narrowly triangular-ovate; fruiting pedicel very short 28b. var. *tripartitum*

3b. Leaf lobes 5, broadly ovate-lanceolate; fruiting pedicel 5–8 mm 28c. var. *muliense*

28a. *Ribes moupinense* var. *moupinense*

宝兴茶沸子(原变种) *bao xing cha biao zi* (*yuan bian zhong*)

Leaf blade lobed less than halfway to base; lobes narrowly triangular to narrowly triangular-ovate; terminal lobe longer than lateral ones. Ovary and fruit glabrous. Fruiting pedicel very short or absent.

• Mixed forests on mountain slopes, forests in valleys, rocky slopes; 1400–4700 m. SW Anhui, Gansu, NE Guizhou, W Hubei, Shaanxi, Sichuan, Yunnan.

28b. *Ribes moupinense* var. *tripartitum* (Batalin) Janczewski, *Mém. Soc. Phys. Hist. Nat. Genève* 35. 3: 300. 1907.

三裂茶沸子 *san lie cha biao zi*

Ribes tripartitum Batalin, *Trudy Imp. S.-Peterburgsk. Bot. Sada* 11: 488. 1890.

Leaf blade lobed more than halfway to base, base deeply cordate; lobes 3, narrowly ovate-lanceolate to narrowly triangular-ovate; terminal lobe subequaling lateral ones, apex long acuminate. Ovary and fruit glabrous. Fruiting pedicel very short.

• Coniferous or mixed forests and forest margins in mountain valleys, thickets, rocky slopes; 1500–2900 m. E Gansu, W Hubei, Sichuan, NW Yunnan.

28c. *Ribes moupinense* var. *muliense* S. H. Yu & J. M. Xu, *Acta Phytotax. Sin.* 28: 327. 1990.

木里茶沸子 *mu li cha biao zi*

Petiole long; leaf blade lobed more than halfway to base; lobes 5, broadly ovate-lanceolate, margin sharply serrate. Ovary and fruit glabrous. Fruiting pedicel 5–8 mm.

• High mountain slopes; ca. 4700 m. SW Sichuan (Muli Zang Zu Zizhixian).

28d. *Ribes moupinense* var. *pubicarpum* L. T. Lu, *Acta Phytotax. Sin.* 31: 452. 1993.

毛果茶沸子 *mao guo cha biao zi*

Ovary and fruit pubescent.

• Coniferous forest margins on rocky slopes; ca. 3500 m. NW Yunnan (Zhongdian Xian).

29. *Ribes setchuense* Janczewski, *Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math.* 1906: 3. 1906.

四川茶沸子 *si chuan cha biao zi*

Shrubs 1.5–2 m tall. Branchlets robust, pubescent, unarmed. Buds dark brown, oblong-ovoid to oblong, 4–6 mm, puberulent, apex acute. Petiole 4–7 cm, pubescent; leaf blade ovate to broadly triangular-ovate, 4.5–8 × 5–9 cm, abaxially pubescent, gradually glabrescent, sometimes sparsely glandular hairy, adaxially densely pubescent, base cordate; lobes 3(–5), narrowly triangular-ovate, margin irregularly coarsely sharply serrate; terminal lobe subequaling or longer than lateral ones. Racemes pendulous, dense, 5–10 cm, 15–30(–50)-flowered; rachis pubescent; bracts ovate to orbicular, 1–2 mm, puberulent. Flowers bisexual, 4–5 mm in diam.; pedicel very short or absent. Calyx greenish, glabrous; tube campanulate, 2–3 mm; lobes erect, incurved apically, ligulate, 2–2.5 mm, margin not

ciliate, apex acute. Petals obtriangular-flabellate, 1.2–1.7 mm. Stamens inserted below petals and not longer than them; anthers yellowish white, subglobose. Ovary glabrous. Style not longer than stamens, apex 2-lobed. Fruit sessile, red, globose, 0.5–0.7 cm, glabrous. Fl. Apr–May, fr. Jun–Jul.

• Mixed forests on shady slopes, coniferous forests or thickets in ravines, grasslands; 2100–3100 m. SE Gansu, Sichuan.

30. *Ribes fasciculatum* Siebold & Zuccarini, *Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss.* 4(2): 189. 1845.

簇花茶沸子 *cu hua cha biao zi*

Shrubs deciduous, though in leaf for most of year, dioecious, to 1.5 m tall, most parts glabrous or pubescent. Branchlets unarmed. Buds brownish, ovoid to oblong-ovoid, 2–5 mm, glabrous, apex acute. Petiole 1–3 cm, rarely glabrous; leaf blade suborbicular, (2–)3–4(–8) × (2.5–)3.5–5(–10) cm, base truncate to shallowly cordate; lobes 3–5, broadly ovate, margin coarsely obtusely serrate, apex obtuse or acute; terminal lobe subequaling or slightly longer than lateral ones. Flowers fragrant, male ones 2–9 in umbels, female ones 2–4(–6) in fascicles, rarely solitary; bracts oblong, 5–8 mm, puberulent, 1-veined, caducous; pedicel (3–)5–9 mm. Calyx yellowish green, glabrous; tube cupular, 2–3 mm; lobes reflexed at anthesis, ovate to ligulate, 2–4 mm. Petals suborbicular to flabellate, 1.5–2 mm. Stamens longer than petals. Ovary pyriform. Fruit reddish brown, subglobose, 0.7–1 cm. Fl. Apr–May, fr. Jul–Sep.

Forests and forest margins, bamboo woods, foothills, stony slopes, roadsides; 700–2400 m. Anhui, E Gansu, NW Guizhou, W Henan, NW Hubei, Jiangsu, N Jiangxi, Shaanxi, NE Shandong, N Zhejiang [Japan, Korea].

1a. Branchlets and leaf blade glabrous or sparsely pubescent when young, later subglabrous 30a. var. *fasciculatum*

1b. Branchlets and leaf blade densely pubescent.

2a. Ovary and fruit glabrous; leaf blade to 10 cm 30b. var. *chinense*

2b. Ovary and fruit pubescent when young, later subglabrous; leaf blade to 6 cm 30c. var. *guizhouense*

30a. *Ribes fasciculatum* var. *fasciculatum*

簇花茶沸子(原变种) *cu hua cha biao zi* (*yuan bian zhong*)

Branchlets and leaf blade glabrous or sparsely pubescent when young, later subglabrous. Ovary and fruit glabrous.

Mixed forests on slopes, bamboo woods, roadsides; low altitudes. Anhui, SW Jiangsu, N Zhejiang [Japan, Korea].

30b. *Ribes fasciculatum* var. *chinense* Maximowicz, *Bull. Acad. Imp. Sci. Saint-Petersbourg, Sér.* 3, 19: 264. 1874.

华蔓茶沸子 *hua man cha biao zi*

Ribes billiardii Carrière; *R. chifuense* Hance.

Branchlets and leaf blade densely pubescent. Leaf blade to 10 cm. Ovary and fruit glabrous.

Forests, forest margins, stony slopes; 700–1300 m. SE Anhui, E Gansu, W Henan, NW Hubei, Jiangsu, N Jiangxi, Shaanxi, NE Shandong, N Zhejiang [Japan, Korea].

30c. *Ribes fasciculatum* var. **guizhouense** L. T. Lu, Acta Phytotax. Sin. 31: 462. 1993.

贵州茶沸子 *gui zhou cha biao zi*

Branchlets and leaf blade densely pubescent. Leaf blade to 6 cm. Ovary and fruit pubescent when young, later subglabrous.

• Foothills; ca. 2400 m. NW Guizhou.

31. *Ribes tianquanense* S. H. Yu & J. M. Xu, Acta Phytotax. Sin. 28: 325. 1990.

天全茶沸子 *tian quan cha biao zi*

Shrubs evergreen, dioecious, 0.4–1(–2) m tall.

Branchlets glandular bristly, unarmed. Buds brownish, oblong-ovoid to ovoid, 7–9 mm, glabrous, apex acute. Leaves 2–4-clustered at branchlet apex; petiole stout, 3–8 mm, glandular bristly; leaf blade narrowly elliptic to sub lanceolate, rarely broadly elliptic, 5–13 × 1.5–4.5 cm, leathery, glabrous or abaxially glandular bristly along midvein and at margin, 3-veined, base cuneate, margin unlobed, irregularly serrate, apex acute to acuminate. Male racemes 4–7 cm, 5–11-flowered, female ones almost as long, to 5 cm in fruit, 5–7-fruited; rachis and pedicels purple, pubescent or glandular hairy; bracts elliptic, 9–14 mm, 1-veined, margin ciliate. Pedicel 3–7 mm. Calyx purplish green, glabrous; tube pelviform, 2–3 mm; lobes ovate to suborbicular, 2.5–3.5 mm. Petals cuneate-spatulate to subflabellate, ca. 1.5 mm. Stamens not equaling or subequaling petals. Ovary pubescent. Stigma 2-lobed. Fruit green, ellipsoid to oblong, 1–1.5 × 0.8–0.9 cm, pubescent. Fl. May–Jun, fr. Jul–Aug.

• Forests, rocks on grassy slopes; 1400–2200 m. W Sichuan.

32. *Ribes henryi* Franchet, Bull. Soc. Linn. Paris 1898: 87. 1898.

华中茶沸子 *hua zhong cha biao zi*

Shrubs evergreen, dioecious, 0.3–1 m tall. Branchlets densely glandular bristly, unarmed. Buds oblong-ovoid, 4–6 mm, apex acute to shortly acuminate; scales brown, slightly glandular hairy. Leaves 2- or 3-clustered at branchlet apex; petiole 5–8 mm, densely glandular bristly; leaf blade elliptic to obovate-elliptic, 5–10 × 2.5–5.5(–7) cm, somewhat leathery, abaxially usually glandular, glandular hairy along veins, base cuneate, margin unlobed, remotely minutely serrate, ciliate, apex acute. Male racemes 2–5 cm, usually 5–10-flowered, female ones shorter, 3–5-flowered, 1–3 cm in fruit, 1–3-fruited; rachis and pedicels densely glandular hairy and sparsely pubescent; bracts greenish or yellowish green, elliptic to lanceolate, 6–11 × 2.5–5 mm, 1-veined, margin ciliate. Pedicel 4–6 mm. Calyx greenish white stalked glandular; tube pelviform, 2–3 mm; lobes broadly ovate, rarely suborbicular, 2–3.5 mm. Petals cuneate-spatulate to subflabellate, about 1/3 as long as

calyx lobes. Stamens not equaling petals. Ovary obovoid-oblong, densely stalked glandular. Style 2-lobed. Fruit green, obovoid-oblong, 1.5–2 × ca. 1 cm, glandular hairy. Fl. May–Jun, fr. Jul–Aug.

• Forests on mountain slopes, rocks; ca. 2300 m. Hubei, W Sichuan.

33. *Ribes hunanense* C. Y. Yang & C. J. Qi, Bull. Bot. Res., Harbin 5(1): 177. 1985.

湖南茶沸子 *hu nan cha biao zi*

Ribes guangxiense C. Z. Gao

Shrubs semievergreen, epiphytic, dioecious, 0.6–1.5 m tall. Branchlets glabrous, unarmed. Buds purple, oblong-ovoid, 7–10 mm, glabrous. Leaves 2–4-clustered at branchlet apex; petiole purple, 1–4 cm, glabrous; leaf blade suborbicular to reniform-orbicular, 2.5–7 cm, somewhat leathery, glabrous, 5-veined, base rounded or truncate to shallowly cordate, margin unlobed, undulate, or sharply 5–7-lobed; lobes (or leaf blade) irregularly obtusely dentate at margin, apex obtuse. Male racemes 4–7 cm, 10–45-flowered, female ones 4–5 cm, 10–15-flowered; rachis puberulent, sometimes sparsely shortly stalked glandular; bracts oblong to elliptic, 8–12 mm, 1-veined, margin ciliate. Pedicel 5–7 mm, glabrous. Calyx purplish or greenish purple, glabrous; tube campanulate, 3–4 mm; lobes oblong, 3–4.5 mm. Petals cuneate-spatulate, 1.5–2 mm. Stamens subequaling petals. Ovary subglobose, glabrous. Style 2–3 mm, 2-lobed. Fruit subglobose to ellipsoid, 0.5–0.6 cm in diam. (immature), glabrous. Fl. Apr–May, fr. Jun–Jul.

• Forests and valleys in mountain regions; 1000–2500 m. NE Guangxi, SW Hunan (Tongdao Dong Zu Zizhixian, Xinning Xian).

34. *Ribes davidii* Franchet, Pl. David. 2: 58. 1888.

革叶茶沸子 *ge ye cha biao zi*

Shrubs evergreen, dioecious, 0.3–1 m tall. Branchlets spreading, glabrous, unarmed. Buds ovoid to oblong-ovoid, 3–6 mm, apex acute to shortly acuminate; scales herbaceous, glabrous. Leaves 2–5-clustered at branchlet apex; petiole 0.5–1.5 cm, glandular hairy; leaf blade obovate-elliptic to broadly elliptic, 2–5 × 1.5–3 cm, leathery, glabrous, prominently 3-veined, base cuneate, margin unlobed or 3-lobed; lobes (or leaf blade) coarsely crenate-dentate at distal margin, apex obtuse or acute. Male racemes erect, 2–4(–6) cm, 5–18-flowered, female ones often axillary, 2–3 cm, 2–3(–7) flowered; rachis and pedicels pubescent and stalked glandular, glabrescent; bracts elliptic to broadly so, 7–9 mm, glabrous or margin sparsely ciliate, 1-veined. Calyx greenish white or yellowish green, glabrous; tube pelviform, 2–4 mm; lobes broadly ovate to obovate-oblong, 2.5–4 mm. Petals cuneate-spatulate to obovate, ca. 1/2 as long as calyx lobes. Stamens subequaling petals. Ovary glabrous. Style 2-lobed. Fruit purple, ellipsoid, rarely subglobose, 0.8–1.1 × 0.6–0.8 cm, glabrous. Fl. Apr–May, fr. Jun–Jul.

• Deciduous and mixed forests, ravine forests, shady and moist places on mountain slopes, cliffs, rocks, roadsides; 900–2700 m. N Guizhou, SW Hubei, SW Hunan, Sichuan, NW Yunnan.

- 1a. Leaf blade base broadly cuneate, margin 3-lobed 34c. var. *lobatum*
1b. Leaf blade base cuneate to narrowly so, margin unlobed.
2a. Leaf blade margin long ciliate 34b. var. *ciliatum*
2b. Leaf blade margin not ciliate . 34a. var. *davidii*

34a. *Ribes davidii* var. *davidii*

革叶茶沸子(原变种) *ge ye cha biao zi* (*yuan bian zhong*)

Ribes pachysandroides Oliver.

Leaf blade base cuneate to narrowly so, margin unlobed, not ciliate.

• Shady and moist places on mountain slopes, cliffs, rocks, roadsides; 900–2700 m. N Guizhou, SW Hubei (Hefeng Tujia Zu Zizhixian), SW Hunan (Xinning Xian), Sichuan, NW Yunnan (Gongshan Drung-Nu Zu Zizhixian).

34b. *Ribes davidii* var. *ciliatum* L. T. Lu, Acta Phytotax. Sin. 31: 453. 1993.

睫毛茶沸子 *jie mao cha biao zi*

Leaf blade base cuneate to narrowly so, margin unlobed, long ciliate.

• Deciduous and mixed forests, rocks, roadsides; 1900–2300 m. W Sichuan.

34c. *Ribes davidii* var. *lobatum* L. T. Lu, Acta Phytotax. Sin. 31: 454. 1993.

浅裂茶沸子 *qian lie cha biao zi*

Leaf blade base broadly cuneate, margin 3-lobed, not ciliate.

• Ravine forests; below 2600 m. W Sichuan.

35. *Ribes laurifolium* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1910: 79. 1910.

桂叶茶沸子 *gui ye cha biao zi*

Shrubs evergreen, dioecious, much branched, usually climbing on trees, rarely small trees to 1.5 m tall. Branchlets smooth, glabrous, unarmed. Buds ovoid to narrowly so, apex acute to shortly acuminate; scales brown, ovate, glabrous or margin ciliate. Leaves 2–4-clustered at branchlet apex; petiole robust, 7–18 mm, remotely glandular hairy; leaf blade ovate to ovate-oblong or elliptic, 5–10 × 2.5–4.5 cm, leathery, glabrous, 3–5-veined, base broadly cuneate to rounded, margin unlobed, coarsely sharply serrate, apex acute. Male racemes pendulous, 3–6 cm, up to 12-flowered, female ones erect, nodding in fruit, 2–3 cm; rachis pubescent and often shortly stalked glandular; bracts greenish, oblong, 10–12 mm, 1-veined, margin sparsely glandular hairy. Male flowers 10–12 mm in diam., female ones 6–8 mm in diam.; pedicel 3–7 mm, pubescent or glabrous. Calyx yellowish green, pubescent or glabrous; tube cupular; lobes broadly oblong to suborbicular, ca. 4 mm. Petals cuneate-spatulate, ca. 2 mm. Stamens subequaling petals. Ovary oblong, pubescent or glabrous. Style 2-lobed. Fruit purple, ellipsoid to oblong, 1.5–2 × 0.7–1 cm, pubescent or glabrous. Fl. Apr–Jun, fr. Aug–Oct.

• Forests, slopes, river banks, rocks; 2100–3600 m. Guizhou, W Sichuan, Yunnan.

1a. Pedicels, calyx, and fruit pubescent 35a. var. *laurifolium*

1b. Pedicels, calyx, and fruit glabrous 35b. var. *yunnanense*

35a. *Ribes laurifolium* var. *laurifolium*

桂叶茶沸子(原变种) *gui ye cha biao zi* (*yuan bian zhong*)

Cavaleria enkianthoidea H. Léveillé.

Pedicels, calyx, and fruit pubescent.

• Forests, slopes, river banks; below 2500 m. Guizhou, W Sichuan, Yunnan.

35b. *Ribes laurifolium* var. *yunnanense* L. T. Lu, Acta Phytotax. Sin. 31: 454. 1993.

光果茶沸子 *guang guo cha biao zi*

Pedicels, calyx, and fruit glabrous.

• Forests, rocks; 2100–3600 m. Yunnan.

36. *Ribes giraldii* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1906: 289. 1906.

陕西茶沸子 *shan xi cha biao zi*

Shrubs dioecious, 2–3 m tall, most parts pubescent and stalked glandular. Branchlets pubescent and glandular hairy; nodal spines 2, rigid, sometimes absent; internodes unarmed or with sparse, slender spines. Buds grayish yellow, oblong, small, apex acute; scales puberulent at margin. Petiole 0.8–2 cm, pubescent and glandular hairy; leaf blade broadly ovate, rarely suborbicular, 1.5–3 cm, base subtruncate to shallowly cordate, sometimes cuneate; lobes 3–5, margin coarsely obtusely dentate and glandular hairy, apex obtuse; terminal lobe rhombic to rhombic-ovate, longer than lateral ones. Male racemes erect, lax, 3–7 cm, 8–20(–25)-flowered, female ones 2–3 cm, 2–6-flowered; bracts lanceolate to oblong, equaling or longer than pedicels. Calyx yellowish green, sometimes not stalked glandular; tube shallowly cupular to saucer-shaped, 2–3 × 3–4.5 mm; lobes spreading at anthesis, reflexed in fruit, obovate-elliptic to ligulate, 3–4 mm. Petals obovate to subligulate, 1–1.5 mm. Stamens subequaling petals. Ovary sometimes not stalked glandular. Style slightly longer than stamens, apex 2-lobed. Fruit red, globose, 0.6–0.8 cm, pubescent, later glabrescent, stalked glandular or not. Fl. Apr–May, fr. Jun–Sep.

• Forests on seashores, thickets on slopes, ravines, ditch banks, roadsides; sea level to medium altitudes. E Gansu, Liaoning, Shaanxi, SW Shanxi.

1a. Leaf blade base subtruncate to shallowly cordate; fruit stalked glandular 36a. var. *giraldii*

1b. Leaf blade base cuneate to subtruncate; fruit not stalked glandular.

- 2a. Leaf blade base broadly cuneate to subtruncate; male racemes usually 10–25-flowered . 36b. var. *polyanthum*
2b. Leaf blade base cuneate; male racemes 8–10-flowered 36c. var. *cuneatum*

36a. *Ribes giraldii* var. *giraldii*

陕西茶沸子(原变种) shan xi cha biao zi (yuan bian zhong)

Leaf blade base subtruncate to shallowly cordate. Fruit stalked glandular.

• Thickets on slopes, ravines, roadsides; low to medium altitudes. E Gansu, Shaanxi, SW Shanxi.

36b. *Ribes giraldii* var. *polyanthum* Kitagawa, Bot. Mag. (Tokyo) 49: 226. 1935.

旅顺茶沸子 lu shun cha biao zi

Leaf blade base broadly cuneate to subtruncate. Male racemes usually 10–25-flowered. Fruit not stalked glandular.

• Ditch banks, roadsides; 100–200 m. Liaoning.

36c. *Ribes giraldii* var. *cuneatum* Wang & Li in Liou, Ill. Fl. Lign. Pl. N. E. China, 562. 1955.

滨海茶沸子 bin hai cha biao zi

Leaf blade base cuneate. Male racemes 8–10-flowered. Fruit not stalked glandular.

• Forests on seashores. S Liaoning (Dalian Shi).

37. *Ribes pulchellum* Turczaninow, Bull. Soc. Imp. Naturalistes Moscou 5: 191. 1832.

美丽茶沸子 mei li cha biao zi

Shrubs dioecious, 1–2.5 m tall. Branchlets pubescent, later glabrescent; nodal spines 2; internodes unarmed or with sparse, slender spines. Buds brown, ovoid, 3–4 mm, pubescent when young, apex obtuse or acute. Petiole (0.5–)1–2 cm, pubescent, sometimes also shortly stalked glandular, rarely subglabrous; leaf blade broadly ovate, (1–)1.5–3 cm, pubescent, rarely subglabrous, base broadly cuneate or subtruncate to shallowly cordate; lobes 3(–5), margin coarsely obtusely or acutely serrate, sometimes also with double teeth. Male racemes lax, 5–7 cm, 8–20-flowered, female ones dense, 2–3 cm, 8–10 flowered or more; rachis and pedicels pubescent or subglabrous, sparsely shortly glandular hairy; bracts lanceolate to narrowly oblong, 3–4 mm, sparsely pubescent or shortly glandular hairy, 1-veined. Pedicel 2–4 mm. Calyx greenish yellow to pinkish brown, glabrous or subglabrous; tube saucer-shaped, 1.5–2 mm; lobes broadly ovate, 1.5–2 mm, longer than petals. Petals scalelike, 1–1.5 mm. Stamens longer than petals. Ovary subglobose, glabrous. Style 2-lobed at apex. Fruit red, globose, 0.5–0.8 cm, glabrous. Fl. May–Jun, fr. Aug–Sep.

Forests in ravines, thickets on open slopes, hills, ravines, rocky slopes; 300–3800 m. Gansu, Hebei, Nei Mongol, N Ningxia, E Qinghai, W Shaanxi, Shanxi [NE Mongolia, Russia (Siberia)].

- 1a. Petiole, leaf blade, and inflorescence pubescent; leaf blade base subtruncate to shallowly cordate 37a. var. *pulchellum*

- 1b. Petiole, leaf blade, and inflorescence subglabrous; leaf blade base broadly cuneate 37b. var. *manshuriense*

37a. *Ribes pulchellum* var. *pulchellum*

美丽茶沸子(原变种) mei li cha biao zi (yuan bian zhong)

Petiole pubescent; leaf blade pubescent, base subtruncate to shallowly cordate. Inflorescences pubescent.

Rocky slopes, hills, thickets on open slopes, ravines; 300–3800 m. Gansu, Hebei, Nei Mongol, N Ningxia (Yinchuan Shi), E Qinghai, W Shaanxi, Shanxi [NE Mongolia, Russia (Siberia)].

37b. *Ribes pulchellum* var. *manshuriense* Wang & Li in Liou, Ill. Fl. Lign. Pl. N. E. China, 562. 1955.

东北小叶茶沸子 dong bei xiao ye cha biao zi

Petiole subglabrous; leaf blade subglabrous, base broadly cuneate. Inflorescences subglabrous.

• Forests in ravines. N Nei Mongol (Manzhouli Shi).

38. *Ribes saxatile* Pallas, Nova Acta Acad. Sci. Imp. Petrop. Hist. Acad. 10: 376. 1797.

石生茶沸子 shi sheng cha biao zi

Ribes cuneatum Karelin & Kirilov.

Shrubs dioecious, 0.5–1 m tall. Branchlets glabrous or puberulent; nodal spines 2, small; internodes unarmed or with sparse, needlelike spines. Buds narrowly ovoid, 3–5 mm, puberulent then glabrescent, apex acute. Petiole 1–2 cm, glabrous; leaf blade obovate, 1–2.5 cm, puberulent only at margin when old and sometimes also abaxially, base cuneate; lobes 3, distal, margin coarsely obtusely dentate, apex obtuse or acute; terminal lobe slightly longer than lateral ones. Male racemes erect, 3–6 cm, female ones 3–5 cm, 10-flowered or more; rachis and pedicels pubescent then glabrescent; bracts oblong to ligulate, 4–6 mm, 1-veined, margin puberulent. Pedicel 2–3 mm. Calyx greenish, glabrous; tube pelviform to shallowly cupular, 1.5–2 mm; lobes reflexed, ligulate to obovate, 2–3 mm. Petals flabellate, smaller than calyx lobes. Stamens subequalling petals. Ovary glabrous. Style 2-lobed. Fruit dark red, globose, 0.5–0.7 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

Thickets on dry slopes, stony slopes; low altitudes. N Xinjiang [Russia].

39. *Ribes glabrifolium* L. T. Lu, Acta Phytotax. Sin. 31: 460. 1993.

光叶茶沸子 guang ye cha biao zi

Shrubs dioecious, 1–2 m tall. Branchlets pubescent; nodal spines 2, small; internodes usually unarmed. Buds brown, ovoid to narrowly so, 3–5 mm, glabrous or puberulent, apex acute. Petiole 0.5–1 cm, glabrous; leaf blade rhombic-ovate to suborbicular, 1–1.5 cm, thick, glabrous, base broadly cuneate to subrounded; lobes 3, margin irregularly obtusely dentate, apex obtuse or

acute; terminal lobe longer than lateral ones. Male racemes 2.5–4 cm, 7–11-flowered, female ones slightly shorter, to 4 cm in fruit; rachis and pedicels pubescent, sometimes also sparsely shortly stalked glandular; bracts oblong, glabrous, caducous. Pedicel 2–4 mm. Calyx yellow to yellowish green, glabrous; tube shallowly cupular, 1.5–2 mm; lobes spreading or reflexed, broadly ovate, 2–3 mm. Petals flabellate to obovate, smaller than calyx lobes. Stamens somewhat longer than petals. Ovary glabrous. Style 2-lobed at apex. Fruit red, globose, 0.5–0.7 cm, glabrous. Fl. May–Jun, fr. Jul–Sep.

• Thickets along roadsides, mountain valleys, river banks; below 900 m. W Hubei, S Shaanxi.

40. *Ribes diacanthum* Pallas, Reise Russ. Reich. 3: 722. 1776.

双刺茶沸子 *shuang ci cha biao zi*

Shrubs dioecious, 1–2(–3) m tall. Branchlets slightly angled, glabrous; nodal spines 2, 3–5 mm; internodes unarmed or with sparse, slender prickles. Buds brownish, ovoid, 3–5 mm, glabrous, apex acute. Petiole 1–2 cm, glabrous, rarely sparsely puberulent; leaf blade obovate to rhombic-obovate, 1.5–3.5 × 1–3 cm, glabrous, base cuneate; lobes 3, margin deeply serrate, apex obtuse or acute. Male racemes nodding, 3–6 cm, 10–20-flowered, female ones 1–2.5 cm, 10–15-flowered; rachis and pedicels sparsely shortly glandular hairy; bracts lanceolate to ligulate, 4–6 mm, glabrous, 1-veined. Pedicel 2–4 mm. Calyx yellowish green, glabrous; tube rotate to saucer-shaped, 1–1.5 mm; lobes erect, ovate, rarely elliptic, 1.5–2 mm. Petals cuneate-orbicular, 0.5–1 mm. Stamens subequaling petals. Ovary subglobose, glabrous. Style 2-lobed at apex. Fruit red to reddish black, globose to ovoid-globose, 0.5–0.9 cm in diam., glabrous. Fl. May–Jun, fr. Aug–Sep.

Sandy hilly areas, sandy grasslands, river banks; below 1500 m. N Heilongjiang (Da Hinggan Ling), E Jilin, Nei Mongol [N Korea, NE Mongolia, Russia (Siberia)].

41. *Ribes heterotrichum* Meyer in Ledebour, Fl. Altaic. 1: 270. 1829.

圆叶茶沸子 *yuan ye cha biao zi*

Ribes orientale Desfontaines var. *heterotrichum* (Meyer) Janczewski.

Shrubs dioecious, 1–1.5 m tall. Branchlets stout, angled, puberulent then glabrescent, unarmed. Buds ovoid-lanceolate to oblong, 4–5 mm, apex acute; scales brown, 1-veined, margin sparsely shortly glandular hairy. Petiole 5–10 mm, puberulent; leaf blade suborbicular, 1–3 cm, glabrous or margin ciliate, rarely sparsely viscid glandular, base broadly cuneate to truncate; lobes 3(–5), margin coarsely obtusely dentate, apex obtuse or acute; terminal lobe subequaling lateral ones. Racemes erect, male ones 2–5 cm, female ones 2–3 cm, 6–10-

flowered; rachis and pedicels pubescent, sometimes sparsely shortly stalked glandular; bracts ovate-lanceolate to oblong, 4–5 mm, 1-veined, margin sparsely glandular hairy. Pedicel 2–3 mm. Calyx purple or brownish red, glabrous or puberulent; tube shallowly cupular, 1.5–2.2 mm; lobes erect, ovate, 2–2.5 mm. Petals subflabellate. Stamens slightly longer than petals. Ovary glabrous. Style 2-lobed. Fruit red or red-yellow, sweet tasting, globose, 0.4–0.6 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

Thickets on rocky mountain slopes, ravines, streamsides; 1200–2500 m. N Xinjiang [Mongolia, Russia].

42. *Ribes kialanum* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1909: 63. 1909.

康边茶沸子 *kang bian cha biao zi*

Shrubs dioecious, 1.5–3 m tall, most parts pubescent and glandular hairy. Branchlets stout, unarmed. Buds brown, ovoid to oblong-ovoid, 4–7 mm, pubescent, apex acute. Petiole 1–3.5 cm; leaf blade suborbicular to broadly ovate, 2–5 cm, base subtruncate to shallowly cordate; lobes 3–5, rarely almost absent, margin irregularly crenate-dentate or doubly dentate, apex obtuse or acute; terminal lobe broadly triangular-ovate, slightly shorter to longer than broadly ovate lateral ones. Racemes erect, male ones dense, 3.5–7 cm, female ones slightly shorter; bracts lanceolate to oblong, 4–8 mm, 1-veined. Pedicel 2–4 mm. Calyx green, sometimes tinged reddish brown, pubescent, usually also glandular hairy; tube cupular to hemispheric, 2–3 mm; lobes reflexed or spreading, ovate to ligulate, 2–3.5 mm, inconspicuously 5-veined. Petals green tinged reddish purple, subflabellate to cuneate-spatulate. Stamens slightly longer than petals. Ovary glandular hairy. Style 2-lobed at apex. Fruit red to reddish brown, subglobose to ellipsoid, 0.5–0.8 cm in diam., shortly glandular hairy. Fl. Apr–May, fr. Jul–Sep.

• Coniferous forest margins, foothill thickets, ditch banks, roadsides; 2500–4000 m. W Sichuan, NW Yunnan.

43. *Ribes orientale* Desfontaines, Hist. Arb. 2: 88. 1809.

东方茶沸子 *dong fang cha biao zi*

Ribes leptostachyum Decaisne; *R. punctatum* Lindley (1810), not Ruiz & Pavón (1802).

Shrubs usually dioecious, 0.5–2 m tall, vegetative parts pubescent, sticky glandular and/or shortly stalked glandular. Branchlets stout, unarmed. Buds reddish brown, ovoid to oblong, 5–6 mm, apex obtuse or acute. Petiole 1–2(–3) cm; leaf blade suborbicular to reniform-orbicular, 1–3(–4) cm, base truncate to shallowly cordate; lobes 3–5, margin irregularly coarsely dentate or doubly dentate, apex obtuse or acute; terminal lobe subequaling lateral ones. Inflorescences and most flower parts pubescent and glandular pubescent; male racemes erect, 2–5 cm, 15–30-flowered, female ones 2–3 cm, 5–15-flowered, to 4 cm in fruit; bracts lanceolate to elliptic, 5–9 mm, 1-veined. Flowers rarely bisexual; pedicel 2–3 mm. Calyx purple to purplish brown; tube broadly saucer-shaped to rotate, 1–2 mm; lobes erect,

ovate to subligulate, 2–2.5 mm, usually obscurely 3-veined. Petals subflabellate to subspatulate, 0.5–1 mm, ± pubescent. Stamens slightly longer than petals. Ovary ovoid. Style 2-lobed. Fruit red to purple, globose, 0.7–0.9 cm, pubescent and shortly stalked glandular. Fl.

Apr–May, fr. Jul–Aug.

Forests, forest margins, rock crevices, roadsides; 2100–4900 m. W Sichuan, Xizang, NW Yunnan [Bhutan, India, Kashmir, Nepal, Russia; SW Asia, SE Europe].

44. *Ribes xizangense* L. T. Lu, Acta Phytotax. Sin. 31: 454. 1993.

西藏茶沸子 xi zang cha biao zi

Shrubs dioecious, 1–3 m tall. Branchlets smooth, pubescent, unarmed. Buds purple or brown, narrowly ovoid, 6–8 mm, apex obtuse or acute. Petiole 1.5–2 cm, glabrous or puberulent and sparsely glandular pubescent; leaf blade broadly ovate, 1.5–3 × 1.8–4 cm, sticky glandular or stalked glandular, base subtruncate to shallowly cordate; lobes 3–5, triangular to ovate, margin irregularly serrulate or doubly serrulate; terminal lobe equaling or slightly longer than lateral ones. Racemes erect or slightly pendulous, male ones 2–5 cm, 5–15(–20)-flowered, female ones 2–3 cm, 5–9-flowered; rachis and pedicels pubescent and glandular pubescent; bracts elliptic, rarely obovate-oblong, 4–7 mm, pubescent, 1-veined. Flowers 4–6 mm in diam.; pedicel 2–4 mm. Calyx dark purple, glabrous, rarely puberulent; tube pelviform, 1.4–1.8 mm; lobes erect, ligulate to ovate, 2–3(–3.5) mm. Petals purple, subflabellate. Stamens slightly longer than petals. Ovary puberulent and glandular pubescent. Style 2-lobed. Fruit orange-red to purple, globose, 0.6–0.9 cm, puberulent and glandular pubescent then glabrescent. Fl. May–Jun, fr. Jul–Aug.

• Forests, thickets on high mountain slopes, mountain valleys; 3500–4600 m. Xizang.

45. *Ribes pseudofasciculatum* K. S. Hao, Repert. Spec. Nov. Regni Veg. 40: 213. 1936.

青海茶沸子 qing hai cha biao zi

Ribes uniflorum T. C. Ku.

Shrubs dioecious, 0.5–1.5 m tall. Branchlets smooth, pubescent. Buds brown or brownish, oblong-ovoid, 4–6 mm, puberulent, apex acute. Petiole to 1 cm, pubescent, often shortly stalked glandular; leaf blade broadly ovate, 1.5–2 cm, thick, pubescent, eglandular, base cordate, rarely subtruncate; lobes 5, margin doubly serrate, apex acute; terminal lobe narrowly triangular-ovate, slightly longer than lateral ones. Male racemes 1–2 cm, 3–7-flowered, female ones shorter, (1 or)2–5-flowered; rachis and pedicels pubescent and glandular hairy; bracts oblong to obovate-oblong, longer than pedicels, pubescent, sometimes also shortly glandular hairy, 1-veined. Pedicel 2–3 mm. Calyx purple, pubescent; tube pelviform, 1–2 mm; lobes reflexed or spreading, oblong to ovate, 1.5–2.5 mm. Petals spatulate or flabellate, minute. Stamens subequaling petals; anthers broadly

obovoid. Ovary glabrous. Style equaling or slightly longer than stamens, 2-lobed. Fruit black or reddish black, glossy, globose, 0.5–0.6 cm, glabrous. Fl. Jun–Aug, fr. Aug–Oct.

• Coniferous forests and thickets in high mountain regions, stony slopes, roadsides along ravines; 3000–4600 m. Qinghai, W Sichuan, E Xizang.

46. *Ribes humile* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1910: 73. 1910.

矮醋栗 ai cu li

Shrubs dioecious, tufted, to 1 m tall, rarely more. Branchlets slender, glabrous, unarmed. Buds brown, ovoid, 3–4 mm, glabrous, apex acute. Petiole 5–10 mm, glabrous; leaf blade suborbicular to ovate, 1–2 cm, glabrous, rarely adaxially sparsely glandular hairy, base truncate to shallowly cordate; lobes 3, triangular-ovate, margin coarsely obtusely dentate, apex obtuse or acute; terminal lobe slightly longer than lateral ones. Male racemes 1.5–3.5 cm, 7–10-flowered, female ones shorter and fewer flowered; rachis and pedicels sparsely glandular pubescent; bracts oblong or elliptic, 3–5 × 1–2 mm, glabrous or margin sparsely stalked glandular. Pedicel 2–4 mm. Calyx purple, glabrous; tube cupular, 2–3 mm; lobes erect to spreading, rarely reflexed, ovate, 1.5–2.5 mm. Petals subflabellate to subobovate, very small. Stamens slightly longer than petals. Ovary glabrous. Style 2-lobed. Fruit red, globose, 0.5–0.7 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

• Forests by roadsides, thickets on mountain slopes; 1000–3300 m. Sichuan.

47. *Ribes glabricalycinum* L. T. Lu, Acta Phytotax. Sin. 31: 457. 1993.

光萼茶沸子 guang e cha biao zi

Shrubs dioecious, to 1 m tall, rarely more. Branchlets glossy, pubescent then glabrous, unarmed. Buds oblong-ovoid, 3–6 mm, apex acute; scales herbaceous, puberulent or subglabrous. Petiole 0.5–1 cm, pubescent and sparsely glandular pubescent; leaf blade broadly ovate, 1–2 cm, pubescent, usually also glandular or adaxially shortly stalked glandular, base subtruncate to cordate; lobes 3–5, margin obtusely doubly dentate, apex acute, rarely obtuse; terminal lobe broadly ovate or rhombic, slightly longer than lateral ones. Male racemes 1–2.5 cm, 7–15-flowered, female ones shorter, (1–)3–5-flowered; rachis pubescent and sparsely glandular hairy; bracts oblong to obovate-oblong, 4–7 mm, pubescent or subglabrous, 1-veined, margin sparsely ciliate. Pedicel 2–5 mm, pubescent or subglabrous, sometimes remotely stalked glandular. Calyx green to yellow-green, glabrous; tube pelviform, 1–2 mm; lobes spreading, rarely reflexed at anthesis, ovate to ligulate, 1.5–2.5 mm. Petals obovate to flabellate, smaller than calyx lobes. Stamens longer than petals; anthers subglobose. Ovary glabrous. Style longer than stamens, 2-lobed. Fruit red, globose, 0.6–0.7 cm, glabrous. Fl. May–Jun, fr. Jul–Aug.

• Coniferous forests and thickets in high mountain regions, scrub along roadsides, plateau slopes; 2800–3800 m. W Sichuan.

48. *Ribes vilmorinii* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1906: 290. 1906.

小果茶沸子 *xiao guo cha biao zi*

Shrubs dioecious, 1–3 m tall. Branchlets pubescent, rarely subglabrous, unarmed. Buds brown to reddish brown, ovoid, 3–5 mm, glabrous or puberulent, apex obtuse to acute. Petiole 1–2 cm, sparsely stalked glandular; leaf blade ovate to suborbicular, 2–4 cm, abaxially glabrous or glandular hairy along veins and at margin, adaxially sparsely stalked glandular, base truncate, rarely shallowly cordate; lobes 3–5, ovate to narrowly triangular-ovate, margin irregularly coarsely obtusely dentate, apex acute to shortly acuminate, rarely obtuse; terminal lobe much longer than lateral ones. Male racemes erect, 1.5–2.5 cm, up to 10-flowered, female ones shorter, 1–1.5 cm, 2–7-flowered; rachis and pedicels pubescent and glandular hairy; bracts elliptic to elliptic-lanceolate, 2–5 mm, margin shortly glandular hairy. Pedicel 1–2 mm. Calyx green, sometimes slightly tinged reddish brown, pubescent, rarely subglabrous; tube cupular, 1.5–2 mm; lobes reflexed, suboblong, rarely broadly ovate, 2–2.5 mm, 3-veined. Petals flabellate to suborbicular, ca. 1.5 mm. Stamens not equaling or subequaling petals. Ovary ovoid, glabrous or pubescent and shortly stalked glandular. Style deeply divided. Fruit black, ovoid to globose, 0.4–0.6 cm in diam., glabrous or pubescent and sparsely stalked glandular. Fl. May–Jun, fr. Aug–Sep.

• Coniferous and mixed forests on mountain slopes, thickets in mountain valleys; 1600–4000 m. Hebei, W Sichuan, NW Yunnan.

1a. Ovary and fruit glabrous 48a. var. *vilmorinii*
1b. Ovary and fruit pubescent 48b. var. *pubicarpum*

48a. *Ribes vilmorinii* var. *vilmorinii*

小果茶沸子(原变种) *xiao guo cha biao zi* (*yuan bian zhong*)

Ovary and fruit glabrous.

• Coniferous and mixed forests on mountain slopes, thickets in mountain valleys; 1600–3900 m. Hebei, W Sichuan, NW Yunnan.

48b. *Ribes vilmorinii* var. *pubicarpum* L. T. Lu, Acta Phytotax. Sin. 31: 458. 1993.

康定茶沸子 *kang ding cha biao zi*

Ovary and fruit pubescent.

• *Abies* forests; ca. 4000 m. W Sichuan (Kangding Xian).

49. *Ribes rubrisepalum* L. T. Lu, Acta Phytotax. Sin. 31: 458. 1993.

红萼茶沸子 *hong e cha biao zi*

Shrubs dioecious, 1–3 m tall. Branchlets robust, glabrous or sparsely shortly glandular hairy, unarmed. Buds brown to purplish brown, ovoid, 4–6 mm, glabrous, apex obtuse. Petiole 1.5–2.5 cm, glabrous or sparsely stalked glandular; leaf blade broadly ovate to

suborbicular, 2.5–4.5 cm, glabrous, sometimes shortly stalked glandular, base cordate; lobes 3–5, margin sharply incised serrate or doubly serrate, apex acuminate or shortly so; terminal lobe narrowly ovate to narrowly triangular-ovate, longer than subovate lateral ones. Male racemes erect, 3–5.5 cm, 14–20-flowered, female ones 2–4 cm, fewer than 15-flowered; rachis and pedicels pubescent and shortly glandular hairy; bracts lanceolate to oblong, 4–6 mm, 1-veined, margin sparsely shortly stalked glandular. Pedicel 2–4 mm. Calyx dark-red to purple, pubescent; tube saucer-shaped, rarely shallowly cupular, 1–2 mm; lobes erect, ligulate to ovate, 2–2.5 mm, 3-veined. Petals subflabellate, ca. 1 mm. Stamens purple, slightly longer than petals. Ovary puberulent when young. Style 2-lobed at apex. Fruit black, subglobose, 0.5–0.9 cm, glabrous. Fl. Apr–May, fr. Jul–Aug.

• Mixed forests on mountain slopes, coniferous forest margins, streamsides; 2200–4100 m. S Gansu, S Shaanxi (Taibai Shan), W Sichuan, NW Yunnan.

50. *Ribes franchetii* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1909: 64. 1909.

鄂西茶沸子 *e xi cha biao zi*

Shrubs dioecious, 1–3 m tall, vegetative parts villous. Branchlets later glabrescent, unarmed. Buds brown, ovoid to narrowly so, 4–7 mm, apex acute. Petiole 1.5–3 cm, sometimes sparsely stalked glandular; leaf blade broadly ovate to suborbicular, 2.5–5 cm, more densely villous along veins abaxially, base truncate to shallowly cordate; lobes 3–5, margin deeply acutely serrate or doubly serrate, apex acuminate; terminal lobe rhombic-ovate, much longer than ovate-triangular lateral ones. Male racemes lax, 6–7 cm, 10–15-flowered, female ones dense, shorter; rachis pubescent; bracts elliptic to elliptic-lanceolate, 6–8 mm, pubescent. Pedicel 2–4 mm, pubescent, sometimes sparsely glandular hairy. Calyx red, villous; tube cupular; lobes erect, ovate to obovate, 2.5–3.5 mm. Petals red, subflabellate. Stamens slightly longer than petals; filaments shorter than anthers in female flowers. Ovary densely villous and glandular hairy. Style 2-lobed at apex. Fruit reddish brown, globose, 0.4–0.6 cm, villous and stalked glandular. Fl. May–Jun, fr. Jul–Aug.

• Forest margins, thickets on shady slopes, rocks; 1400–2100 m. W Hubei (Badong Xian), S Shaanxi (Pingli Xian), Sichuan.

51. *Ribes maximowiczii* Batalin, Trudy Imp. S.-Peterburgsk. Bot. Sada 11: 487. 1890.

华西茶沸子 *hua xi cha biao zi*

Ribes jessoniae Stapf.

Shrubs dioecious, 2–3 m tall. Branchlets stout, densely villous, stalked glandular, unarmed. Buds purple-brown, oblong-ovoid, 4–7 mm, pubescent, apex acute. Petiole 3–4 cm, villous and glandular hairy; leaf blade broadly ovate, 6–10 × 4.5–9 cm, abaxially villous, adaxially scattered pubescent, base shallowly cordate; lobes 3(–5), triangular-ovate, margin irregularly obtusely dentate or doubly dentate; terminal lobe much longer than lateral ones, apex acuminate; lateral lobes acute at apex. Racemes erect, male ones dense, 7–15 cm, 15–30-flow-

ered, female ones 4–10 cm, fewer flowered; rachis and pedicels densely villous and long stalked glandular; bracts lanceolate, 6–8 mm, villous, margin sparsely ciliate. Pedicel 2–4 mm. Calyx yellowish green, slightly tinged red, villous and long glandular hairy; tube shallowly cupular to saucer-shaped, 1.5–2 mm; lobes ovate-orbicular to obovate, ca. 3 mm. Petals subflabellate, ca. 1 mm. Stamens somewhat longer than petals. Ovary globose, villous and long glandular hairy. Style 2-lobed. Fruit red or tinged yellow, ovoid-globose, 0.7–1 cm in diam., densely villous and long stalked glandular. Fl. Jun–Jul, fr. Aug.

• Forests or thickets in mountain valleys; 2500–3000 m. E Gansu, E Shaanxi.

52. *Ribes takare* D. Don, Prodr. Fl. Nepal. 208. 1825.

渐尖茶沸子 *jian jian cha biao zi*

Shrubs dioecious, 1–3 m tall. Branchlets reddish brown to brownish, stout, glabrous or slightly glandular hairy. Buds reddish brown, ovoid, 4–6 mm, apex acute; scales glabrous or puberulent at margin. Petiole 3–5 cm, glabrous, pubescent, or sparsely glandular hairy; leaf blade broadly ovate to suborbicular, 5–9 × 4–9 cm, sparsely glandular hairy, rarely pubescent, base cordate, rarely subtruncate; lobes 3–5, margin irregularly deeply doubly serrate; terminal lobe triangular-ovate, longer than lateral ones, apex acuminate; lateral lobes acute or shortly acuminate at apex. Male racemes erect, 6–10 cm, female ones robust, shorter; rachis and pedicels pubescent and shortly glandular hairy; bracts lanceolate, 4–7 mm, 1-veined, margin coarsely glandular hairy or ciliate. Pedicel 3–5 mm. Calyx reddish brown, sparsely pubescent; tube cupular to pelviform, 1.5–2.5 mm; lobes erect or spreading in fruit, ligulate to oblong, 2–3 mm, 3-veined. Petals subflabellate or cuneate-orbicular, smaller than calyx lobes. Stamens exerted. Ovary obovoid, glabrous or sparsely pubescent. Style 2-lobed at apex. Fruit yellowish green turning reddish brown, ovoid to globose, 0.5–0.7 cm in diam., glabrous or pubescent. Fl. Apr–May, fr. Jul–Aug.

Forests or thickets on slopes or in mountain valleys, river banks in mountain valleys, roadsides; 1400–4000 m. SE Gansu, E Guizhou, SW Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, N India, Kashmir, Myanmar, Nepal, Sikkim].

- 1a. Branchlets and leaf blade sparsely glandular hairy, without eglandular hairs; raceme with both glandular and eglandular hairs; fruit glabrous, rarely puberulent when young 52a. var. *takare*
- 1b. Branchlets, leaf blade, raceme, and fruit with both glandular and eglandular hairs 52b. var. *desmocarpum*

52a. *Ribes takare* var. **takare**

渐尖茶沸子(原变种) *jian jian cha biao zi* (yuan bian zhong)

Ribes acuminatum Wallich ex G. Don.

Branchlets and leaf blade sparsely glandular hairy, without eglandular hairs. Raceme with both glandular

and eglandular hairs. Fruit glabrous, rarely puberulent when young.

Forests or thickets on slopes, river banks in mountain valleys; 1400–3300 m. SE Gansu, E Guizhou, SW Shaanxi, Sichuan, SE Xizang, NW Yunnan [Bhutan, N India, Kashmir, Myanmar, Nepal, Sikkim].

52b. *Ribes takare* var. **desmocarpum** (J. D. Hooker & Thomson) L. T. Lu in L. T. Lu & S. M. Hwang, Fl. Reipubl. Popularis Sin. 35(1): 351. 1995.

束果茶沸子 *shu guo cha biao zi*

Ribes desmocarpum J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 87. 1858.

Branchlets, leaf blade, raceme, and fruit with both glandular and eglandular hairs.

Coniferous forests and thickets in mountain valleys, slopes, roadsides; 2000–4000 m. W Sichuan, Xizang, Yunnan [Bhutan, N India, Myanmar, Nepal, Sikkim].

53. *Ribes komarovii* Pojarkova, Trudy Bot. Inst. Akad. Nauk SSSR, Ser. 1, Fl. Sist. Vyssh. Rast. 2: 209. 1936.

长白茶沸子 *chang bai cha biao zi*

Shrubs dioecious, 1.5–3 m tall. Branchlets glabrous, unarmed. Buds brown or brownish red, oblong-ovoid, 5–8 mm, apex acuminate; scales glabrous or puberulent at margin. Petiole 6–17 mm, glabrous, sometimes sparsely stalked glandular; leaf blade broadly ovate to suborbicular, sometimes narrower, 2–6 × 2–5 cm, sparsely glandular hairy, base subrounded to truncate, rarely shallowly cordate to cuneate; lobes usually 3, margin irregularly crenate-dentate, apex obtuse or acute; terminal lobe much longer than lateral ones. Racemes erect, male ones 2–5 cm, more than 10-flowered, female ones 1.5–2.5 cm, 5–10-flowered; rachis and pedicels shortly stalked glandular; bracts brownish, elliptic, 4–6 mm, glabrous or margin sparsely glandular hairy. Pedicel 2–4 mm. Calyx green, glabrous; tube cupular, 1.5–2.5 mm; lobes erect, ovate to narrowly so, subequaling tube. Petals obovate to subflabellate, minute, not equaling calyx lobes. Stamens somewhat longer than petals. Ovary glabrous. Style 2-lobed. Fruit red, obovoid-globose to globose, 0.7–0.8 cm, glabrous. Fl. May–Jun, fr. Aug–Sep.

Forests, forest margins, thickets, stony slopes; 400–2100 m. Gansu, W Hebei, SE Heilongjiang, W Henan, Jilin, Liaoning, Shaanxi, Shanxi [N Korea, Russia].

- 1a. Leaf blade broadly ovate to suborbicular, 2–6 cm, base subrounded to truncate, rarely shallowly cordate 53a. var. *komarovii*
- 1b. Leaf blade narrower, 3–5 cm, base cuneate 53b. var. *cuneifolium*

53a. *Ribes komarovii* var. **komarovii**

长白茶沸子(原变种) *chang bai cha biao zi* (yuan bian zhong)

Ribes maximowiczianum Komarov var. *saxatile* Komarov

Leaf blade broadly ovate to suborbicular, 2–6 cm, base subrounded to truncate, rarely shallowly cordate.

Forests by roadsides, thickets, stony slopes; 700–2100 m. Gansu, W Hebei, SE Heilongjiang, W Henan, Jilin, Liaoning, Shaanxi, Shanxi [N Korea, Russia].

53b. *Ribes komarovii* var. *cuneifolium* Liou, Ill. Fl. Lign. Pl. N. E. China, 562. 1955.

楔叶长白茶沸子 *xie ye chang bai cha bao zi*

Leaf blade narrower, 3–5 cm, base cuneate.

• Broad-leaved forests and forest margins on slopes; 400–800 m. E Jilin, E Liaoning.

54. *Ribes maximowiczianum* Komarov, Trudy Imp. S.-Peterburgsk. Bot. Sada 22: 443. 1903.

尖叶茶沸子 *jian ye cha biao zi*

Ribes distans Janczewski; *R. tricuspe* Nakai.

Shrubs dioecious, to 1 m tall. Branchlets glabrous, unarmed. Buds brownish, ovoid, 4–7 mm, apex acuminate; scales glabrous or margin puberulent.

Petiole 5–10 mm, glabrous or sparsely glandular hairy; leaf blade broadly ovate to suborbicular, 2.5–5 × 2–4 cm, abaxially usually coarsely appressed hairy only along veins, adaxially coarsely appressed pubescent, base broadly cuneate to rounded, rarely truncate; lobes 3, margin coarsely obtusely serrate; terminal lobe subrhombic, longer than lateral ones, apex acuminate; lateral lobes ovate-triangular, apex acute. Male racemes 2–4 cm, more than 10-flowered, female ones shorter, fewer than 10-flowered; rachis and pedicels sparsely shortly glandular hairy; bracts elliptic-lanceolate, 3–5 mm, glabrous or margin ciliate. Pedicel 1–3 mm. Calyx yellowish brown, glabrous; tube saucer-shaped, 1.5–2 mm; lobes erect, narrowly ovate, 1.5–2.5 mm. Petals obovate, minute. Stamens equaling or longer than petals, reduced ones clavate in female flowers; anthers subequaling filaments. Ovary glabrous. Style 2-lobed. Fruit red, subglobose, 0.6–0.8 cm, glabrous. Fl. May–Jun, fr. Aug–Sep.

Forests and thickets in valleys, mountain slopes; 900–2700 m. Heilongjiang, Jilin, E Liaoning [Japan, Korea, Russia].

55. *Ribes luridum* J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 87. 1858.

紫花茶沸子 *zi hua cha biao zi*

Shrubs dioecious, 1–3 m tall. Branchlets glabrous, unarmed. Buds ovoid to oblong-ovoid, 4–6 mm, glabrous, apex acute. Petiole 1–3 cm, glabrous or puberulent, sparsely shortly stalked glandular; leaf blade broadly ovate to suborbicular, 2–5 cm, sparsely obscurely glandular pubescent, adaxially also eglandular pubescent, base subtruncate to shallowly cordate; lobes 3–5, ovate to rhombic-ovate, margin coarsely obtusely dentate, sometimes with some double teeth, apex obtuse or acute; terminal lobe slightly longer than lateral ones. Male racemes 3–5 cm, 8–20(–25)-flowered, female ones shorter, fewer flowered; rachis pubescent and sparsely glandular pubescent; bracts lanceolate to oblong, 4–7 mm, puberulent, 1-veined, margin sparsely glandular hairy. Pedicel 1–3 mm, puberulent or sparsely stalked glandular. Calyx purple to brownish red, glabrous; tube shallowly cupular, 1.5–2 mm; lobes erect, ovate, rarely ligulate, 2–2.5 mm. Petals subflabellate to cuneate-spatulate, 0.5–0.7 mm. Stamens longer than petals. Ovary glabrous. Style longer than stamens, apex

2-lobed. Fruit black, subglobose, 0.5–0.7 cm in diam., glabrous. Fl. May–Jun, fr. Aug–Sep.

Forests, forest margins, slopes, river banks; 2800–4100 m. W Sichuan, NW Yunnan [E Himalayas].

56. *Ribes tenue* Janczewski, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math. 1906: 290. 1906.

细枝茶沸子 *xi zhi cha biao zi*

Shrubs dioecious, 1–4 m tall. Branchlets slender, usually stalked glandular, unarmed. Buds purplish brown, ovoid to oblong-ovoid, 4–6 mm, apex acute. Petiole 1–3 cm, glabrous or sparsely glandular pubescent; leaf blade narrowly ovate, rarely suborbicular, 2–5.5 × 2–4 cm, pubescent then glabrescent, base truncate to cordate, margin lobed or parted; lobes or segments 3–5, margin incised doubly serrate, sometimes also with remote, coarse, sharp, simple teeth; terminal lobe or segment rhombic-ovate, 2–3 × as long as ovate or rhombic-ovate lateral ones, apex acuminate to caudate. Male racemes 3–5 cm, 10–20-flowered, female ones 1–3 cm, 5–15-flowered; rachis and pedicels pubescent and sparsely glandular hairy; bracts brown, lanceolate to oblong-lanceolate, 4–7 mm, 1-veined, margin shortly glandular hairy. Pedicel 2–6 mm. Calyx reddish brown, glabrous; tube saucer-shaped, 1–1.5 mm; lobes erect, ligulate to ovate, 2–3.5 mm. Petals dark red, cuneate-spatulate to subobovate, ca. 1 mm. Stamens subequaling petals; filaments subequaling anthers. Ovary glabrous. Style 2-lobed, shortly clavate in male flowers. Fruit dark red, rarely black, globose, 0.4–0.7 cm, glabrous. Fl. May–Jun, fr. Aug–Sep.

Forests or thickets on mountain slopes and in valleys, thickets in grasslands, ditch banks along roadsides; 1300–4200 m. E Gansu, W Henan, W Hubei, NW Hunan, SW Shaanxi, Sichuan, Yunnan [Himalayas].

At least some of the records of *Ribes tenue* from the Himalayas may refer to the similar and closely related *R. laciniatum*.

1a. Leaf blade margin lobed; fruit usually dark red 56a. var. *tenue*

1b. Leaf blade margin parted; fruit black 56b. var. *incisum*

56a. *Ribes tenue* var. *tenue*

细枝茶沸子(原变种) *xi zhi cha biao zi* (yuan bian zhong)

Ribes coeleste Janczewski.

Leaf blade margin lobed. Fruit usually dark red.

Thickets on mountain slopes and in valleys, ditch banks along roadsides; 1300–4000 m. E Gansu, W Henan, W Hubei, NW Hunan, SW Shaanxi, Sichuan, Yunnan [Himalayas].

56b. *Ribes tenue* var. *incisum* L. T. Lu, Acta Phytotax. Sin. 31: 458. 1993.

深裂茶沸子 *shen lie cha biao zi*

Leaf blade margin parted. Fruit black.

- Coniferous forests on mountain slopes, thickets in grasslands; 2200–4200 m. W Sichuan, NW Yunnan (Zhongdian Xian).

57. *Ribes glaciale* Wallich in Roxburgh, Fl. Ind. 2: 513. 1824.
冰川茶沸子 bing chuan cha biao zi

Shrubs dioecious, 2–3(–5) m tall. Branchlets glabrous or slightly pubescent, unarmed. Buds brownish red, oblong, 4–7 mm, apex acute; scales herbaceous, glabrous. Petiole pinkish, 1–2 cm, glabrous or sparsely stalked glandular; leaf blade narrowly ovate, rarely suborbicular, 3–5 × 2–4 cm, abaxially puberulent along veins, adaxially glabrous or sparsely glandular hairy, base rounded to subtruncate; lobes 3–5, margin coarsely serrate, sometimes with some double teeth; terminal lobe narrowly triangular-ovate, 3–4 × as long as ovate lateral ones, apex acuminate. Male racemes 2–5 cm, 10–30-flowered, female ones 1–3 cm, 4–10-flowered; rachis and pedicels pubescent, shortly stalked glandular; bracts ovate-lanceolate to oblong-lanceolate, 3–5 mm, 1-veined, margin ciliate. Pedicel 2–4 mm. Calyx brownish red, glabrous; tube shallowly cupular, 1–2 mm; lobes erect, ovate to ligulate, 1–2.5 mm. Petals subflabellate to cuneate-spatulate, not equaling calyx lobes. Stamens equaling or longer than petals. Ovary obovoid-oblong, glabrous, rarely sparsely glandular hairy. Style 2-lobed at apex. Fruit red, sour tasting, subglobose to obovoid-globose, 0.5–0.7 cm in diam., glabrous. Fl. Apr–Jun, fr. Jul–Sep.

Forests and thickets in mountain valleys, mountain slopes, rocks; 1900–3000 m. SE Gansu, Henan, W Hubei, Shaanxi, Sichuan, SE Xizang, NW Yunnan [Bhutan, N India, Kashmir, N Myanmar, Nepal, Sikkim].

58. *Ribes viridiflorum* (Cheng) L. T. Lu & G. Yao in L. T. Lu & S. M. Hwang, Fl. Reipubl. Popularis Sin. 35(1): 345. 1995.

绿花茶沸子 lu hua cha biao zi

Ribes tenue Janczewski var. *viridiflorum* Cheng, Contr. Biol. Lab. Chin. Assoc. Advancem. Sci., Sect. Bot. 10: 120. 1936.

Shrubs dioecious, 1–3 m tall. Branchlets smooth, glabrous, unarmed. Buds brownish, ovoid to oblong-ovoid, 4–6 mm, apex obtuse to acute. Petiole 1.5–3 cm, long glandular hairy; leaf blade broadly ovate to suborbicular, rarely narrowly ovate, 2–7 × 2–6 cm, pubescent, later glabrescent, adaxially sparsely appressed stalked glandular, base subtruncate to cordate; lobes 3–5, margin coarsely sharply serrate, sometimes

with some double teeth; terminal lobe rhombic-ovate to rhombic, longer than ovate lateral ones, apex shortly acuminate. Male racemes 4–9 cm, 8–20-flowered, female ones shorter, 6–18-flowered; rachis and pedicels pubescent, sometimes stalked glandular; bracts oblong to oblong-lanceolate, 5–9 mm, 1-veined, margin shortly ciliate. Pedicel 2–5 mm. Calyx green to yellowish green, glabrous; tube saucer-shaped, 1.5–2 mm; lobes erect, oblong to ligulate, 2–3 mm. Petals greenish white, suborbicular. Stamens subequaling petals. Ovary glabrous. Style 2-lobed at apex. Fruit red, globose, 0.6–0.8 cm, glabrous. Fl. Apr–May, fr. Jun–Jul.

- Forests on mountain slopes, rocks, roadsides; 500–1200 m. N Zhejiang.

59. *Ribes laciniatum* J. D. Hooker & Thomson, J. Proc. Linn. Soc., Bot. 2: 87. 1858.

裂叶茶沸子 lie ye cha biao zi

Shrubs dioecious, 1–3 m tall. Branchlets pubescent and sparsely stalked glandular, unarmed. Buds purplish brown, oblong to oblong-ovoid, 5–7 mm, glabrous, apex shortly acuminate. Petiole 1–2.5 cm, pubescent and sparsely glandular hairy; leaf blade broadly ovate to suborbicular, 2–5 × 1.8–4.5 cm, abaxially pubescent (and sometimes glandular hairy) only along veins, adaxially pubescent and appressed glandular hairy, base truncate to cordate; lobes 3–5, margin incised doubly serrate, often also with some large, simple teeth, apex acute to shortly acuminate; terminal lobe rhombic to ovate, slightly longer than lateral ones. Male racemes erect, 3–5 cm, 9–20-flowered, female ones almost as long, fewer flowered; rachis and pedicels pubescent and glandular pubescent; bracts lanceolate to elliptic-lanceolate, 3–6 mm, 1-veined, margin shortly ciliate. Pedicel 2–4 mm. Calyx reddish or purplish brown, glabrous; tube saucer-shaped, 1–2 mm; lobes erect, lanceolate to narrowly oblong, 2–3.2 mm. Petals purple, flabellate to subcuneate-orbicular, 0.5–0.6 mm. Stamens slightly longer than petals. Ovary ca. 0.6 mm, glabrous. Style 2-lobed. Fruit red to dark purple, globose 0.5–0.7 cm. Fl. Jun–Jul, fr. Aug–Oct.

Coniferous or broad-leaved forests on mountain slopes, thickets, grasslands, streamsides, mountain valleys; 2700–4300 m. Xizang, Yunnan [Bhutan, N India, N Myanmar, Nepal, Sikkim].