

28. RUBUS Linnaeus, Sp. Pl. 1: 492. 1753.

悬钩子属 xuan gou zi shu

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Shrubs or subshrubs, deciduous, rarely evergreen or semievergreen, sometimes perennial creeping dwarf herbs. Stems erect, climbing, arching, or prostrate, glabrous or hairy, usually with prickles or bristles, sometimes with glandular hairs, rarely unarmed. Leaves alternate, petiolate, simple, palmately or pinnately compound, divided or undivided, toothed, glabrous or hairy, sometimes with glandular hairs, bristles, or glands; stipules persistent, ± adnate to petiole basally, undivided or occasionally lobed, persistent or caducous, near base of petiole or at junction of stem and petiole, free, usually dissected, occasionally entire. Flowers bisexual, rarely unisexual and plants dioecious, in cymose panicles, racemes, or corymbs, or several in clusters or solitary. Calyx expanded, sometimes with a short, broad tube; sepals persistent, erect or reflexed, (4 or)5(–8). Petals usually 5, rarely more, occasionally absent, white, pink, or red, glabrous or hairy, margin entire, rarely premorse. Stamens numerous, sometimes few, inserted at mouth of hypanthium; filaments filiform; anthers didymous. Carpels many, rarely few, inserted on convex torus, each carpel becoming a drupelet or drupaceous achene; locule 1; ovules 2, only 1 developing, collateral, pendulous; style filiform, subterminal, glabrous or hairy; stigma simple, capitate. Drupelets or drupaceous achenes aggregated on semispherical, conical, or cylindrical torus, forming an aggregate fruit, separating from torus and aggregate hollow, or adnate to torus and falling with torus attached at maturity and aggregate solid; seed pendulous, testa membranous; cotyledons plano-convex.

About 700 species: worldwide, particularly abundant in temperate regions of N hemisphere, a few species extending into S hemisphere; 208 species (139 endemic) in China.

Rubus umbellifer H. Léveillé (Repert. Spec. Nov. Regni Veg 6: 111. 1908), described from China, is referable to *Grewia biloba* G. Don var. *biflora* (Bunge) Handel-Mazzetti (Tiliaceae).

The Chinese species of *Rubus* are mostly native and rare in cultivation. The fruit of many species are eaten raw or used for making jam, jelly, juice, candy, various drinks, wine, and vinegar. The dried fruits, seeds, and leaves are used in traditional Chinese medicine and the leaves are also used for tea. Some species are suitable for ornamental use, for hedges, or as ground covers. The stems and roots of some species are a source of tannin.

- 1a. Herbs, prostrate or creeping, rarely subshrubs, unarmed or sometimes with needle-like prickles or bristles; stipules free.
 - 2a. Flowers unisexual (plants dioecious); leaves simple 8. *R.* sect. *Chamaemorus*
 - 2b. Flowers bisexual; leaves simple or compound.
 - 3a. Plants with needle-like prickles or bristles; leaves simple; calyx usually with needle-like prickles or bristles abaxially; carpels more than 20, rarely less 6. *R.* sect. *Chamaebatus*
 - 3b. Plants unarmed, rarely with needle-like prickles; leaves compound, 3–5-foliolate; calyx unarmed abaxially or sometimes with soft bristles; carpels fewer than 20, rarely more 7. *R.* sect. *Cylactis*
- 1b. Shrubs, rarely subshrubs or herbs, usually with robust or needle-like prickles; stipules free or adnate to base of petiole.
 - 4a. Stipules free, usually dissected, persistent or caducous; leaves simple or palmately compound.
 - 5a. Plants prickly; stipules caducous or persistent; leaves simple, rarely palmately or pedately compound 4. *R.* sect. *Malachobatus*
 - 5b. Plants densely bristly, bristles rarely with intermixed sparse, needle-like or small prickles; stipules persistent, rarely caducous; leaves simple 5. *R.* sect. *Dalibardastrum*
 - 4b. Stipules adnate to base of petiole, rarely free, undivided, occasionally lobed, persistent.
 - 6a. Leaves pinnately or palmately compound, (3–)5–11(–15)-foliolate, or simple; aggregate fruit separating from torus at maturity, hollow 1. *R.* sect. *Idaebatus*
 - 6b. Leaves usually ternate, sometimes pedately or palmately compound, rarely simple; aggregate fruit separating from or adnate to torus, hollow or not.
 - 7a. Evergreen shrubs; leaves leathery; aggregate fruit separating from or adnate to torus at maturity, hollow or not 2. *R.* sect. *Lampobatus*
 - 7b. Deciduous shrubs; leaves papery; aggregate fruit adnate to, rarely separating from torus at maturity, rarely hollow 3. *R.* sect. *Rubus*

1. *Rubus* sect. *Idaebatus* Focke, Abh. Naturwiss. Vereine Bremen 4: 143. 1874.

空心莓组 kong xin mei zu

Shrubs, rarely subshrubs or herbs, usually with robust or needle-like prickles. Leaves pinnately or palmately compound, (3–)5–11(–15)-foliolate, or simple; stipules persistent, mostly adnate to base of petiole, narrower than petiole, rarely broader, undivided, sometimes lobed. Flowers bisexual, in cymose panicles, subracemes, or corymbs, rarely several in clusters or solitary. Aggregate fruit separating from torus at maturity, hollow.

- rarely flowers solitary; ovary glabrous 72. *R. columellaris*
- 20b. Leaflets narrowly lanceolate, terminal leaflet ca. 4 × as long as lateral leaflets, margin remotely and shallowly serrulate; flowers 1.5–2 cm, solitary or in clusters of 2 or 3; apex of ovary pubescent 73. *R. paucidentatus*
- 15b. Leaves (3–)5–11(–15)-foliolate, not leathery; carpels 10–70 or ca. 100 or more.
- 21a. Carpels ca. 100 or more, usually inserted on stipitate torus; terminal inflorescences corymbs, rarely short racemes, or flowers several in clusters or solitary.
- 22a. Plants without glandular hairs, but with glands, sometimes with sparse, short glandular hairs only on flowering branchlets or pedicel; flowers solitary or several in cluster, occasionally in short racemes.
- 23a. Plants eglandular.
- 24a. Leaflets ovate or elliptic, rarely ovate-lanceolate, sharply incised-doubly serrate; pedicel 2.5–5 cm; aggregate fruit subglobose, 0.9–1.1 cm in diam. 67. *R. eustephanos*
- 24b. Leaflets ovate-lanceolate or lanceolate, irregularly and doubly serrate; pedicel 1.5–2.5 cm; aggregate fruit globose to ellipsoid, to 1.5 cm in diam. 68. *R. fraxinifolius*
- 23b. Plants glandular.
- 25a. Plants glabrous; ovary with few hairs apically 66. *R. lanyuensis*
- 25b. Plants pubescent; ovary glabrous or pubescent.
- 26a. Shrubs, erect or scandent; flowers 2–3 cm in diam.; ovary glabrous; aggregate fruit ovoid-globose or narrowly obovoid to oblong, 8–12 mm in diam. 64. *R. rosifolius*
- 26b. Subshrubs; flowers less than 2 cm in diam.; ovary pubescent; aggregate fruit globose, 5–7 mm in diam. 65. *R. pararosifolius*
- 22b. Plants with glandular hairs; terminal corymbs several flowered or sometimes flowers solitary.
- 27a. Plants pubescent, with longer glandular hairs; aggregate fruit oblong or subglobose.
- 28a. Aggregate fruit oblong; flowers 1–2 cm in diam. 58. *R. sumatranus*
- 28b. Aggregate fruit subglobose; flowers 2–4 cm in diam.
- 29a. Flowers 2–3 cm in diam.; pedicel 2–3 cm 59. *R. croceacanthus*
- 29b. Flowers 3–4 cm in diam.; pedicel (2–)3–6 cm 60. *R. hirsutus*
- 27b. Plants glabrous, rarely partly pilose, with shorter glandular hairs; aggregate fruit subglobose.
- 30a. Flowers 2–3 cm in diam., solitary, rarely 2–5 in terminal corymbs; sepals narrowly triangular or triangular-lanceolate 61. *R. glandulosocalycinus*
- 30b. Flowers 3–4 cm in diam., 2–5 in terminal corymbs, rarely solitary; sepals lanceolate, ovate-lanceolate, oblong-lanceolate, or narrowly ovate-lanceolate.
- 31a. Leaves 7–9(–11)-foliolate; leaflets lanceolate or ovate-lanceolate; carpels more than 100; torus sessile; ovary and aggregate fruit without glandular hairs 62. *R. tsangii*
- 31b. Leaves 5–7-foliolate; leaflets ovate to ovate-oblong; carpels less than 100; torus stipitate, stipe ca. 3 mm; ovary and aggregate fruit with sparse, glandular hairs 63. *R. glandulosocarpus*
- 21b. Carpels 10–70 or slightly more, inserted on sessile torus.
- 32a. Terminal inflorescences cymose-panicles or subracemes.
- 33a. Abaxial surface of leaflets pubescent or subglabrous.
- 34a. Plants without glandular hairs; flowers white.
- 35a. Branchlets with sparse prickles; leaflets ovate-lanceolate to elliptic-lanceolate; sepals ovate-lanceolate, sparsely glandular abaxially; petals pilose abaxially 11. *R. alnifoliolatus*
- 35b. Branchlets unarmed; leaflets elliptic or oblong; sepals triangular-ovate, not glandular abaxially; petals glabrous 12. *R. fraxinifolius*
- 34b. Plants with glandular hairs; flowers white or purple.
- 36a. Leaflets ovate to ovate-lanceolate, margin coarsely and sharply serrate; pedicel 1–2 cm; petals white, glabrous; aggregate fruit 7–9 mm in diam. 8. *R. chiliadenus*
- 36b. Leaflets broadly ovate to suborbicular, margin coarsely and sharply doubly serrate; pedicel 0.5–1 cm; petals purple, glabrous or pubescent; aggregate fruit 8–15 mm in diam.
- 37a. Petals glabrous; aggregate fruit 8–10 mm in diam. 9. *R. adenophorus*
- 37b. Petals hirsute basally on both surfaces; aggregate fruit 10–15 mm in diam. 10. *R. parviaraliifolius*
- 33b. Abaxial surface of leaflets densely tomentose.
- 38a. Plants without glandular hairs.
- 39a. Inflorescences subracemes; branchlets, petioles, pedicel, and abaxial surface of calyx minutely pubescent; sepals acute 7. *R. lishuiensis*
- 39b. Inflorescences cymose panicles or subracemes; branchlets, petioles, pedicel, and abaxial surface of calyx tomentose or glabrous; sepals acute or long acuminate.
- 40a. Branchlets, petioles, and pedicels pubescent; abaxial surface of calyx tomentose; sepals acute 5. *R. flosculosus*

- 40b. Branchlets, petioles, and pedicels glabrous; abaxial surface of calyx glabrous; sepals long acuminate 6. *R. cockburnianus*
- 38b. Plants with glandular hairs.
 - 41a. Leaves 5–7-foliolate.
 - 42a. Plants with unequal long glandular hairs; terminal inflorescences large cymose panicles; sepals ovate-lanceolate, apex caudate; leaflets ovate to ovate-lanceolate 1. *R. grandipaniculatus*
 - 42b. Plants with 1–2 mm glandular hairs; terminal inflorescences short subracemes or narrow cymose panicles; sepals ovate, apex acute; leaflets usually elliptic to ovate-lanceolate 2. *R. idaeopsis*
 - 41b. Leaves 3-, rarely 5-foliolate.
 - 43a. Leaflets coarsely serrate or doubly serrate; terminal inflorescences subracemes or narrow panicles; pedicel 0.4–1 cm; sepals ovate, apically acute 3. *R. innominatus*
 - 43b. Leaflets coarsely obtusely serrate; terminal inflorescences large cymose panicles; pedicel 1.5–2.5 cm; sepals lanceolate or ovate-lanceolate, apically caudate 4. *R. spinulosoides*
- 32b. Terminal inflorescences corymbs, rarely short racemes, or flowers several in a cluster or solitary.
 - 44a. Aggregate fruit densely tomentose.
 - 45a. Abaxial surface of leaflets densely tomentose.
 - 46a. Leaves 5–9-, rarely 3- or 11-foliolate.
 - 47a. Flowers solitary, white; sepals caudate 16. *R. bonatianus*
 - 47b. Flowers in terminal corymbs or several in a cluster; sepals acute, acuminate, or caudate.
 - 48a. Flowers white; leaflets incised to doubly serrate; sepals caudate; inflorescences corymbs or flowers 3 or 4 in a cluster 15. *R. trijugus*
 - 48b. Flowers red; leaflets coarsely sharply serrate or coarsely incised to doubly serrate; sepals acute or acuminate; inflorescences corymbs, rarely short thyrses.
 - 49a. Leaves (5–)7–9(–11)-foliolate, coarsely sharply serrate; sepals acute; carpels 55–70; aggregate fruit 8–12 mm in diam. 13. *R. niveus*
 - 49b. Leaves 3–5-foliolate, coarsely incised-doubly serrate; sepals acuminate; carpels 20–40; aggregate fruit 5–8 mm in diam. 14. *R. piluliferus*
 - 46b. Leaves 3–5(–7)-foliolate.
 - 50a. Plants with needle-like prickles and glandular hairs.
 - 51a. Leaves 5–7-foliolate; flowers solitary or in clusters of 2 or 3; abaxial surface of calyx tomentose 17. *R. wawushanensis*
 - 51b. Leaves 3-foliolate, rarely 5-foliolate; flowers in terminal corymbs or solitary; abaxial surface of calyx pubescent.
 - 52a. Low shrubs; flowers ca. 1 cm in diam., 5–9 or more in terminal corymbs 18. *R. sachalinensis*
 - 52b. Subshrubs or herblike; flowers 1.5–2 cm in diam., 1–3 terminal on branchlets 19. *R. irritans*
 - 50b. Plants unarmed, glandular hairs absent or rarely with sparse, needle-like prickles or glandular hairs on some parts.
 - 53a. Aggregate fruit yellow at maturity, with caducous hairs.
 - 54a. Plants villous; leaflets rhombic or ovate to elliptic; abaxial surface of calyx villous, with dense, needle-like prickles; sepals ovate-lanceolate or lanceolate, apex caudate 40. *R. alexeterius*
 - 54b. Plants glabrous; leaflets broadly ovate, suborbicular, or elliptic; abaxial surface of calyx glabrous, unarmed; sepals broadly ovate or orbicular-ovate, apex acute 39. *R. biflorus*
 - 53b. Aggregate fruit red or orange-red at maturity, persistently tomentose.
 - 55a. Aggregate fruit subglobose, 12–20 mm in diam., densely long tomentose; petiole and pedicel with sparse, glandular hairs; abaxial surface of calyx with sparse, glandular hairs, prickly 20. *R. eucalyptus*
 - 55b. Aggregate fruit subglobose or narrowly ovoid, 10–14 mm in diam., shortly tomentose; petiole, pedicel, and abaxial surface of calyx without glandular hairs; abaxial surface of calyx unarmed or prickly.
 - 56a. Leaves (3–)5–7-foliolate; abaxial surface of calyx ± with needle-like prickles; flowers white 21. *R. idaeus*
 - 56b. Leaves usually 3-foliolate; abaxial surface of calyx unarmed; flowers white, pinkish, or purple.
 - 57a. Leaflets ovate or elliptic; flowers white or pinkish; aggregate fruit semiglobose, less than 10 mm, orange, yellow, or orange-red 22. *R. aurantiacus*
 - 57b. Leaflets broadly ovate to ovate-lanceolate; flowers purple; aggregate fruit narrowly ovoid, 10–15 mm, red 23. *R. austrotibetanus*
 - 45b. Abaxial surface of leaflets pubescent.

- 58a. Flowers usually solitary; pedicel 4–6 cm; leaflets, branchlets, pedicel, and abaxial surface of calyx pubescent, without glandular hairs 28. *R. gyamdaensis*
- 58b. Flowers 3–10 or more in terminal corymbs; pedicel (0.7–)1–3.5 cm; abaxial surface of leaflets pubescent only along veins.
- 59a. Plants with sparse, glandular hairs; branchlets, petioles, and abaxial surface of calyx pubescent; flowers ca. 1 cm in diam.; abaxial surface of calyx with needle-like prickles and soft hairs 24. *R. komarovii*
- 59b. Plants without glandular hairs; flowers 1–3 cm in diam.; abaxial surface of calyx unarmed or rarely prickly, puberulous, finely pubescent or glabrous.
- 60a. Branchlets, pedicel, and abaxial surface of calyx glabrous; flowers 1–1.5(–2) cm in diam.; abaxial surface of calyx unarmed; aggregate fruit 8–12 mm in diam., densely tomentose 25. *R. pileatus*
- 60b. Branchlets, pedicel, and abaxial surface of calyx pubescent, rarely glabrous; flowers 2–3 cm in diam.; abaxial surface of calyx sometimes with minute prickles; aggregate fruit 8–20 mm in diam., densely long tomentose, shortly tomentose, or pubescent.
- 61a. Flowers 2–3 cm in diam.; aggregate fruit 13–20 mm in diam., densely long tomentose; leaves (3–)5–7-foliolate 26. *R. pseudopileatus*
- 61b. Flowers 1–1.5 cm in diam.; aggregate fruit 8–12 mm in diam., shortly tomentose or pubescent; leaves (5–)7–11-foliolate.
- 62a. Branchlets and inflorescences minutely pubescent; terminal corymbs or short racemes more than 10-flowered; ovary and base of style tomentose; aggregate fruit yellowish red to purplish red, densely shortly tomentose 27. *R. subinopertus*
- 62b. Branchlets and inflorescences glabrous; short terminal corymbs several flowered; ovary and base of style pubescent; aggregate fruit purplish black, thinly pubescent 42. *R. inopertus*
- 44b. Aggregate fruit pubescent or glabrous.
- 63a. Abaxial surface of leaflets tomentose.
- 64a. Leaves (5–)7–11(–13)-foliolate, terminal leaflet more than 2 × as long as lateral leaflets; aggregate fruit densely pubescent 29. *R. thibetanus*
- 64b. Leaves 3–7-foliolate, terminal leaflet slightly longer than lateral leaflets; aggregate fruit glabrous or pubescent.
- 65a. Plants densely bristly or with glandular hairs.
- 66a. Plants with glandular hairs; leaflets coarsely serrate or incised; apex of sepals caudate; aggregate fruit red 30. *R. phoenicolasius*
- 66b. Plants without glandular hairs; leaflets sharply serrulate; apex of sepals acute; aggregate fruit golden yellow.
- 67a. Leaflets elliptic, apex acute or abruptly pointed, abaxially tomentose 31. *R. ellipticus*
- 67b. Leaflets elliptic or ovate, rarely obovate, apex caudate or acute, rarely obtuse, abaxially glabrous, sparsely pubescent and bristly only along veins 48. *R. wallichianus*
- 65b. Plants without bristles and glandular hairs, rarely sparsely stipitate glandular on some parts.
- 68a. Leaves 5–7-foliolate; leaflets pinnatifid; branchlets, petioles, and pedicels sometimes sparsely stipitate glandular; abaxial surface of calyx pubescent, with needle-like prickles or sparsely stipitate glandular; aggregate fruit red, glabrous 32. *R. stimulanus*
- 68b. Leaves 3–5-foliolate; branchlets, petioles, and pedicel not stipitate glandular; abaxial surface of calyx glabrous, pubescent or with needle-like prickles; aggregate fruit red, dark red, purplish red, yellow, or black.
- 69a. Aggregate fruit yellow.
- 70a. Branchlets, rachis, pedicels, and abaxial surface of calyx glabrous; sepals broadly ovate or orbicular-ovate, apically acute 39. *R. biflorus*
- 70b. Branchlets, rachis, pedicels, and abaxial surface of calyx pubescent; sepals narrowly ovate, ovate-lanceolate, or lanceolate, apically long acuminate to caudate.
- 71a. Leaflets rhombic, ovate, narrowly ovate, or elliptic; calyx 1.5–2 cm, with dense, needle-like prickles; flowers white; ovary glabrous, or tomentose only at apex, style tomentose basally 40. *R. alexeterius*
- 71b. Leaflets ovate to ovate-lanceolate; calyx to 1.5 cm, unarmed; flowers pink; ovary sericeous-villous, style glabrous 41. *R. pedunculatus*
- 69b. Aggregate fruit red, blue-black, or black.
- 72a. Aggregate fruit black or blue-black.
- 73a. Pedicel 1.5–3.5 cm; apex of calyx lobes long acuminate to caudate; leaflets coarsely incised-doubly serrate; terminal corymbs several flowered 41. *R. pedunculatus*

- 73b. Pedicel 0.6–1.2 cm; apex of calyx lobes acute to acuminate; leaflets large- or incised-serrate; terminal corymbs several to more than 20-flowered.
- 74a. Leaflets lobed, coarsely serrate; branchlets, petioles, and pedicels with sparse, needle-like prickles; aggregate fruit glabrous 37. *R. mesogaeus*
- 74b. Leaflets coarsely incised-serrate; branchlets, petioles, and pedicels with dense, needle-like prickles; aggregate fruit puberulous 38. *R. subtibetanus*
- 72b. Aggregate fruit red.
- 75a. Apex of leaflets obtuse, rarely acute; abaxial surface of calyx with needle-like prickles 33. *R. parvifolius*
- 75b. Apex of leaflets shortly acuminate to acuminate, rarely acute; abaxial surface of calyx usually unarmed.
- 76a. Leaflets lanceolate or oblong-lanceolate; abaxial surface of calyx tomentose; branchlets, petioles, and pedicel pubescent 36. *R. kulinganus*
- 76b. Leaflets ovate or narrowly ovate to ovate-lanceolate; abaxial surface of calyx glabrous or hairy; branchlets, petioles, and pedicel glabrous or tomentose.
- 77a. Branchlets, petioles, pedicel, and abaxial surface of calyx glabrous; terminal corymbs 3- or 4-flowered 34. *R. erythrocarpus*
- 77b. Branchlets, petioles, and pedicel pubescent; abaxial surface of calyx pubescent, intermixed tomentose; terminal corymbs 6–10-flowered 35. *R. subornatus*
- 63b. Abaxial surface of leaflets pubescent or glabrous.
- 78a. Leaves (5–)7–15-foliolate.
- 79a. Flowers several in clusters or in short terminal corymbs; rachis, pedicels, and abaxial surface of calyx glabrous.
- 80a. Leaves (5–)7–11-foliolate; leaflets puberulent on both surfaces; flowers 10–12 mm in diam.; calyx brown; petals obovate, 4–6 mm in diam. 42. *R. inopertus*
- 80b. Leaves 5-foliolate; leaflets glabrous on both surfaces, or abaxially puberulent only along veins; flowers 12–14 mm in diam.; calyx dark brownish purple; petals suborbicular, 8–9 mm in diam. 43. *R. wilsonii*
- 79b. Flowers solitary or in clusters of 2 or 3, terminal or axillary; rachis, pedicels, and abaxial surface of calyx pubescent.
- 81a. Aggregate fruit oblong, rarely ellipsoid, red; flowers 3–4 cm in diam.; branchlets, petioles, and leaflets glabrous or subglabrous 44. *R. amabilis*
- 81b. Aggregate fruit subglobose, blackish red, yellowish red or red; flowers 2–3 cm in diam.; plants glabrous or with glandular hairs.
- 82a. Plants glabrous, without glandular hairs; aggregate fruit red 47. *R. taiwanicola*
- 82b. Plants with glandular hairs or not; aggregate fruit blackish red or yellowish red.
- 83a. Shrubs 1–2 m tall, with glandular hairs; leaflets ovate, ovate-lanceolate, or rhombic-ovate; aggregate fruit blackish red, 1–1.2 cm in diam. 45. *R. ptilocarpus*
- 83b. Subshrubs, 10–50 cm tall, without glandular hairs, rarely petioles or pedicels with sparse, glandular hairs; leaflets broadly ovate or rhombic-ovate, rarely oblong; aggregate fruit yellowish red, 1.4–2 cm in diam. 46. *R. lutescens*
- 78b. Leaves 3–7(–9)-foliolate.
- 84a. Plants with reddish brown bristles; flowers white; aggregate fruit golden yellow or reddish yellow; leaves 3-foliolate 48. *R. wallichianus*
- 84b. Plants without bristles; flowers red or white; aggregate fruit red, dark red, or purplish black; leaves 3–7-foliolate.
- 85a. Terminal inflorescences corymbs or short racemes, several to more than 30-flowered.
- 86a. Terminal inflorescences corymbs; apex of sepals acuminate to caudate; abaxial surface of calyx pubescent 49. *R. coreanus*
- 86b. Terminal inflorescences short racemes; apex of sepals obtuse, acute, or acuminate; abaxial surface of calyx villous.
- 87a. Leaves 5-foliolate; leaflets ovate, broadly ovate, or rhombic-ovate, apex acute; sepals ovate or broadly ovate, apex obtuse or acute 50. *R. subcoreanus*
- 87b. Leaves 3-foliolate; leaflets narrowly ovate or ovate-lanceolate, apex acuminate; sepals ovate-lanceolate, apex subulate-acuminate 51. *R. spananthus*
- 85b. Terminal inflorescences corymbs, 2–4-flowered or slightly more, sometimes flowers several in clusters or solitary.
- 88a. Plants stipitate glandular; leaves 3-foliolate.

- 89a. Leaflets 2–4 cm, coarsely sharply serrate; petioles 2–3.5 cm; flowers 1–1.5 cm in diam.; ovary sparsely pilose 52. *R. stans*
- 89b. Leaflets 4–8 cm, irregularly obtusely dentate; petioles 4–8(–10) cm; flowers 2–3 cm in diam.; ovary glabrous 53. *R. sikkimensis*
- 88b. Plants not stipitate glandular, rarely with stipitate glands on some parts; leaves 3–7(–9)-foliolate.
- 90a. Leaves (3–)5–7(–9)-foliolate; branchlets and abaxial surface of calyx with dense, straight needle-like prickles 54. *R. pungens*
- 90b. Leaves 3-foliolate, rarely 5-foliolate; branchlets and abaxial surface of calyx with sparse, curved or straight minute prickles, or abaxial surface of calyx unarmed.
- 91a. Subshrubs, 40–60 cm tall; terminal leaflet slightly longer than lateral leaflets; abaxial surface of calyx with sparse, curved minute prickles 57. *R. simplex*
- 91b. Shrubs or subshrubs, 15–200 cm tall; terminal leaflet much longer than lateral leaflets; abaxial surface of calyx with straight needle-like prickles or unarmed.
- 92a. Shrubs 1–2 m tall; leaflets lanceolate, ovate-lanceolate, or ovate; petiolule of terminal leaflet 0.5–1 cm; abaxial surface of calyx unarmed 55. *R. macilentus*
- 92b. Subshrubs, 15–50 cm tall; leaflets oblong or elliptic-oblong, rarely ovate-lanceolate; petiolule of terminal leaflet 1–2.5 cm; abaxial surface of calyx with straight needle-like prickles 56. *R. xanthocarpus*

1. *Rubus grandipaniculatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 296. 1982.

大序悬钩子 da xu xuan gou zi

Shrubs 1–3 m tall, with arching branches. Branchlets with sparse, curved minute prickles, densely villous, with intermixed glandular hairs of unequal length. Leaves imparipinnate, 5–7-foliolate, rarely 3-foliate at base of inflorescence; petiole 3.5–6 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets shortly petiolulate or subsessile, petiolule and rachis pubescent, with intermixed unequal glandular hairs, with sparse, minute prickles; stipules brownish, linear, pubescent, with intermixed glandular hairs; blade of leaflets ovate to ovate-lanceolate, 2.5–5 × 1.5–3 cm, abaxially densely gray tomentose, with purple stalked glands along veins, adaxially pilose, base broadly cuneate or subrounded, sometimes shallowly cordate on terminal leaflet, margin irregularly coarsely serrate, often lobed on terminal leaflet, apex acuminate. Inflorescences terminal or axillary, large broad cymose panicles, numerous flowered; rachis and pedicels with dense, unequal stalked glands and soft hairs; bracts brownish, lanceolate or ovate-lanceolate, not or 2- or 3-laciniate at apex. Pedicel 5–10 mm. Flowers not more than 1 cm in diam. Calyx abaxially with dense soft hairs and glandular hairs; sepals erect at anthesis, sometimes reflexed in fruit, ovate-lanceolate, 6–10 mm, apex long acuminate. Petals pink-white to purple, suborbicular, base broadly clawed and soft hairy. Stamens many, in 1 whorl; filaments linear. Ovary hairy; style glabrous. Aggregate fruit red, subglobose, 7–10 mm in diam., glabrous or subglabrous; pyrenes reticulate-rugose. Fl. May–Jun, fr. Jul–Aug.

• Sparse forests on mountain slopes, rock crevices along river banks and sides of ravines; 800–1100 m. Chongqing (Fengjie Xian), S Shaanxi (Pingli Xian).

2. *Rubus idaeopsis* Focke, Biblioth. Bot. 17(Heft 72): 203. 1911.

拟覆盆子 ni fu pen zi

Shrubs 1–3 m tall. Branchlets brown, purplish brown, or grayish brown, slightly angular, with broad purplish brown prickles, densely tomentose, with intermixed 1–2 mm glandular hairs or not. Leaves imparipinnate, 5–7-foliolate, rarely at base of inflorescence reduced to 3-foliolate; petiole 3–5 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolule and rachis densely tomentose, with intermixed short glandular hairs, rarely glandular hairs absent, usually with sparse prickles; stipules linear, 5–9 × 1.5–2.5 mm, pubescent, with intermixed sparse, short glandular hairs; blade of leaflets 3–7 × 2–4 cm, terminal one elliptic to ovate-lanceolate, rarely ovate, lateral leaflets obliquely elliptic to ovate-lanceolate, abaxially densely gray tomentose, adaxially pilose, base cuneate to rounded, margin irregularly coarsely simple-serrate, apex acute to shortly acuminate. Inflorescences terminal or axillary, subracemes or narrow cymose panicles, many flowered, 5–10 cm; rachis and pedicels tomentose, rarely with sparse, short glandular hairs; bracts linear, 4–6 mm, pubescent, rarely with sparse, glandular hairs. Pedicel 7–12 mm. Flowers 1–1.5 cm in diam. Calyx abaxially densely tomentose, sometimes with shortly stalked glands; sepals erect, ovate, 5–7 mm, gray tomentose at margin, apex acute. Petals purple, suborbicular, 4–6 mm in diam., slightly shorter than sepals, base shortly clawed, margin premorse. Stamens many in 1 whorl; filaments shorter than petals, basally broad and compressed. Pistils many, nearly as long as stamens; ovary soft hairy; styles glabrous. Aggregate fruit red, semiglobose or subglobose, ca. 1 cm in diam., glabrous or sparsely soft hairy; pyrenes rugose, minutely punctate. Fl. May–Jun, fr. Jul–Aug.

• Montane valleys, stream sides, mountain slopes; 1000–2600 m. Fujian, Gansu, Guangxi, Guizhou, Henan, Jiangxi, Shaanxi, Sichuan, Xizang, Yunnan.

3. *Rubus innominatus* S. Moore, J. Bot. 13: 226. 1875.

白叶莓 bai ye mei

Shrubs 1–3 m tall, with arching branches. Branchlets brown or reddish brown, densely tomentose, with sparse,

curved prickles. Leaves imparipinnately compound, 3-foliolate, rarely 5-foliolate on sterile branches; petiole 2–4 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets nearly sessile, petiolule and rachis densely tomentose; stipules linear, 6–8 mm, pubescent; blade of leaflets variable in shape, 4–10 × 2.5–5(–7) cm, terminal one ovate or suborbicular, rarely ovate-lanceolate, base rounded to shallowly cordate, margin 3-lobed or incised-lobed, lateral leaflets obliquely ovate-lanceolate or elliptic, base cuneate to rounded, abaxially densely gray tomentose, adaxially appressed pubescent or subglabrous, margin unevenly coarsely serrate or incised doubly serrate, apex acute to shortly acuminate. Inflorescences terminal or axillary, subracemes or narrow cymose panicles, 6–13(–18) cm; rachis, pedicels, and abaxial surface of calyx densely yellowish gray or gray tomentose-villous and stipitate glandular; bracts linear-lanceolate, tomentose-villous. Pedicel 4–10 mm. Flowers 6–10 mm in diam. Sepals erect, ovate, 5–9(–12) × 3–5 mm, inner sepals gray tomentose-villous at margin, apex acute. Petals purple, obovate or suborbicular, nearly as long as sepals, margin premarose, base clawed. Stamens many, shorter than petals. Pistils numerous, slightly shorter than stamens; ovary slightly soft hairy; styles glabrous. Aggregate fruit orange-red, subglobose, ca. 1 cm in diam., initially sparsely soft hairy, glabrous at maturity; pyrenes minutely rugose. Fl. May–Jun, fr. Jul–Aug. $2n = 14^*$.

• Dense or sparse forests, thickets, slopes, roadsides, stream sides, river sides; 400–2500 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang.

- 1a. Plants with dense, glandular hairs throughout; abaxial surface of leaflets sometimes deciduously tomentose 3e. var. *aralioides*
- 1b. Plants wholly without or partly with few glandular hairs; abaxial surface of leaflets persistently tomentose.
 - 2a. Leaves 5-foliolate; apex of leaflets long acuminate 3d. var. *quinatus*
 - 2b. Leaves 3-foliolate; apex of leaflets acute to shortly acuminate.
 - 3a. Plants with few glandular hairs only on rachis, pedicel, and abaxial surface of calyx 3a. var. *innominatus*
 - 3b. Plants without glandular hairs.
 - 4a. Inflorescences long subracemes or narrow cymose panicles; sepals ovate, 5–8 mm 3b. var. *kuntzeanus*
 - 4b. Inflorescences compact short subracemes; sepals broadly ovate, 8–12 mm 3c. var. *macrosepalus*

3a. *Rubus innominatus* var. *innominatus*

白叶莓(原变种) bai ye mei (yuan bian zhong)

Rubus kuntzeanus Hemsley var. *glandulosus* Cardot; *R. kuntzeanus* var. *xanthacanthus* H. Léveillé; *R. xanthacanthus* H. Léveillé (1907), not *R. Keller* (1906), nor *R. xanthoacanthus* Gandoger (1884).

Plants with few glandular hairs only on rachis, pedicels, and abaxial surface of calyx.

• Sparse forests, thickets, slopes, roadsides, river sides in mountain valleys; 400–2500 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang.

3b. *Rubus innominatus* var. *kuntzeanus* (Hemsley) L. H. Bailey, Gentes Herb. 1: 30. 1920.

无腺白叶莓 wu xian bai ye mei

Rubus kuntzeanus Hemsley, J. Linn. Soc., Bot 23: 232. 1887; *R. adenocalyx* Cardot.

Plants without glandular hairs. Inflorescences long subracemes or narrow cymose panicles. Sepals ovate, 5–8 mm.

• Thickets, slopes, roadsides; 800–2000 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang.

3c. *Rubus innominatus* var. *macrosepalus* F. P. Metcalf, Lingnan Sci. J. 19: 27. 1940.

宽萼白叶莓 kuan e bai ye mei

Plants without glandular hairs. Inflorescences compact short subracemes. Sepals broadly ovate, 0.8–1.2 cm.

• Slopes; below 2000 m. Anhui, Zhejiang.

3d. *Rubus innominatus* var. *quinatus* L. H. Bailey, Gentes Herb. 1: 30. 1920.

五叶白叶莓 wu ye bai ye mei

Leaves 5-foliolate; leaflets lanceolate-ovate, sometimes ovate, relatively narrow, apex long acuminate.

• Slopes. Jiangxi.

3e. *Rubus innominatus* var. *aralioides* (Hance) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 37: 48. 1985.

密腺白叶莓 mi xian bai ye mei

Rubus aralioides Hance, J. Bot. 22: 41. 1884.

Plants with dense, glandular hairs throughout. Leaflets abaxially sometimes deciduously tomentose.

• Dense forests, stream sides, slopes, river sides; 400–900 m. Fujian, Guangdong, Guizhou, Jiangxi, Zhejiang.

4. *Rubus spinulosoides* F. P. Metcalf, Lingnan Sci. J. 19: 32. 1940.

刺毛白叶莓 ci mao bai ye mei

Rubus innominatus S. Moore subsp. *plebejus* Focke; *R. teledapos* Focke; *R. triphyllus* Thunberg var. *internuntius* Hance.

Shrubs. Branchlets yellow villous, with reddish glandular hairs and sparse, curved prickles. Leaves imparipinnately compound, usually 3-foliolate; petiole 5–9 cm, petiolule of terminal leaflet 2–3.5 cm, lateral leaflets subsessile, petiolule and rachis villous, with sparse, minute prickles, with short glandular hairs; stipules linear, densely villous; blade of leaflets ovate, elliptic,

or rhombic-elliptic, 4–10 × 2–6 cm, abaxially densely gray- or yellowish gray tomentose, adaxially sparsely appressed pubescent, base broadly cuneate to rounded, margin irregularly obtusely dentate, sometimes lobed on terminal leaflet, apex acute. Inflorescences terminal or axillary, terminal ones large cymose panicles, lateral ones usually subracemes; rachis, pedicels, and abaxial surface of calyx villous, with short purple glandular hairs and sparse, needle-like prickles; bracts linear, villous. Pedicel 1.5–2.5 cm. Flowers ca. 1 cm in diam. Sepals erect, lanceolate or ovate-lanceolate, 1–1.5 cm, margin gray tomentose, apex caudate. Petals pink, suborbicular, base shortly clawed, margin incised. Stamens many, erect; filaments broad and compressed basally. Pistils numerous; ovary soft hairy. Aggregate fruit red, subglobose, ca. 1 cm in diam., glabrous at maturity; pyrenes prominently rugose.

- Mixed forested slopes; 800–1000 m. Hubei, Shandong.

5. *Rubus flosculosus* Focke, Hooker's Icon. Pl., ser. 3, 10: sub t. 1952. 1891.

弓茎悬钩子 *gong jing xuan gou zi*

Shrubs 1.5–2.5 m tall. Branchlets arching, reddish brown, sometimes glaucous, with sparse, compressed purplish red curved prickles, pubescent when young, glabrescent. Leaves imparipinnate, 5–7-foliolate; petiole 3–5 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets nearly sessile, petiolule and rachis pubescent, with curved prickles; stipules linear, 5–6 mm, margin entire, pubescent; blade of leaflets ovate, ovate-lanceolate, or ovate-oblong, terminal leaflet sometimes rhombic-lanceolate, 3–7 × 1.5–4 cm, abaxially gray tomentose, adaxially glabrous or subglabrous, base broadly cuneate to rounded, margin coarsely doubly serrate, rarely lobed, apex acuminate. Inflorescences terminal or axillary, terminal ones narrow cymose panicles, 7–12 cm, axillary ones subracemes; rachis and pedicels pubescent; bracts linear, small, 3–5 mm. Pedicel 5–8 mm, slender. Flowers 5–8 mm in diam. Calyx abaxially gray tomentose, sometimes glabrescent; sepals erect, ovate to narrowly ovate, 4–6 × 1.5–2.5 mm, apex acute, abruptly pointed. Petals pink, suborbicular, nearly as long as or slightly longer than sepals, base shortly clawed. Stamens many; filaments filiform; anthers purple. Pistils numerous; ovary pubescent; styles glabrous. Aggregate fruit red to reddish black, globose, 5–8 mm in diam., pubescent, glabrescent; pyrenes ovoid-globose, rugose. Fl. Jun–Jul, fr. Aug–Sep.

- River banks, montane valleys, forested slopes, thickets, roadsides; 900–2800 m. Fujian, Gansu, Henan, Hubei, Shaanxi, Shanxi, Sichuan, Xizang, Zhejiang.

- 1a. Abaxial surface of calyx densely gray tomentose 5a. var. *flosculosus*
- 1b. Abaxial surface of calyx tomentose when young, glabrescent 5b. var. *etomentosus*

5a. *Rubus flosculosus* var. *flosculosus*

弓茎悬钩子(原变种) *gong jing xuan gou zi* (*yuan bian zhong*)

Rubus eriocalyx Cardot.

Calyx densely gray tomentose abaxially.

- River banks, montane valleys, mixed forests on slopes, thickets; 900–2600 m. Gansu, Henan, Hubei, Shaanxi, Shanxi, Sichuan, Xizang.

5b. *Rubus flosculosus* var. *etomentosus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 295. 1982.

脱毛弓茎悬钩子 *tuo mao gong jing xuan gou zi*

Calyx tomentose abaxially when young, glabrescent.

- Forested slopes, roadsides; below 2800 m. Fujian, Sichuan.

6. *Rubus cockburnianus* Hemsley, J. Linn. Soc., Bot. 29: 305. 1892.

华中悬钩子 *hua zhong xuan gou zi*

Rubus giraldianus Focke.

Shrubs 1.5–3 m tall. Branchlets brownish to reddish brown, glabrous, with sparse, curved prickles. Leaves imparipinnate, 7–9-foliolate, rarely 5-foliolate; petiole 3–5 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolule and rachis glabrous, with sparse, curved minute prickles; stipules linear or linear-lanceolate, 5–7 mm, glabrous; blade of leaflets oblong-lanceolate or ovate-lanceolate, terminal leaflet sometimes nearly rhombic and minutely lobed, 5–10 × 1.5–4(–5) cm, abaxially gray tomentose, adaxially glabrous or sparsely pilose, base broadly cuneate or rounded, margin irregularly coarsely serrate or incised-doubly serrate, usually lobed on terminal leaflet, apex acuminate. Inflorescences terminal or axillary, terminal ones cymose panicles, 10–16(–18) cm, lateral ones often subracemes, rarely subcorymbose; rachis and pedicels glabrous; bracts linear, 2–5 mm, glabrous. Pedicel somewhat reddish when young, 7–12 mm, slender. Flowers to 1 cm in diam. Calyx abaxially glabrous; sepals erect at anthesis, reflexed in fruit, ovate-lanceolate, 5–8 × 2–4 mm, margin gray tomentose and entire, apex long acuminate. Petals pink, suborbicular or obovate, 5–7 × 4–5 mm, margin premorse or coarsely serrate above middle, base shortly clawed. Stamens many, slightly shorter than petals; filaments linear, broader toward base. Pistils slightly shorter than stamens; ovary soft hairy; styles glabrous. Aggregate fruit purplish black, subglobose, less than 1 cm in diam., slightly pubescent or subglabrous; pyrenes shallowly rugose. Fl. May–Jul, fr. Aug–Sep.

- Thickets on sunny slopes, dense forests in montane valleys, river sides; 900–4000 m. Henan, Shaanxi, Sichuan, Xizang, Yunnan.

7. *Rubus lishuiensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 295. 1982.

丽水悬钩子 *li shui xuan gou zi*

Shrubs lianoid or scandent. Branchlets brown or reddish brown, terete, puberulous when young, gradually glabrescent, with sparse prickles broader at base. Leaves compound, usually 5–7-foliolate; petiole 5–7 cm, petiolule of terminal leaflet 1.5–2 cm, lateral leaflets subsessile, petiolule and rachis minutely pubescent, gradually glabrescent, with sparse, curved prickles; stipules linear-lanceolate, pubescent; blade of leaflets ovate-lanceolate or narrowly ovate, 5–7 × 2–3.5 cm, abaxially gray tomentose, with sparse, minute prickles along midvein, adaxial veins glabrous or pilose, base broadly cuneate to rounded, mar-

gin unevenly sharply serrate or incised-doubly serrate, apex acuminate. Inflorescences terminal or axillary, short subracemes; rachis and pedicels minutely pubescent, gradually glabrescent; bracts lanceolate or linear-lanceolate, minutely pubescent. Pedicel 6–11 mm. Calyx abaxially densely minute pubescent; sepals erect in fruit, ovate, 4–6 × 3–4 mm, apex acute and abruptly pointed. Stamens many; filaments linear. Pistils numerous. Aggregate fruit red, subglobose, ca. 1 cm in diam., glabrous; pyrenes ovoid-globose, prominently small-punctate. Fl. Jul, fr. Aug–Sep.

- Forest margins, slopes; low elevations. Zhejiang (Lishui Xian).

8. *Rubus chiliadenus* Focke, Hooker's Icon. Pl., ser. 3, 10: sub t. 1952. 1891.

长序莓 chang xu mei

Shrubs 1–2 m tall. Branchlets brownish to reddish brown, pubescent, with purple glandular hairs and sparse prickles flattened and broadened basally. Leaves imparipinnate, often 5-foliolate, sometimes 3-foliolate at base of inflorescence; petiole 3–5 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolule and rachis pubescent, with intermixed stalked purple glands; stipules linear, 7–10 mm, pubescent, with glandular hairs; blade of leaflets ovate to ovate-lanceolate, 3–8 × 1–4 cm, both surfaces pubescent and with glandular hairs, abaxially more densely so, base cuneate to subrounded or subcordate on terminal leaflet, margin irregularly coarsely sharply serrate, apex acuminate. Inflorescences terminal, cymose panicles, 15–20 cm, axillary inflorescences subracemes, many flowered; rachis, pedicels, and abaxial surface of calyx pubescent and with stalked glands; bracts linear-lanceolate, 5–8 mm, pubescent, with intermixed glandular hairs. Pedicel 1–2 cm. Flowers ca. 1 cm in diam. Calyx tube pelviform, short; sepals usually erect, lanceolate, 5–8 × 3–4 mm, apex acute to acuminate. Petals white or with reddish spots at apex, suborbicular or broadly obovate, 4–6 mm in diam., slightly shorter than sepals, glabrous, base prominently clawed, margin premorse or minutely obtusely serrate. Stamens numerous; filaments linear. Pistils many, nearly as long as or slightly longer than stamens; ovary pubescent; style glabrous. Aggregate fruit enclosed in calyx, red, subglobose, 7–9 mm in diam., pubescent; pyrenes distinctly rugose. Fl. May–Jul, fr. Aug–Sep.

- Forests, wastelands, shaded rocky places, trail- and roadsides; 600–2000 m. Guizhou, Hubei, Sichuan.

9. *Rubus adenophorus* Rolfe, Bull. Misc. Inform. Kew 1910: 382. 1910.

腺毛莓 xian mao mei

Rubus sagatus Focke.

Shrubs scandent, 0.5–2 m tall. Branchlets brownish to brownish red, villous, with intermixed stalked purple glands and sparse, basally broadened and flattened prickles. Leaves imparipinnate, often 3-foliolate; petiole 5–8 cm, petiolule of terminal leaflet 2.5–4 cm, lateral leaflets subsessile, petiolule and rachis villous, with glandular hairs, sparsely prickly; stipules linear-lanceolate, 0.9–1.4 cm, villous, with sparse, stalked glands; blade of leaflets ovate to broadly ovate, 4–11 × 2–8 cm,

both surfaces sparsely villous, abaxially with few stalked glands along veins, base rounded to subcordate, margin coarsely sharp doubly serrate, apex acuminate. Inflorescences terminal or axillary, subracemes, 8–20(–25) cm; rachis, pedicels, and bracts yellow villous, with intermixed stalked purple glands; bracts lanceolate, 0.8–1.2 cm. Pedicel 6–9 mm. Flowers 6–8 mm in diam. Calyx abaxially with long yellow hairs and stipitate purple glands; sepals usually erect after anthesis, lanceolate or ovate-lanceolate, 6–9 × 2.5–5 mm, apex acuminate. Petals purple, obovate or suborbicular, 5–8 × 5–7 mm, glabrous, base long clawed, margin premorse or dentate. Stamens many, nearly as long as petals; filaments linear. Pistils numerous, slightly shorter than stamens; styles glabrous or pilose at base; apex of ovary pilose when young. Aggregate fruit red, globose, 8–10 mm in diam., glabrous or slightly pilose; pyrenes distinctly rugose. Fl. Apr–Jun, fr. Jul–Aug.

- Mountainous regions, valleys, sparse forests, forest margins, thickets; low to medium elevations. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Zhejiang.

10. *Rubus parviaraliifolius* Hayata, Icon. Pl. Formosan. 5: 48. 1915.

椴叶悬钩子 cong ye xuan gou zi

Rubus parviaraliifolius var. *laxiflorus* Y. C. Liu & F. Y. Lu.

Subshrubs or small shrubs, suberect. Branchlets fulvous-red, villous, with glandular hairs, with sparse prickles; prickles few, recurved, to 3 mm. Leaves imparipinnate, 3–5(–7)-foliolate; petioles 3–5 mm, petiolule of terminal leaflet 2–3 mm, lateral leaflets subsessile, petiolule and rachis hairy, stipitate glandular, with sparse prickles; stipules linear, to 1 cm, hairy, stipitate glandular; blade of leaflets variable in size, terminal leaflet orbicular, 5–10 × 5–8 cm, base rounded to slightly cordate, apex acuminate to cuspidate, lateral leaflets ovate, 3–5 × 2–4 cm, abaxially densely pale villous, adaxially sparsely hairy, base rounded, margin irregularly doubly serrate, apex acute. Inflorescences terminal, subracemes or cymose panicles, 7–10 × 5–6 cm; rachis, pedicels, and bracts hairy, with stalked glands; bracts linear, 6–8 mm. Pedicel 5–10 mm. Calyx abaxially hairy, with stalked glands; sepals narrowly oblong-triangular, 5–6 mm, apex caudate. Petals orbicular, 3–4 mm, both surfaces hirsute at base, base clawed, margin crenate. Stamens many; filaments ca. 3 mm. Pistils many; ovary ca. 1 mm, hairy; styles to 2 mm, hairy at base. Aggregate fruit globose, 1–1.5 cm in diam. Fl. May–Jun, fr. Jun–Aug. $2n = 14^*$.

- 1000–3000 m. Taiwan.

11. *Rubus alnifoliolatus* H. Léveillé, Bull. Soc. Bot. France 53: 549. 1906.

椴叶悬钩子 qi ye xuan gou zi

Shrubs erect, small. Branchlets reddish brown to purplish brown, glabrous, often with white bloom; prickles curved or straight, few, to 5 mm. Leaves imparipinnate, 7–9-foliolate, rarely 5-foliolate; petiole reddish, 4–8 cm, petiolule of terminal leaflet to 2.5 cm, lateral leaflets subsessile, petiolule and rachis glabrous or subglabrous, with sparse prickles; stipules linear-lanceolate, 4–10 mm, margin slightly hairy; blade of leaflets

ovate-lanceolate to elliptic-lanceolate, 5–10 × 1.5–3.5 cm, both surfaces glabrous or abaxially slightly pubescent along veins, base ± obliquely broadly cuneate to rounded, margin irregularly serrate or doubly serrate, apex acute to acuminate. Inflorescences terminal, usually cymose panicles, to 10 × 14 cm, many flowered; rachis and pedicels glabrous or nearly so; bracts linear, 5–9 mm, glabrous. Pedicel 1–1.4 cm, slender, unarmed. Calyx abaxially glabrous; tube pelviform; sepals ovate-lanceolate, 7–11 × 3–5 mm, abaxially with few glands, apex acuminate to caudate. Petals white, ovate-oblong, 0.7–1.4 cm × 4–6 mm, abaxially with few hairs, apex obtuse. Stamens many, glabrous, shorter than petals. Pistils numerous; style and ovary glabrous. Aggregate fruit red at maturity, oblong or ellipsoid, 0.8–1.5 cm. Fl. spring–summer, fr. summer.

• Thickets, roadsides; low to medium elevations. Taiwan.

12. *Rubus fraxinifolius* Poirlet in Lamarck, *Encycl.* 6: 242. 1806.

兰屿栲叶悬钩子 lan yu qi ye xuan gou zi

Rubus alnifoliolatus H. Léveillé var. *kotoensis* (Hayata) H. L. Li; *R. fraxinifolius* var. *kotoensis* (Hayata) Koidzumi; *R. kotoensis* Hayata.

Shrubs erect. Branchlets unarmed. Leaves imparipinnate, 5–7-foliolate, rarely 3-foliolate; petiole 2–5 cm, grooved, petiolule of terminal leaflet much longer than those of lateral leaflets, petiolule of lateral leaflets to 5 mm, petiolule and rachis soft hairy; stipules linear, to 1.2 cm; blade of leaflets elliptic to oblong, 3–10 × 2–4 cm, terminal leaflet usually larger than lateral leaflets, lateral veins 10–15 pairs, midvein and lateral veins prominent abaxially, impressed adaxially, abaxially sparsely hairy along veins, adaxially sparsely hairy along midvein, base rounded to slightly cordate, of lateral leaflets often oblique, margin serrate, apex acute to acuminate. Inflorescences usually terminal, cymose panicles, to 14 cm; rachis, pedicels, and bracts often glabrous; bracts lanceolate to oblong, divided at apex. Pedicel 1–3 cm. Sepals triangular-ovate, 6–10 mm, abaxially glabrous except margin tomentose, apex narrowly acute. Petals white, orbicular, 7–12 mm, glabrous. Stamens and pistils many, glabrous. Aggregate fruit red at maturity, globose to ellipsoid, 0.8–1.4 cm. $2n = 14^*$.

Thickets; near sea level. Taiwan (Lan Yu) [Indonesia, Malaysia, Philippines; N Africa, Pacific Islands].

13. *Rubus niveus* Thunberg, *Diss. Bot.-Med. de Rubo* 9. 1813.

红泡刺藤 hong pao ci teng

Rubus bonatii H. Léveillé; *R. boudieri* H. Léveillé; *R. distans* D. Don; *R. foliolosus* D. Don; *R. godongensis* Y. Gu & W. L. Li; *R. incanus* Sasaki ex Y. C. Liu & Yang; *R. lasiocarpus* Smith; *R. lasiocarpus* var. *ectenothyrsus* Cardot; *R. lasiocarpus* var. *micranthus* (D. Don) J. D. Hooker; *R. longistylus* H. Léveillé; *R. mairei* H. Léveillé; *R. micranthus* D. Don; *R. mysorensis* F. Heyne; *R. niveus* var. *micranthus* (D. Don) H. Hara; *R. pinnatus* D. Don; *R. pyi* H. Léveillé; *R. tongchouanensis* H. Léveillé.

Shrubs 1–2.5 m tall. Branchlets purple or green, tomentose when young, soon glabrous, with whitish bloom, with sparse

prickles. Leaves imparipinnate, (5–)7–9(–11)-foliolate; petiole 1.5–4 cm, petiolule of terminal leaflet 0.5–1.5 cm, lateral leaflets subsessile, petiolule and rachis tomentose, with sparse, curved minute prickles; stipules linear-lanceolate, 5–8 mm, soft hairy; blade of leaflets elliptic, ovate-elliptic, or rhombic-elliptic, terminal leaflet ovate to elliptic, slightly longer than lateral leaflets, 2.5–6(–8) × 1–3(–4) cm, abaxially gray tomentose, adaxially soft hairy along veins or glabrate, base cuneate to rounded, margin coarsely serrate or doubly serrate, sometimes terminal leaflet 3-lobed, apex acute, rarely obtuse, terminal leaflet sometimes acuminate. Inflorescences terminal or axillary, corymbs, rarely short thyrses, 4–6 cm; rachis and pedicels tomentose; bracts lanceolate or linear, pubescent. Pedicel 5–10 mm. Flowers to 1 cm in diam. Calyx abaxially densely tomentose, with intermixed soft hairs; sepals erect, triangular-ovate or triangular-lanceolate, 5–8 × 2–3 mm, apex acute or abruptly pointed, rarely shortly acuminate. Petals red, suborbicular, 3–5 mm in diam, shorter than sepals, base shortly clawed. Stamens many, nearly as long as petals; filaments broadened basally. Pistils ca. 55–70, nearly as long as stamens; ovary gray tomentose; styles purplish red, base densely gray tomentose. Aggregate fruit dark red when immature, black at maturity, semiglobose, 0.8–1.2 cm in diam., densely gray tomentose; pyrenes shallowly rugose. Fl. May–Jul, fr. Aug–Sep. $2n = 14^*$.

Thickets on slopes, sparse forests, montane valleys, stream sides, flood plains; 500–2800 m. Gansu, Guangxi, Guizhou, Shaanxi, Sichuan, Taiwan, Xizang, Yunnan [Afghanistan, Bhutan, India, Indonesia, Kashmir, Laos, Malaysia, Myanmar, Nepal, Philippines, Sikkim, Sri Lanka, Thailand, Vietnam].

14. *Rubus piluliferus* Focke, *Bot. Jahrb. Syst.* 36(Beibl. 82): 55. 1905.

陕西悬钩子 shan xi xuan gou zi

Rubus lachnocarpus Focke.

Shrubs to 2 m tall, with arcuate branches. Branchlets terete, soft hairy, glabrescent, with sparse, needle-like prickles or nearly unarmed, rarely with dense, minute prickles. Leaves imparipinnate, 3–5-foliolate; petiole 2–4 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolule and rachis with soft hairs and sparse, minute prickles; stipules linear, 5–10 mm, soft hairy; blade of leaflets ovate, rhombic-ovate, or ovate-lanceolate, 3–8 × 1.5–5.5 cm, lateral veins 5 or 6 pairs, abaxially densely whitish tomentose, adaxially sparsely pubescent or subglabrous, base broadly cuneate or rounded, margin often pinnate-lobed, coarsely incised-doubly serrate, apex variable, caudate-acuminate on terminal leaflet, acute to shortly acuminate on lateral leaflets. Inflorescences terminal on short branchlets, corymbose, 5–10-flowered; rachis and pedicels yellow pubescent; bracts linear, 5–7 mm, pubescent. Pedicel 0.7–1.5 cm. Flowers 1–1.5 cm in diam. Calyx abaxially pubescent; sepals lanceolate or ovate-lanceolate, 5–7 mm, apex acuminate. Petals pink, suborbicular, slightly shorter than sepals, base long clawed. Stamens many, shorter than petals; filaments linear, basally broadened and flattened. Pistils 20–40; ovary and base of style densely whitish tomentose. Aggregate fruit subglobose, 5–8 mm in diam., densely shortly whitish tomentose; pyrenes rugu-

lose or slightly smooth. Fl. May–Jun, fr. Jul–Aug.

• Slopes, forests, montane valleys; 1100–2000 m. Gansu, Hubei, Shaanxi, Sichuan.

15. *Rubus trijugus* Focke, Notes Roy. Bot. Gard. Edinburgh 5: 74. 1911.

三对叶悬钩子 *san dui ye xuan gou zi*

Shrubs to 2 m tall. Branches purplish red or purplish brown, cylindric, soft hairy when young, gradually glabrescent, glaucous, with sparse prickles. Leaves imparipinnate, (5–)7–9-foliolate; petiole 5–11 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolules and rachis with soft hairs and needle-like prickles; stipules linear, 4–7 mm, soft hairy; blade of leaflets ovate or ovate-elliptic, 2–5 × 1.5–4 cm, abaxially gray tomentose, adaxially appressed pubescent, base broadly cuneate or rounded, sometimes subtruncate on terminal leaflet, margin usually incised-doubly serrate, apex acute, sometimes acuminate on terminal leaflet. Inflorescences terminal corymbs or flowers in clusters of 3 or 4 at apex of branchlets, rarely flowers solitary in leaf axils; bracts linear, 3–6 mm, soft hairy. Pedicel 1–2(–3) cm, pubescent, with sparse, minute prickles. Flowers 1.5–2 cm in diam. Calyx abaxially pubescent; sepals erect, spreading, rarely reflexed in fruit, triangular-lanceolate or ovate-lanceolate, 1–1.4 cm × 4–6 mm, margin tomentose, apex caudate. Petals nearly erect, white, elliptic or oblong, shorter than or rarely as long as sepals, base clawed and pubescent. Stamens numerous, shorter than petals; base of filaments slightly broadened, flattened. Pistils many, slightly longer than stamens; ovary and base of style densely gray tomentose. Aggregate fruit red, subglobose, ca. 1 cm in diam., densely gray tomentose. Fl. May–Jun, fr. Jul–Aug.

• Low slopes, mixed forests and forest margins in mountainous regions, grasslands, stream sides; 2500–3500 m. Sichuan, Xizang, Yunnan.

16. *Rubus bonatianus* Focke, Biblioth. Bot. 19(Heft 83): 43. 1914.

滇北悬钩子 *dian bei xuan gou zi*

Shrubs nearly erect or prostrate. Branches dark brown or brownish, soft hairy when young, gradually glabrescent, with sparse prickles. Leaves imparipinnate, (5–)7–9-foliolate; petiole 3–8 cm, petiolule of terminal leaflet 0.5–1 cm, lateral leaflets subsessile, petiolule and rachis with soft hairs and minute prickles, sometimes with sparse, stalked glands; stipules linear, to 1 cm, soft hairy; blade of leaflets rhombic, ovate-lanceolate, or oblong, 2–5 × 1–2.5 cm, abaxially densely gray tomentose, adaxially minutely appressed pubescent, base broadly cuneate to rounded, margin incised, sharply doubly serrate, apex acuminate. Inflorescence 1-flowered. Pedicel 1–2 cm, with soft hairs or sparse, stalked glands. Flowers 2–3 cm in diam. Calyx abaxially densely minutely pubescent; sepals ovate-lanceolate or triangular-lanceolate, to 1.7 cm, apex long caudate, inner sepals gray tomentose marginally. Petals white, together with calyx turning red upon withering, spatulate, ca. 1.5 cm × 8–9 mm, slightly shorter than sepals, both surfaces minutely pubescent, base broadly clawed. Stamens numerous, shorter than petals; filaments linear, with somewhat broadened base. Pistils many,

slightly longer than stamens; ovary and basal part of style long white tomentose. Fruit unknown. Fl. summer.

• Montane valleys, grassy places, stream sides, moist slopes; 3200–3500 m. Sichuan, N Yunnan.

17. *Rubus wawushanensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 298. 1982.

瓦屋山悬钩子 *wa wu shan xuan gou zi*

Shrubs upright, spreading. Branchlets purplish brown, pilose, with dense needle-like prickles, with intermixed sparse, long stalked glands. Leaves imparipinnate, 5–7-foliolate; petiole 3–6 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets sessile or nearly so, petiolules and rachis minutely pubescent, with needle-like prickles; stipules linear or narrowly lanceolate, soft hairy; blade of leaflets ovate, rhombic-ovate, or oblong, 2.5–7 × 2–5(–6) cm, abaxially densely gray tomentose, with sparse, small needle-like prickles along veins, adaxially minutely appressed pubescent, base often truncate, base of lateral leaflets rounded, margin unevenly coarsely incised or sharply doubly serrate, terminal leaflet sometimes 2- or 3-lobed, apex acute, often acuminate on terminal leaflet. Inflorescences usually terminal on short lateral branchlets, 1-flowered or flowers in clusters of 2 or 3; bracts linear, puberulent. Pedicel 1.8–2.5 cm, minutely pubescent, with needle-like prickles and with glandular hairs. Calyx abaxially gray tomentose, with needle-like prickles, ± with intermixed longer stalked glands; sepals erect, narrowly ovate-lanceolate, 1.2–1.7 cm × 5–7 mm, apex long caudate. Flowers to 2.5 cm in diam. Petals white, elliptic or spatulate, shorter than sepals, both surfaces puberulent, apex clawed. Stamens many; filaments linear, or basally slightly broader. Pistils shorter than stamens; ovary and base of style densely long gray tomentose. Aggregate fruit subglobose, ca. 1 cm or more in diam., long gray tomentose; styles persistent; pyrenes rugulose. Fl. May–Jun, fr. Jul–Aug.

• Forest understories. Sichuan (Hongya Xian, Wawu Shan).

18. *Rubus sachalinensis* H. Léveillé, Repert. Spec. Nov. Regni Veg. 6: 332. 1909.

库页悬钩子 *ku ye xuan gou zi*

Shrubs 0.6–2 m tall. Branches purplish brown; branchlets brownish or brown, soft hairy when young, gradually glabrescent, with dense yellow, brownish, or purplish red straight prickles and stalked glands. Leaves imparipinnate, usually 3(–5)-foliolate; petiole 2–5 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolules and rachis with soft hairs and needle-like prickles or glandular hairs; stipules linear, 5–8 mm, with soft hairs or sparse, glandular hairs; blade of leaflets ovate, ovate-lanceolate, or narrowly obovate, 3–7 × 1.5–4(–5) cm, abaxially densely gray tomentose, adaxially glabrous or slightly hairy, base rounded, sometimes shallowly cordate on terminal leaflet, margin irregularly roughly serrate or incised-serrate, apex acute, but usually acuminate on terminal leaflet. Inflorescences terminal and axillary, corymbose, 5–9-flowered, rarely flowers solitary in leaf axils; rachis, pedicels, and abaxial surface of calyx pubescent, with glandular hairs, with needle-like prickles; bracts linear, 3–5 mm, pubescent, with stalked glands. Pedicel 1–2 cm. Flowers ca. 1 cm in diam. Sepals erect, triangular-lanceolate, 7–10 × 2.5–5 mm, margin

often gray tomentose, apex long caudate. Petals white, ligulate or spatulate, shorter than sepals, base clawed. Stamens numerous, slightly shorter than or nearly as long as petals. Pistils many, nearly as long as stamens; ovary and base of style tomentose. Aggregate fruit red, ovoid-globose, ca. 1 cm in diam., tomentose; pyrenes rugose. Fl. Jun–Jul, fr. Aug–Sep. $2n = 14^*$, 24, 28*.

Forests, forest margins, thickets, grasslands, ravines, valleys, rock crevices, slopes; 400–3100 m. Gansu, Hebei, Heilongjiang, Jilin, Nei Mongol, Qinghai, Xinjiang [Japan, Korea, Mongolia, Russia; Europe].

- 1a. Pedicel and abaxial surface of calyx without glandular hairs; flowers and fruit less than 1 cm in diam. 18c. var. *eglandulatus*
- 1b. Pedicel and abaxial surface of calyx with glandular hairs; flowers and fruit 0.9–1.5 cm in diam.
 - 2a. Flowers and fruit ca. 1 cm in diam.; aggregate fruit densely tomentose 18a. var. *sachalinensis*
 - 2b. Flowers and fruit more than 1 cm, to 1.5 cm in diam.; aggregate fruit sparsely hairy or subglabrous 18b. var. *przewalskii*

18a. *Rubus sachalinensis* var. *sachalinensis*

库页悬钩子(原变种) *ku ye xuan gou zi (yuan bian zhong)*

Rubus idaeus Linnaeus var. *aculeatissimus* Regel & Tiling; *R. idaeus* var. *matsumuranus* (H. Léveillé & Vaniot) Koidzumi; *R. idaeus* var. *microphyllus* Turczaninow; *R. idaeus* subsp. *sachalinensis* (H. Léveillé) Focke; *R. idaeus* var. *strigosus* Maximowicz; *Rubus matsumuranus* H. Léveillé & Vaniot; *R. melanolasius* Focke var. *discolor* Komarov.

Pedicel and abaxial surface of calyx with glandular hairs. Flowers and fruit ca. 1 cm in diam. Aggregate fruit densely tomentose.

Forests, forest margins, thickets, grasslands, ravines, valleys, rock crevices; 1000–2500 m. Gansu, Hebei, Heilongjiang, Jilin, Nei Mongol, Qinghai, Xinjiang [Japan, Korea, Mongolia, Russia; Europe].

18b. *Rubus sachalinensis* var. *przewalskii* (Prochanov) L. T. Lu, Acta Phytotax. Sin., 38: 280. 2000.

甘肃悬钩子 *gan su xuan gou zi*

Rubus przewalskii Prochanov, Bot. Mater. Gerb. Glavn. Bot. Sada RSFSR5: 56. 1924.

Pedicel and abaxial surface of calyx with glandular hairs. Flowers and fruit 1–1.5 cm in diam. Aggregate fruit sparsely hairy or subglabrous.

- Forests; 2100–3100 m. Gansu.

18c. *Rubus sachalinensis* var. *eglandulatus* (Y. B. Chang) L. T. Lu, Acta Phytotax. Sin. 38: 280. 2000.

无腺里白悬钩子 *wu xian li bai xuan gou zi*

Rubus matsumuranus H. Léveillé & Vaniot var. *eglandulatus* Y. B. Chang, Bull. Bot. Res., Harbin 1(3): 97. 1981.

Pedicel and abaxial surface of calyx without glandular

hairs. Flowers and fruit less than 1 cm in diam. Indumentum of aggregate fruit unknown.

- Forests, slopes; 400–500 m. Heilongjiang (Yichuan), S Jilin (Fusong Xian).

19. *Rubus irritans* Focke, Biblioth. Bot. 17(Heft 72): 192. 1911.

紫色悬钩子 *zi se xuan gou zi*

Rubus purpureus Bunge ex J. D. Hooker.

Subshrubs or herblike, 10–60 cm tall. Branchlets brown or reddish brown to purplish red, with purple needle-like prickles, soft hairs, and stipitate glands. Leaves imparipinnate, 3-foliolate, rarely 5-foliolate; petiole 3–5 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, with purple needle-like prickles, soft hairs, and glandular hairs; stipules greenish brown, linear or linear-lanceolate, 7–9 mm, pubescent, with intermixed glandular hairs; blade of leaflets ovate or elliptic, 3–5 × 2–3.5 cm, abaxially densely gray tomentose, adaxially puberulous, base broadly cuneate to subrounded, subtruncate on terminal leaflet, margin unevenly coarsely serrate or doubly serrate, apex acute to shortly acuminate. Inflorescences terminal, nutant, 1–3-flowered; bracts linear, 5–7 mm, pubescent, with intermixed glandular hairs. Pedicel 1.5–3 cm, prickly, pubescent, with stalked glands. Flowers 1.5–2 cm in diam. Calyx tinged purplish red, with purple needle-like prickles, soft hairs, and stalked glands; tube shallowly cupular; sepals erect, narrowly ovate or ovate-lanceolate, 1–1.5 cm × 3–5 mm, apex acuminate to caudate. Petals white, broadly elliptic or spatulate, 8–11 × 5–7 mm, shorter than sepals, pubescent, base shortly clawed. Stamens numerous, slightly shorter than petals; filaments linear. Pistils nearly as long as or slightly shorter than stamens; ovary gray tomentose. Aggregate fruit red, subglobose, 1–1.5 cm in diam., tomentose; pyrenes smooth or somewhat reticulate. Fl. Jun–Jul, fr. Aug–Sep.

Slopes, forest margins, thickets; 2000–4500 m. Gansu, Qinghai, Sichuan, SE Xizang [Afghanistan, Bhutan, NW India, Kashmir, Pakistan].

20. *Rubus eucalyptus* Focke, Biblioth. Bot. 17(Heft 72): 169. 1911.

桉叶悬钩子 *an ye xuan gou zi*

Shrubs 1.5–4 m tall. Branchlets dark purplish brown or brown, glabrous, with sparse, curved robust prickles; flowering shoots short, pubescent, stipitate glandular, with curved prickles. Leaves imparipinnate, 3–5(or 7)-foliolate; petiole 5–8 cm, petiolule of terminal leaflet 1–2.5 cm, lateral leaflets subsessile, petiolules and rachis sparsely pubescent, stipitate glandular, with needle-like prickles; stipules linear, 6–9 mm, pubescent, with intermixed glandular hairs; terminal leaflet blade ovate, rhombic-ovate, or rhombic-lanceolate, lateral blade of leaflets rhombic-ovate or elliptic, 2–6(–8) × 1.5–4(–5) cm, abaxially densely gray tomentose, adaxially glabrous, base broadly cuneate to rounded, rarely subcordate, margin irregularly coarsely serrate or incised-doubly serrate, sometimes 3-lobed on terminal leaflet, often acuminate, but acute on lateral leaflets. Inflorescences terminal, rarely axillary, 1- or 2-flowered; bracts linear, 5–7 mm, pubescent, with intermixed glandular hairs. Pedicel 2–4(–5) cm, pubescent, with stalked glands and needle-

like prickles. Flowers 1.5–2 cm in diam. Calyx abaxially ± pubescent, with stalked glands and needle-like prickles; sepals spreading, rarely reflexed in fruit, ovate-lanceolate or triangular-lanceolate, 1–1.5(–2) cm × 4–6 mm, apex caudate, margin gray tomentose. Petals white, spatulate, 7–8 × 3–4 mm, shorter than sepals, base broadly clawed, apex obtuse. Stamens numerous, shorter than petals; filaments linear. Pistils longer than stamens; basal part of style and apical part of ovary densely long gray tomentose. Aggregate fruit red at maturity, subglobose, 1.2–2 cm in diam., densely long gray tomentose; pyrenes rugulose. Fl. Apr–May, fr. Jun–Jul.

• Mixed forests, thickets, bamboo thickets, grasslands, ravines, valleys; 1000–3400 m. Gansu, Guizhou, Hubei, Shaanxi, Sichuan, NE Yunnan.

- 1a. Leaflets at first tomentose, glabrescent abaxially, subglabrous when old; branchlets, petioles, pedicels, and abaxial surface of calyx with sparse, glandular hairs; leaves 3–5-foliolate 20d. var. *etomentosus*
- 1b. Leaflet persistently tomentose abaxially; branchlets, petioles, pedicels, and abaxial surface of calyx with sparse, glandular hairs or not; leaves 3–7-foliolate.
 - 2a. Branchlets, petioles, pedicel, and abaxial surface of calyx without glandular hairs 20c. var. *trullisatus*
 - 2b. Branchlets, petioles, pedicel, and abaxial surface of calyx with glandular hairs.
 - 3a. Leaves 3–5-foliolate, sepals 1–1.5 cm 20a. var. *eucalyptus*
 - 3b. Leaves 7-foliolate; sepals 1.5–2 cm 20b. var. *yunnanensis*

20a. Rubus eucalyptus var. eucalyptus

桉叶悬钩子(原变种) an ye xuan gou zi (yuan bian zhong)

Rubus lasiostylus Focke f. *glandulosus* Focke.

Leaves 3–5-foliolate. Branchlets, petioles, pedicel, and abaxial surface of calyx with glandular hairs. Sepals narrower, 1–1.5 cm wide. Aggregate fruit 1.2–2 cm in diam.

• Mixed forests, thickets, grassy wastelands; 1000–2500 m. Gansu, Guizhou, Hubei, Shaanxi, Sichuan.

20b. Rubus eucalyptus var. yunnanensis T. T. Yu & L. T. Lu, Acta. Phytotax. Sin. 20: 296. 1982.

云南桉叶悬钩子 yun nan an ye xuan gou zi

Leaves 7-foliolate. Branchlets, petioles, pedicel, and abaxial surface of calyx with glandular hairs. Sepals broader, 1.5–2 cm wide. Aggregate fruit to 2 cm in diam.

• Grasslands, bamboo thickets; ca. 3400 m. NE Yunnan (Huize Xian).

20c. Rubus eucalyptus var. trullisatus (Focke) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 37: 54. 1985.

无腺桉叶悬钩子 wu xian an ye xuan gou zi

Rubus trullisatus Focke, Biblioth. Bot. 17(Heft 72): 169. 1911; *R. eriococcus* Cardot; *R. lasiostylus* Focke var. *villosus* Cardot.

Leaves 3-foliolate, rarely 5-foliolate. Branchlets, petioles, pedicel, and abaxial surface of calyx with soft hairs, without glandular hairs. Calyx abaxially with sparse, needle-like prickles.

• Thickets, ravines, valleys; 1000–2500 m. W Hubei, SE Shaanxi, Sichuan.

20d. Rubus eucalyptus var. etomentosus T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 296. 1982.

脱毛桉叶悬钩子 tuo mao an ye xuan gou zi

Leaves 3–5-foliolate, abaxially tomentose, glabrescent, subglabrous when old. Branchlets, petioles, pedicel, and abaxial surface of calyx with sparse, glandular hairs.

• Slopes in mixed forests; ca. 2300 m. N Sichuan (Songpan Xian).

21. Rubus idaeus Linnaeus, Sp. Pl. 1: 492. 1753.

覆盆子 fu pen zi

Shrubs 1–2 m tall. Branchlets brown or reddish brown, terete, sparsely tomentose when young, with sparse prickles, without stalked glands. Leaves imparipinnate, 5–7-foliolate, rarely 3-foliolate; petiole 3–6 cm, petiolule of terminal leaflet ca. 1 cm, petiolule and rachis tomentose, with sparse, minute prickles, without glandular hairs; stipules linear, pubescent; blade of leaflets narrowly ovate or elliptic, often ovate on terminal leaflet, 3–8 × 1.5–4.5 cm, abaxially densely tomentose, adaxially glabrous or pilose, base rounded, sometimes subcordate on terminal leaflet, margin unevenly coarsely serrate or doubly serrate, sometimes lobed on terminal leaflet, apex shortly acuminate. Inflorescences terminal, short racemes, rarely several flowers in clusters in leaf axils; rachis, pedicels, and abaxial surface of calyx densely tomentose, with dense or sparse, needle-like prickles, without glandular hairs; bracts linear, soft hairy. Pedicel 1–2 cm. Flowers 1–1.5 cm in diam. Sepals erect, ovate-lanceolate, margin gray tomentose, apex caudate. Petals white, spatulate, puberulous or glabrous, base broadly clawed. Stamens many, shorter than petals; filaments broadened and flattened. Pistils shorter than stamens; ovary and base of style densely gray tomentose. Aggregate fruit red or orange, subglobose, 1–1.4 cm in diam., densely shortly tomentose; pyrenes prominently pitted. $2n = 14^*$.

Forests, forest margins, thickets, valleys, slopes, meadows, roadsides, waste places; 500–2500 m. Hebei, S Heilongjiang, Jilin, Liaoning, Nei Mongol, Shanxi, Xinjiang [Japan, Russia; Europe, North America].

The fruit are eaten raw and are used for making jam, jelly, juice, wine, and vinegar. The dried fruit are used in medicine. The stems and roots are a source of tannin.

- 1a. Inflorescence rachis, pedicels, and abaxial surface of calyx with glandular hairs; branchlets, petioles, and pedicel with sparse prickles

- or nearly unarmed 21c. var. *borealisinensis*
- 1b. Inflorescence rachis, pedicels, and abaxial surface of calyx without glandular hairs.
 - 2a. Branchlets, petioles, and pedicel tomentose, ± prickly 21a. var. *idaeus*
 - 2b. Branchlets, petioles, and pedicel glabrous, with sparse prickles 21b. var. *glabratus*

21a. *Rubus idaeus* var. *idaeus*

覆盆子(原变种) fu pen zi (yuan bian zhong)

Rubus idaeus subsp. *vulgatus* Arrhenius.

Inflorescence rachis, pedicels, and abaxial surface of calyx without glandular hairs. Branchlets, petioles, and pedicels tomentose, ± prickly.

Mixed forests and forest margins in mountainous regions, thickets, waste places; 500–2500 m. Hebei, Jilin, Liaoning, Shanxi, Xinjiang [Japan, Russia; Europe, North America].

21b. *Rubus idaeus* var. *glabratus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 297. 1982.

无毛覆盆子 wu mao fu pen zi

Inflorescence rachis, pedicels, and abaxial surface of calyx without glandular hairs. Branchlets, petioles, and pedicels glabrous, with sparse prickles.

- Mixed forests, roadsides. S Heilongjiang.

21c. *Rubus idaeus* var. *borealisinensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 297. 1982.

华北覆盆子 hua bei fu pen zi

Inflorescence rachis, pedicels, and abaxial surface of calyx with glandular hairs. Branchlets, petioles, and pedicels with sparse prickles or nearly unarmed.

- Valleys, forests, forest margins, slopes, meadows; 1200–2500 m. W Hebei, Nei Mongol (Daqingshan, Liangcheng), Shanxi.

22. *Rubus aurantiacus* Focke, Biblioth. Bot. 17(Heft 72): 211. 1911.

橘红悬钩子 ju hong xuan gou zi

Shrubs 1–3 m tall. Branchlets brown or reddish brown, with sparse curved prickles, pubescent, gradually glabrescent, subglabrous or glabrous when old. Leaves imparipinnate, usually 3-foliolate; petiole 2–5(–7) cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolule and rachis with soft hairs and sparse, curved prickles; stipules linear, 4–7 mm, pubescent; blade of leaflets ovate, elliptic, or suborbicular, 2–6(–9) × 1.5–5(–6) cm, abaxially densely gray tomentose, adaxially puberulous or subglabrous, base variable in shape, rounded to shallowly cordate on terminal leaflet, cuneate on lateral leaflets, margin irregularly coarsely sharply serrate or incised-doubly serrate, apex acute, shortly acuminate, or obtuse. Inflorescences terminal, corymbose or short racemes, 6–8 cm, ca. 5–10-flowered, or axillary and 1–3-flowered; rachis and pedicels densely tomentose, with sparse, minute prickles; bracts linear, 4–6 mm, pubescent. Pedicel 1–2.5 cm. Flowers 1–2 cm in

diam. Calyx abaxially densely tomentose, unarmed, rarely with sparse, minute prickles; tube pelviform; sepals erect, broadly ovate or triangular-lanceolate, 7–9 × 3–4 mm, abaxially densely tomentose, apex acuminate to caudate. Petals white, rarely pink, obovate or suborbicular, 4–6 mm in diam., slightly shorter than sepals, base shortly clawed, soft hairy. Stamens many, shorter than petals; filaments broadened and flattened. Pistils nearly as long as stamens; ovary and base of style densely gray tomentose. Aggregate fruit orange or orange-red, semiglobose, less than 1 cm, ca. 1 cm or more in diam., densely tomentose; drupelets few; pyrenes shallowly reticulate. Fl. May–Jun, fr. Jul–Aug.

- Valleys, wet places, stream sides, slopes, forests, thickets; 1500–3300 m. W Guizhou, W Sichuan, SE Xizang, Yunnan.

- 1a. Leaflets ovate to elliptic, apex acute or shortly acuminate 22a. var. *aurantiacus*
- 1b. Leaflets suborbicular to ovate, apex obtuse, rarely acute 22b. var. *obtusifolius*

22a. *Rubus aurantiacus* var. *aurantiacus*

橘红悬钩子(原变种) ju hong xuan gou zi (yuan bian zhong)

Leaflets ovate or elliptic, apex acute or shortly acuminate.

- Valleys, stream sides, slopes, forests, thickets; 1500–3300 m. W Sichuan, SE Xizang, Yunnan.

22b. *Rubus aurantiacus* var. *obtusifolius* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 297. 1982.

钝叶橘红悬钩子 dun ye ju hong xuan gou zi

Leaflets suborbicular or ovate, apex obtuse, rarely acute.

- Valleys, stream sides, grassy slopes, wet places; below 1600 m. W Guizhou, S and W Yunnan.

23. *Rubus austrotibetanus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 18: 496. 1980.

藏南悬钩子 zang nan xuan gou zi

Shrubs 1–2 m tall. Branchlets brownish to purplish brown, cylindric, soft hairy, gradually glabrescent, with sparse prickles. Leaves imparipinnate, usually 3-foliolate, those below inflorescence sometimes 3-lobed; petiole 5–8 cm, petiolule of terminal leaflet 1–2.5 cm, lateral leaflets shortly petiolulate or subsessile, pubescent when young, glabrescent, with sparse, minute prickles; stipules linear, 1–1.3 cm, pubescent; blade of leaflets broadly ovate, terminal leaflet sometimes ovate-lanceolate, 4–8 × 3–6 cm, abaxially densely gray tomentose, adaxially glabrous, base broadly cuneate to rounded, margin unevenly coarsely serrate or doubly serrate, apex shortly acuminate to caudate. Inflorescences terminal or axillary, corymbose or short racemes, 5–10-flowered, sometimes axillary and 1–3-flowered; rachis and pedicels pubescent, with sparse, minute prickles; bracts linear, smaller than stipules. Pedicel 1–2 cm. Flowers 1.5–2 cm in diam. Calyx tube purple, abaxially pubescent, sometimes with sparse, minute prickles; sepals erect after anthesis, broadly ovate or ovate-lanceolate, 0.8–1.4 cm, gray tomentose, apex abruptly pointed or acuminate. Petals purple, broadly obovate or elliptic, 5–8 mm, both surfaces soft hairy,

base shortly clawed. Stamens many, shorter than petals; filaments linear. Pistils numerous, shorter than stamens; ovary and basal part of style gray tomentose. Aggregate fruit red, narrowly ovoid, 1–1.5 cm, ca. 1 cm in diam., gray tomentose; drupelets many; pyrenes reticulate. Fl. Jun–Jul, fr. Aug–Sep.

• Mixed forests, broad-leaved evergreen forests, valleys, slopes on roadsides, thickets; 2600–3800 m. S Xizang, W Yunnan.

24. *Rubus komarovii* Nakai, Chosenshokubutsu 1: 304. 1914.

绿叶悬钩子 *lu ye xuan gou zi*

Rubus idaeus Linnaeus f. *concolor* (Komarov) Ohwi; *R. idaeus* subsp. *komarovii* (Nakai) V. N. Voroschilov; *R. idaeus* var. *concolor* (Komarov) Nakai; *R. kanayamensis* H. Léveillé & Vaniot; *R. melanolasius* Focke; *R. melanolasius* var. *concolor* Komarov; *R. sachalinensis* H. Léveillé var. *concolor* (Komarov) Lauener & D. K. Ferguson.

Shrubs to 1 m tall. Annotinous shoots green or greenish brown, without or with white bloom, prickly, occasionally sparsely stipitate glandular; prickles green. Leaves imparipinnate, 3-foliolate, rarely 5-foliolate; petiole 2–4 cm, petiolule of terminal leaflet 1–1.5 cm, lateral leaflets subsessile, petiolule and rachis thinly pubescent, prickly; stipules linear, 4–6 mm, thinly pubescent, with stalked glands; blade of leaflets ovate, rarely ovate-lanceolate, 3–6 × 1.5–4.5 cm, abaxially thinly pubescent, with sparse, needle-like prickles only along veins, adaxially glabrous or subglabrous, base cuneate to rounded, margin unevenly coarsely sharply serrate, apex acute, sometimes shortly acuminate. Inflorescences terminal, corymbs or flowers several in clusters in leaf axils; rachis and pedicels puberulous, with sparse, stalked glands; bracts linear-lanceolate, 3–5 mm, with soft hairs and stalked glands. Pedicel 1–2 cm. Flowers ca. 1 cm in diam. Calyx abaxially with soft hairs, needle-like prickles, and sparse, stalked glands; tube pelviform; sepals often erect after anthesis, triangular to triangular-lanceolate, 8–12 × 2–3.5 cm, apex acuminate to caudate. Petals white, oblong or spatulate, nearly as long as or somewhat shorter than sepals, base clawed. Stamens numerous, shorter than petals; filaments linear. Pistils many; ovary and base of style shortly gray tomentose. Aggregate fruit red, ovoid, ca. 1 cm in diam., shortly tomentose, aromatic; pyrenes rugulose. Fl. May–Jun, fr. Jul–Aug. $2n = 28^*$.

Forest margins, logged forests, rocky slopes; 500–1500 m. N Heilongjiang (Da Hinggan Ling), S Jilin (Changbai Shan), Liaoning [Korea, E Russia].

25. *Rubus pileatus* Focke, Hooker's Icon. Pl., ser. 3, 10: sub t. 1952. 1891.

菰帽悬钩子 *gu mao xuan gou zi*

Shrubs scandent, 1–3 m tall. Branchlets purple when young, brownish or grayish brown in age, glabrous, with sparse prickles, with white bloom. Leaves imparipinnate, usually 5–7-foliolate; petiole 3–10 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolules and rachis sparsely pubescent, with sparse, minute prickles; stipules lanceolate or linear-lanceolate, 8–10(–12) × 2–3 mm, pilose, glabrescent; blade of leaflets ovate, narrowly obovate, or elliptic, 2.5–6(–8) × 1.5–

4(–6) cm, both surfaces pubescent along veins, base subrounded or broadly cuneate, margin coarsely doubly serrate, sometimes slightly lobed on terminal leaflet, apex acute to acuminate. Inflorescences terminal, corymbose, 2–4 cm, 3–5-flowered, rarely flowers solitary; bracts linear, 6–7 mm, pilose when young, glabrescent. Pedicel (1.5–)2–3.5 cm, slender, glabrous, with sparse, minute prickles or unarmed. Flowers 1–1.5(–2) cm in diam. Calyx purple, abaxially glabrous; sepals reflexed in fruit, ovate-lanceolate, 7–10 × 2–4 mm, long caudate, margin tomentose. Petals white, obovate, slightly shorter than or nearly as long as sepals, base sparsely pubescent and shortly clawed. Stamens many, shorter than sepals; filaments linear. Pistils numerous; ovary and basal part of style densely long gray tomentose; styles elongated in fruit. Aggregate fruit red, ovoid-globose, 0.8–1.2 cm in diam. densely gray tomentose; style persistent; pyrenes distinctly rugose. Fl. Jun–Jul, fr. Aug–Sep.

• Sparse forests on roadsides, dense forests in montane valleys, river sides, ravines; 1400–2800 m. Gansu, Henan, Hubei, Qinghai, Shaanxi, Sichuan.

26. *Rubus pseudopileatus* Cardot, Notul. Syst. (Paris) 3: 308. 1914.

假帽莓 *jia mao mei*

Shrubs scandent, 1–2 m tall. Branchlets purple, with soft hairs and ± slender prickles. Leaves imparipinnate, 5–7-foliolate, rarely 3-foliolate; petiole 4–9 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolules and rachis with soft hairs and minute prickles; stipules linear or linear-lanceolate, soft hairy; blade of leaflets ovate or ovate-lanceolate, 4–8 × 2.5–5 cm, abaxially glabrous except pilose along veins, adaxially glabrous, base broadly cuneate to subrounded, margin irregularly incised-doubly serrate, apex acuminate, rarely acute. Inflorescences terminal, corymbose, 3–5-flowered, or flowers solitary in leaf axils; bracts linear or linear-lanceolate, soft hairy. Pedicel 1–2 cm, soft hairy, unarmed or prickly. Flowers 2–3 cm in diam. Calyx purple, abaxially puberulous to subglabrous, sometimes prickly; sepals erect after anthesis, triangular-lanceolate or triangular-ovate, 1–1.5 cm × 5–8 mm, apex acuminate, inner sepals with gray tomentose margin. Petals pink or white turning red, broadly obovate, slightly longer than or nearly as long as sepals, soft hairy basally, base shortly clawed. Stamens many in several whorls, unequal in length; filaments glabrous or slightly pilose. Pistils numerous, slightly longer or shorter than stamens; ovary and base of style densely long gray tomentose. Aggregate fruit red, ovoid-globose, 1.3–2 cm in diam., densely long gray tomentose; pyrenes shallowly rugose or ± smooth. Fl. Jun–Jul, fr. Aug–Sep.

• Forests and forest margins in mountainous regions, shaded montane valleys, sparsely forested slopes; 2100–3200 m. Sichuan.

- 1a. Pedicel soft hairy; abaxial surface of calyx soft hairy or subglabrous 26a. var. *pseudopileatus*
- 1b. Pedicel and abaxial surface of calyx glabrous.
 - 2a. Pedicel with dense needle-like prickles and sparse, stalked glands 26b. var. *kangdingensis*

- 2b. Pedicel unarmed or nearly unarmed, usually without stalked glands 26c. var. *glabratus*

26a. *Rubus pseudopileatus* var. *pseudopileatus*

假帽莓(原变种) jia mao mei (yuan bian zhong)

Pedicel soft hairy. Calyx abaxially soft hairy or subglabrous.

- Forests and forest margins in mountainous regions; 2300–3200 m. Sichuan.

26b. *Rubus pseudopileatus* var. *kangdingensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 299. 1982.

康定假帽莓 kang ding jia mao mei

Pedicel glabrous, with dense needle-like prickles and sparse, stalked glands. Calyx abaxially glabrous.

- C Sichuan (Kangding Xian).

26c. *Rubus pseudopileatus* var. *glabratus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 298. 1982.

光梗假帽莓 guang geng jia mao mei

Pedicel unarmed or nearly so, usually without stalked glands. Calyx abaxially glabrous margin.

- Shaded montane valleys, sparsely forested slopes; 2100–2900 m. W Sichuan.

27. *Rubus subinopertus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 18: 497. 1980.

紫红悬钩子 zi hong xuan gou zi

Shrubs 1–3 m tall. Branchlets brownish to purplish brown, terete, densely slender pubescent, glabrescent, with sparse, curved prickles. Leaves imparipinnate, (5–)7–9(–11)-foliolate; petiole 3–6 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolules and rachis slender pubescent, with sparse, curved minute prickles; stipules linear or linear-lanceolate, 5–7 mm, slender pubescent; blade of leaflets ovate to ovate-lanceolate, 4–7 × 2–4 cm, abaxially pubescent only along veins, adaxially soft hairy when young, glabrescent, base broadly cuneate to rounded, margin coarsely sharp doubly serrate or incised-doubly serrate, often pinnate-lobed on terminal leaflet, apex acuminate. Inflorescences terminal or axillary, corymbose or short racemes, 3–4.5 cm, terminal ones more than 10-flowered, axillary ones 3–5-flowered, rarely flowers solitary in leaf axils; rachis and pedicels finely pubescent; bracts linear or linear-lanceolate, 4–6 mm, puberulous. Pedicel 0.7–1.5 cm. Flowers 1–1.5 cm in diam. Calyx brownish purple, abaxially finely pubescent; sepals reflexed in fruit, ovate or triangular-lanceolate, 4–7 mm, margin tomentose, apex acute to acuminate. Petals pink or purplish red, obovate or suborbicular, 4–6 × 3–4(–5) mm, base shortly clawed and finely pubescent. Stamens many, shorter than petals; filaments linear. Pistils numerous, somewhat shorter than or nearly as long as stamens; ovary and base of style densely gray tomentose. Aggregate fruit yellowish red when immature, purplish red at maturity, semiglo-

bose, 0.8–1.2 cm in diam., densely shortly gray tomentose; pyrenes rugulose. Fl. Jun–Jul, fr. Aug–Sep.

- Thickets on slopes, forests, forest margins; 1300–2500 m. W Sichuan, SE Xizang, N Yunnan.

28. *Rubus gymdaensis* L. T. Lu & Boufford, nom. nov.

柔毛悬钩子 rou mao xuan gou zi

Replaced synonym: *Rubus pubifolius* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 18: 498. 1980, not L. H. Bailey (1945).

Shrubs. Branchlets purplish red, cylindric, pubescent, with slender prickles. Leaves imparipinnate, 5–7-foliate, rarely 3-foliate on flower bearing branchlets; petiole 4–7 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolules and rachis pubescent, with slender prickles; stipules linear or linear-lanceolate, pubescent; blade of leaflets variable in shape, terminal leaflet ovate or ovate-lanceolate, sometimes 3-lobed, lateral leaflets elliptic or ovate, 4–7 × 2–4.5 cm, both surfaces pubescent, more densely so abaxially, base broadly cuneate to rounded, margin irregularly slenderly sharply serrate, coarsely serrate, or doubly serrate, apex acute to shortly acuminate. Inflorescences often 1-flowered. Pedicel 4–6 cm, pubescent, with sparse, intermixed short glandular hairs, with needle-like prickles. Flowers to 2 cm in diam. Calyx abaxially pubescent, unarmed or with sparse, needle-like prickles; sepals spreading after anthesis, ovate or ovate-lanceolate, 1–1.8(–2.5) cm, apex caudate. Petals white. Stamens many, in 2 or 3 whorls, much shorter than sepals; filaments linear, somewhat broadened and flattened basally. Pistils numerous; ovary densely tomentose. Fruit unknown. Fl. Jul–Aug.

- Roadsides in mountains, forest margins, river sides; below 2400–4200 m. W Sichuan, Xizang.

- 1a. Leaflets pubescent on both surfaces, more densely so abaxially, margin sharply slenderly serrate or doubly serrate; sepals to 1.8 cm 28a. var. *gymdaensis*
- 1b. Leaflets sparsely pilose or pilose only along veins on both surfaces, margin coarsely serrate; sepals to 2.5 cm 28b. var. *glabriusculus*

28a. *Rubus gymdaensis* var. *gymdaensis*

柔毛悬钩子(原变种) rou mao xuan gou zi (yuan bian zhong)

Leaflets pubescent on both surfaces, more densely so abaxially, margin sharply slenderly serrate or doubly serrate. Sepals to 1.8 cm.

- Roadsides in mountains; ca. 4200 m. Xizang (Gongbo'gyamda Xian).

28b. *Rubus gymdaensis* var. *glabriusculus* (T. T. Yu & L. T. Lu) L. T. Lu & Boufford, comb. nov.

川西柔毛悬钩子 chuan xi rou mao xuan gou zi

Basionym: *Rubus pubifolius* var. *glabriusculus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 299. 1982.

Leaflets sparsely pilose or pilose only along veins on both surfaces, margin coarsely serrate. Sepals to 2.5 cm.

- Forest margins, river sides; below 2400 m. W Sichuan.

29. *Rubus thibetanus* Franchet, Nouv. Arch. Mus. Hist. Nat., ser. 2, 8: 221. 1885.

西藏悬钩子 xi zang xuan gou zi

Rubus veitchii Rolfe.

Shrubs 2–3 m tall. Branchlets reddish brown, cylindrical, initially densely soft hairy, glabrescent, with sparse prickles, with white bloom. Leaves imparipinnate, (5–)7–11(–13)-foliolate; petiole 1–2 cm, petiolule of terminal leaflet 0.7–1.5 cm, lateral leaflets sessile, petiolule and rachis with dense soft hairs and sparse, slender prickles; stipules linear-lanceolate, 4–8 mm, pubescent; blade of leaflets variable, terminal leaflet ovate-lanceolate, 2.5–6.5 × 1.5–2.5 cm, more than 2 × as long as lateral leaflets, margin often pinnately lobed, deeply incised or coarsely sharply serrate, apex long acuminate, lateral leaflets obliquely ovate or ovate-orbicular, 1–3 × 0.6–1.5 cm, margin with several large sharp teeth above middle, abaxially densely gray tomentose, adaxially pubescent. Inflorescences terminal, corymbose, 2–4 cm, 3–8-flowered, rarely flowers solitary in leaf axils; rachis and pedicels densely pubescent; bracts linear, 4–6 mm, pubescent. Pedicel 1–1.5 cm. Flowers 1–1.2 cm in diam. Calyx abaxially densely pubescent; sepals spreading at anthesis, reflexed in fruit, triangular-lanceolate, 5–7 × 2–4 mm, apex acuminate. Petals pink or purplish red, orbicular-ovate, 3–4.5 × 3–4 mm. Stamens numerous, purplish red; filaments linear. Pistils nearly as long as stamens; ovary densely pubescent; styles ca. 3 mm, glabrous. Aggregate fruit purplish black or dark red, subglobose, 8–10 mm in diam., densely gray pubescent; pyrenes densely rugulose. Fl. Jun, fr. Aug.

- Thickets, forest margins, roadsides, slopes, ravines, dry places; 900–2100 m. Gansu, Shaanxi, Sichuan, Xizang.

30. *Rubus phoenicolasius* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, ser. 3, 17: 160. 1872.

多腺悬钩子 duo xian xuan gou zi

Shrubs 1–3 m tall. Branches upright at first, finally scrambling, densely pubescent, with intermixed reddish brown bristles, stalked glands, and sparse prickles. Leaves imparipinnate, 3-foliolate, rarely 5-foliolate; petiole 3–6 cm, petiolule of terminal leaflet 2–3 cm, lateral leaflets subsessile, petiolule and rachis pubescent, with intermixed reddish brown bristles, stalked glands, and sparse prickles; stipules linear, 5–8 mm, pubescent, with intermixed glandular hairs; blade of leaflets ovate, broadly ovate, or rhombic, rarely elliptic, 4–8(–10) × 2–5(–7) cm, abaxially densely gray tomentose, bristly, stipitate glandular, with sparse, minute needle-like prickles, adaxially appressed pubescent or pubescent only along veins, base rounded to subcordate, margin irregularly roughly serrate, usually incised, terminal leaflet often lobed, apex acute to acuminate. Inflorescences terminal or axillary, short racemes, few flowered, terminal racemes 6–10 cm, lateral ones shorter; rachis, pedicels, and abaxial surface of calyx densely pubescent, bristly, stipitate glandular; bracts lanceolate, 5–8 mm, pubescent, stipitate

glandular, margin entire or apically 2-lobed. Pedicel 0.5–1.5 cm. Flowers 6–10 mm in diam. Sepals erect, lanceolate, 1–1.5 cm × 4–7 mm, apex caudate. Petals purplish red, obovate-spatulate or suborbicular, much longer than sepals, base long clawed and pubescent. Stamens many, nearly as long as or slightly shorter than petals. Pistils somewhat longer than stamens; ovary glabrous or puberulous. Aggregate fruit orange or red, subglobose, ca. 1 cm in diam., glabrous; pyrenes prominently rugose, pitted. Fl. May–Jun, fr. Jul–Aug. $2n = 14$.

Roadsides, montane valleys; low to medium elevations. Gansu, Henan, Hubei, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan [Japan, Korea; naturalized in Europe and North America].

31. *Rubus ellipticus* Smith in Rees, Cycl. 30: *Rubus* no. 16. 1819.

椭圆悬钩子 tuo yuan xuan gou zi

Shrubs 1–3 m tall. Branchlets purplish brown or brownish, pubescent, with sparse, curved prickles and dense, purplish brown bristles or glandular hairs. Leaves imparipinnate, 3-foliolate; petiole 2–6 cm, petiolule of terminal leaflet 2–3 cm, lateral leaflets subsessile, petiolule and rachis purplish red bristly, pubescent, with minute prickles; stipules linear, 7–11 mm, pubescent, with intermixed glandular hairs; blade of leaflets elliptic or obovate, 4–8(–12) × 3–6(–9) cm, terminal leaflet much larger than lateral leaflets, abaxially densely tomentose, with purplish red bristles along prominent veins, adaxially veins impressed, pubescent along midvein, base rounded, margin unevenly minute sharply serrate, apex acute, abruptly pointed, shallowly cordate, or subtruncate. Inflorescences terminal, dense glomerate racemes, (1.5–)2–4 cm, flowers several to 10 or more, or flowers several in clusters in leaf axils, rarely flowers solitary; rachis and pedicels pubescent, bristly; bracts linear, 5–9 mm, pubescent. Pedicel 4–6 mm. Flowers 1–1.5 cm in diam. Calyx abaxially pubescent, intermixed yellowish tomentose, sparsely bristly; sepals erect, ovate, 4–5(–6) × 2–3(–4) mm, abaxially densely yellowish gray tomentose, apex acute and abruptly pointed. Petals white or pink, spatulate, longer than sepals, margin premorse, densely pubescent, base clawed. Stamens numerous, shorter than petals; filaments broadened and flattened basally. Ovary pubescent; styles glabrous, slightly longer than stamens. Aggregate fruit golden yellow, subglobose, ca. 1 cm in diam., glabrous or drupelets pubescent at apex; pyrenes triangular-ovoid, densely rugulose. Fl. Mar–Apr, fr. Apr–May. $2n = 14$.

Slopes, montane valleys, sparse forests, thickets, roadsides; 300–2600 m. Guangxi, Guizhou, Sichuan, S Xizang, Yunnan [Bhutan, India, Laos, Myanmar, Nepal, Pakistan, Philippines, Sikkim, Sri Lanka, Thailand, Vietnam].

Rubus fasciculatus Duthie var. *tomentosus* Cardot (Notul. Syst. (Paris) 3: 314. 1917), described from Yunnan based on *P. Nguouo* s.n. and *Ducloux 5147*, is probably a synonym of *R. ellipticus*; the present authors have not seen the syntypes.

- 1a. Leaflets elliptic, apex acute or abruptly pointed; pedicel and abaxial surface of calyx bristly 31a. var. *ellipticus*
- 1b. Leaflets obovate, apex shallowly cordate or subtruncate; pedicel and abaxial

surface of calyx with few bristles 31b. var. *obcordatus*

31a. *Rubus ellipticus* var. *ellipticus*

椭圆悬钩子(原变种) tuo yuan xuan gou zi (yuan bian zhong)

Leaflets elliptic, apex acute or abruptly pointed. Pedicel and abaxial surface of calyx bristly.

Dry slopes, montane valleys, sparse forests; 1000–2600 m. Sichuan, S Xizang, Yunnan [Bhutan, NE India, Laos, Myanmar, Nepal, Pakistan, Philippines, Sikkim, Sri Lanka, Thailand, Vietnam].

31b. *Rubus ellipticus* var. *obcordatus* (Franchet) Focke, Biblioth. Bot. 17(Heft 72): 199. 1911.

栽秧泡 zai yang pao

Rubus ellipticus Smith f. *obcordatus* Franchet, Pl. Delavay. 206. 1890; *Rubus obcordatus* (Franchet) Thuan.

Leaflets obovate, apex shallowly cordate or subtruncate. Pedicel and abaxial surface of calyx very sparsely bristly.

Slopes, roadsides, thickets; 300–1000 m. Guangxi, Guizhou, Sichuan, SE Xizang, Yunnan [India, Laos, Thailand, Vietnam].

32. *Rubus stimulans* Focke, Notes Roy. Bot. Gard. Edinburgh 5: 74. 1911.

华西悬钩子 hua xi xuan gou zi

Rubus chinensis Franchet (1890), not Thunberg (1813), nor Seringe (1825); *R. chinensis* Franchet var. *concolor* Cardot; *R. stimulans* var. *concolor* (Cardot) C. Y. Wu.

Shrubs 1–2 m tall. Branchlets brown or reddish brown to purplish brown, soft hairy at first, gradually glabrescent, glabrous when old, with needle-like prickles, with sparse, stalked glands. Leaves imparipinnate, 5–7-foliolate; petiole 4–8 cm, petiolule of terminal leaflet 1.5–3 cm, lateral leaflets subsessile, petiolule and rachis pubescent, with needle-like prickles, or with intermixed sparse, stalked glands; stipules lanceolate or linear lanceolate, 7–11 mm, pubescent or with sparse, stalked glands, blade of leaflets ovate to ovate-lanceolate, 4–8 × 2–6 cm, abaxially densely gray tomentose, adaxially sparsely pubescent, base rounded, often subtruncate on terminal leaflet, margin irregularly pinnate-lobed, sharply incised doubly serrate, apex acute to acuminate. Inflorescences terminal on short branchlets, 2- or 3-flowered, or flowers solitary in leaf axils; bracts linear, 5–8 mm, pubescent. Pedicel 1–2.5 cm, with abaxial surface of calyx pubescent, with needle-like prickles or with sparse, stipitate glandular hairs. Flowers 1.2–2 cm in diam. Calyx tube pelviform; sepals erect, spreading, ovate-lanceolate, 1.5–2 cm × 4–6 mm, margin gray tomentose, apex caudate. Petals pink or white with red spots, obovate or suborbicular, 5–6 mm in diam., much shorter than sepals, base pubescent and shortly clawed. Stamens numerous in 1 whorl, slightly shorter than or nearly as long as petals; filaments purplish red, linear. Pistils many, longer than stamens; style and ovary glabrous, rarely sparsely pilose. Aggregate fruit red, subglobose, 1–1.5 cm in diam., glabrous; pyrenes shallowly rugose or pitted. Fl. Jun–Jul, fr. Aug–Sep.

- Coniferous forests, thickets in mountainous areas; 2000–4100

m. SE Xizang, NW Yunnan.

33. *Rubus parvifolius* Linnaeus, Sp. Pl. 2: 1197. 1753.

茅莓 mao mei

Shrubs 1–2 m tall, with arching branches. Branchlets grayish brown or reddish brown to blackish brown, with soft hairs and sparse, curved prickles. Leaves imparipinnate, 3–5-foliolate; petiole 2.5–5 cm, terminal leaflet 1–2 cm, petiolulate, lateral leaflets subsessile, with soft hairs and sparse, minute prickles; stipules linear, 7–10 mm, soft hairy; blade of leaflets rhombic-orbicular or obovate, 2.5–6 × 2–6 cm, abaxially densely gray tomentose, adaxially appressed-pilose, base rounded or broadly cuneate, margin unevenly coarsely serrate or coarsely incised-doubly serrate, often lobed, apex obtuse or acute. Inflorescences terminal, corymbose, rarely short racemes, 4–8 cm, several to many flowered, axillary inflorescences corymbose; rachis and pedicels pubescent, with minute prickles; bracts linear, 6–10 mm, pubescent. Pedicel 0.5–1.5 cm. Flowers ca. 1 cm in diam. Calyx abaxially densely pubescent, with unequal long needle-like prickles; sepals erect, spreading, ovate-lanceolate or lanceolate, 5–8 × 2–4 mm, apex acuminate, occasionally lacinate. Petals pink to purplish red, ovate-orbicular or oblong, 4–6 × 3–4 mm, base clawed. Stamens numerous, somewhat shorter than petals; filaments white, linear. Pistils slightly longer than or ca. as long as stamens; ovary pubescent. Aggregate fruit red, ovoid-globose, 1–1.5 cm in diam., glabrous or somewhat pubescent; pyrenes shallowly rugose. Fl May–Jun, fr. Jul–Aug. $2n = 14^*, 21^*, 28^*$.

Forests, thickets, clearings, slopes, sunny valleys, roadsides, waste places; 400–2700 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Ningxia, Qinghai, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea, Vietnam].

The fruit are eaten raw and are also used for making jam, jelly, juice, syrup, candy, wine, and vinegar. The dried fruit are used in traditional Chinese medicine. The young plants are used as a substitute for tea, and the stems and roots are a source of tannin.

- 1a. Leaves 5-foliolate 33c. var. *toapiensis*
- 1b. Leaves 3-foliolate.
 - 2a. Inflorescence rachis, pedicels, and abaxial surface of calyx without rust colored stalked glands 33a. var. *parvifolius*
 - 2b. Inflorescence rachis, pedicels, and abaxial surface of calyx with rust colored stalked glands 33b. var. *adenochlamys*

33a. *Rubus parvifolius* var. *parvifolius*

茅莓(原变种) mao mei (yuan bian zhong)

Rubus parvifolius subvar. *subconcolor* (Cardot) Masamune; *R. parvifolius* var. *subconcolor* (Cardot) Makino & Nemoto; *R. parvifolius* var. *triphyllus* (Thunberg) Nakai; *R. pauciflorus* Baker; *R. taquetii* H. Léveillé; *R. triphyllus* Thunberg; *R. triphyllus* var. *eglandulosus* L. H. Bailey; *R. triphyllus* var. *subconcolor* Cardot.

Leaves 3-foliolate. Inflorescence rachis, pedicels, and abaxial surface of calyx without rust colored stalked glands.

Mixed forested slopes, sunny valleys, roadsides, waste places; 400–2600 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Ningxia, Shaanxi, Shandong, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea, Vietnam].

33b. *Rubus parvifolius* var. *adenochlamys* (Focke) Migo, J. Shanghai Sci. Inst. 3: 169. 1939.

腺花茅莓 xian hua mao mei

Rubus triphyllus Thunberg var. *adenochlamys* Focke, Bot. Jahrb. Syst. 36(Beibl. 82): 55. 1905; *R. adenochlamys* (Focke) Focke; *R. adenochlamys* var. *orientalis* F. P. Metcalf; *R. triphyllus* var. *oukiakiensis* Pampanini.

Leaves 3-foliolate. Inflorescence rachis, pedicels, and abaxial surface of calyx with rust colored stalked glands.

Sunny slopes, forests; 500–2700 m. Gansu, Hebei, Henan, Hubei, Hunan, Jiangsu, Qinghai, Shaanxi, Shanxi, Sichuan, Zhejiang [Japan].

33c. *Rubus parvifolius* var. *toapiensis* (Yamamoto) Hosokawa in Makino, Fl. Jap. Suppl. 352. 1936.

五叶红梅消 wu ye hong mei xiao

Rubus triphyllus Thunberg var. *toapiensis* Yamamoto, J. Soc. Trop. Agric. 4: 305. 1932.

Leaves 5-foliolate.

- Thickets, clearings; low elevations. E Taiwan.

34. *Rubus erythrocarpus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 299. 1982.

红果悬钩子 hong guo xuan gou zi

Shrubs 1–2 m tall. Branchlets reddish brown or purplish brown to purplish black, cylindric, glabrous, with ± slender prickles, without stalked glands. Leaves imparipinnate, usually 3-foliolate; petiole 4–7 cm, petiolule of terminal leaflet 1.5–3 cm, lateral leaflets subsessile, glabrous or pilose, rarely with sparse, stalked glands, with ± slender prickles; stipules linear or linear-lanceolate, 7–9 mm, glabrous; blade of leaflets 4–10 × 2.5–6 cm, terminal one ovate to ovate-lanceolate, base rounded to shallowly cordate, lateral leaflets ovate or elliptic, base broadly cuneate to rounded, abaxially densely gray tomentose, with sparse, slender prickles along veins, adaxially pilose, margin coarsely incised-doubly serrate or irregularly sharply serrate, apex acute to shortly acuminate. Inflorescences terminal or axillary, corymbose, 3–4(–5) cm, 3- or 4-flowered, sometimes flowers solitary in leaf axils; rachis and pedicels glabrous, with ± slender prickles, without stalked glands; bracts linear, 5–7 mm, glabrous. Pedicel 1–2.5 cm. Flowers 1.5–2 cm in diam. Calyx abaxially usually glabrous, with needle-like prickles, occasionally with sparse, stalked glands; sepals erect, rarely reflexed in fruit, lanceolate or ovate-lanceolate, 1–1.5 cm × 3–5 mm, often tomentose at margin, caudate. Petals pink, elliptic or obovate, shorter than sepals, puberulous. Stamens numerous in 1 whorl, shorter than petals; filaments linear. Pistils many,

slightly shorter than stamens; ovary pilose. Aggregate fruit red, subglobose, 1–1.5 cm in diam., glabrous at maturity; pyrenes densely rugulose. Fl. Jul–Aug, fr. Sep–Oct.

- Rocky slopes, thickets, mixed forests; 3000–3800 m. NW Yunnan.

- 1a. Abaxial surface of calyx with few needle-like prickles, without stalked glands or occasionally with sparse, stalked glands 34a. var. *erythrocarpus*
1b. Abaxial surface of calyx with dense needle-like prickles and stalked glands 34b. var. *weixiensis*

34a. *Rubus erythrocarpus* var. *erythrocarpus*

红果悬钩子(原变种) hong guo xuan gou zi (yuan bian zhong)

Abaxial surface of calyx with few needle-like prickles, without stalked glands or occasionally with sparse, stalked glands.

- Rocky slopes, thickets; 3000–3800 m. NW Yunnan.

34b. *Rubus erythrocarpus* var. *weixiensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 300. 1982.

腺萼红果悬钩子 xian e hong guo xuan gou zi

Abaxial surface of calyx with dense needle-like prickles and stalked glands.

- Mixed forests; below 3200 m. NW Yunnan (Weixi Xian).

35. *Rubus subornatus* Focke, Notes Roy. Bot. Gard. Edinburgh 5: 77. 1911.

美饰悬钩子 mei shi xuan gou zi

Shrubs 1–3 m tall. Branchlets grayish brown or brown to purplish red, initially soft hairy, glabrescent, glabrous when old, with sparse, slender prickles. Leaves imparipinnate, usually 3-foliolate. Petiole 4–8 cm, petiolule of terminal leaflet 1.5–3.5 cm, lateral leaflets shortly petiolulate or subsessile, with soft hairs or sparse prickles; stipules linear-lanceolate, 0.8–1.5 cm, pubescent; blade of leaflets broadly ovate to narrowly ovate, 4–8 × 2.5–5.5 cm, abaxially densely gray tomentose, adaxially pilose, basally rounded to shallowly cordate on terminal leaflet, broadly cuneate to subrounded on lateral leaflets, margin coarsely sharply serrate or incised-doubly serrate, sometimes pinnately lobed, apex shortly acuminate or acute. Inflorescences terminal, corymbose, 3–5 cm, 6–10-flowered, or flowers solitary or in clusters of 2 or 3 in leaf axils; rachis and pedicels pubescent, ± with needle-like prickles; bracts linear, 6–12 mm, pubescent. Pedicel 1–2.5 cm, sometimes with sparse, stipitate glands. Flowers 2–3 cm in diam. Calyx abaxially gray pubescent, intermixed tomentose, sometimes with needle-like prickles and stipitate glands; tube pelviform; sepals erect, spreading after anthesis, triangular-lanceolate, unequal in length, longer sepals to 1.5 cm, shorter sepals only (6–)7–10 mm, margin gray tomentose and entire, apex caudate. Petals purplish red, obovate, 7–10 × 5–7 mm, both surfaces puberulous, base shortly clawed. Stamens many in 1 whorl, slightly shorter than petals; filaments linear, glabrous. Pistils numerous, somewhat shorter

than stamens; ovary ± pubescent. Aggregate fruit red, ovoid-globose, 8–11 mm in diam., glabrous or slightly pilose; pyrenes prominently rugose. Fl. May–Jun, fr. Aug–Sep.

Slopes, thickets, roadsides, forests, ravines; 1900–4000 m. W Sichuan, E Xizang, NW Yunnan [N Myanmar].

- 1a. Branchlets, petioles, and inflorescences without stipitate glands 35a. var. *subornatus*
- 1b. Branchlets, petioles, and inflorescences with purplish black or purplish brown stipitate glands 35b. var. *melanadenus*

35a. *Rubus subornatus* var. *subornatus*

美饰悬钩子(原变种) *mei shi xuan gou zi* (yuan bian zhong)

Rubus parvifolius Linnaeus f. *parce* Focke; *R. parvifolius* var. *purpureus* Y. Gu & W. L. Li; *R. subornatus* var. *concolor* Cardot; *R. subornatus* var. *fockeii* H. Léveillé.

Branchlets, petioles, and inflorescences without stipitate glands.

Thickets on rocky slopes, mixed forests in valleys, ravines; 1900–4000 m. W Sichuan, SE Xizang, NW Yunnan [N Myanmar].

35b. *Rubus subornatus* var. *melanadenus* Focke, Biblioth. Bot. 19(Heft 83): 47. 1914.

黑腺美饰悬钩子 *hei xian mei shi xuan gou zi*

Rubus vicarius Focke.

Branchlets, petioles, and inflorescences with purplish black or purplish brown stipitate glands.

• Slopes, roadsides, thickets, forests; 2700–4000 m. W Sichuan, E Xizang, NW Yunnan.

36. *Rubus kulinganus* L. H. Bailey, Gentes Herb. 1: 30. 1920.

牯岭悬钩子 *gu ling xuan gou zi*

Shrubs 1–2 m tall. Branchlets brown or reddish brown, pubescent at first, glabrescent, glabrous when old, nearly unarmed or with sparse prickles. Leaves imparipinnate, 3-foliate; petiole 5–9 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile or shortly petiolulate, pubescent, with sparse, needle-like prickles; stipules linear, 5–7 mm, pubescent; blade of leaflets lanceolate or oblong-lanceolate, 4–8(–10) × 1.5–3(–4) cm, abaxially densely gray tomentose, adaxially glabrous, base rounded or broadly cuneate, margin irregularly roughly sharply serrate, apex acuminate. Inflorescences usually terminal, corymbose or short racemes, (3–)4–5 cm, several to more than 10-flowered; rachis and pedicels pubescent; bracts lanceolate or linear, 5–6 mm, pubescent. Pedicel 0.5–1 cm. Flowers 6–9 mm in diam. Calyx abaxially densely white tomentose, with intermixed straight hairs; sepals erect in flower and fruit, ovate, 5–6 × 2–3 mm, apex acute, cuspidate. Petals purplish red, broadly elliptic or narrowly obovate, tomentose, base long clawed. Stamens many, nearly as long as petals; filaments broadened and flattened basally. Pistils numerous, nearly as long as or slightly shorter than stamens; ovary and base of style pubescent. Aggregate fruit red, subglobose, less than 1 cm

in diam., pilose; pyrenes shallowly rugose. Fl. May–Jun, fr. Jul.

• Mixed forested slopes, hillsides; below 2000 m. Anhui Jiangxi, Zhejiang.

37. *Rubus mesogaeus* Focke, Bot. Jahrb. Syst. 29: 399. 1900.

喜阴悬钩子 *xi yin xuan gou zi*

Shrubs scandent, 1–4 m tall. Branchlets reddish brown or purplish brown, with soft hairs and sparse, needle-like prickles or nearly unarmed, old branches grayish brown, with sparse prickles broadened basally. Leaves imparipinnate, often 3-foliate, rarely 5-foliate; petiole 3–7 cm, petiolule of terminal leaflet 1.5–4 cm, lateral leaflets shortly petiolulate or subsessile, petiolules and rachis pubescent, with sparse, curved minute prickles; stipules linear, to 1.2 cm, pubescent, margin entire; blade of leaflets variable in shape, terminal leaflet broadly rhombic-ovate or elliptic-ovate, base rounded to subcordate, margin often pinnate-lobed, apex acuminate, lateral leaflets obliquely elliptic or ovate, 4–9(–11) × 3–7(–9) cm, abaxially densely gray tomentose, adaxially appressed pubescent or glabrescent, base cuneate to rounded, margin unevenly coarsely serrate, often lobed, apex acute. Inflorescences terminal or axillary, corymbose, (2–)3–4.5 cm, shorter than petiole, several to more than 20-flowered; rachis and pedicels pubescent, with sparse, needle-like prickles; bracts linear, 7–10 mm, pubescent. Pedicel 6–12 mm. Flowers ca. 1 cm or more in diam. Calyx abaxially densely pubescent; sepals often reflexed after anthesis, lanceolate, (4–)5–8 × 3–4 mm, inner sepals with tomentose margin, apex acute to shortly acuminate. Petals white or pink, obovate, suborbicular, or elliptic, 5–6 × 4–5 mm, premorse, base slightly pubescent and shortly clawed. Stamens many, ca. as long as petals. Styles glabrous; ovary pilose. Aggregate fruit purplish black, compressed globose, 6–8 mm in diam., glabrous; pyrenes triangularly ovoid-globose, rugose. Fl. Apr–May, fr. Jul–Aug. $2n = 14^*$.

Forests, slopes, montane valleys, river banks, stream sides, near water courses, roadsides; 600–3600 m. Chongqing, Gansu, Guizhou, Henan, Hubei, Shaanxi, Sichuan, Taiwan, Xizang, Yunnan [Bhutan, Japan, Nepal, Sikkim, Russia (Sakhalin)].

- 1a. Leaflets tomentose in fruit, glabrescent, subglabrous abaxially 37c. var. *glabrescens*
- 1b. Leaflets persistently tomentose abaxially.
 - 2a. Branchlets, petioles, and pedicel without stalked glands 37a. var. *mesogaeus*
 - 2b. Branchlets, petioles, and pedicels ± with stalked glands 37b. var. *oxycomus*

37a. *Rubus mesogaeus* var. *mesogaeus*

喜阴悬钩子(原变种) *xi yin xuan gou zi* (yuan bian zhong)

Rubus eous Focke; *R. euleucus* Focke ex Handel-Mazzetti; *R. idaeus* Linnaeus var. *exsuccus* Franchet & Savatier; *R. illudens* H. Léveillé; *R. kinashii* H. Léveillé & Vaniot; *R. kinashii* f. *macrophyllus* Cardot; *R. kinashii* f. *microphyllus* Cardot; *R. mesogaeus* var. *incisus* Cardot; *R. occidentalis* H. Léveillé; *R. occidentalis* var. *exsuccus* (Franchet & Savatier) Makino; *R. occidentalis* var. *japonicus* Miyabe; *R. rarissimus* Hayata.

Leaflets persistently tomentose abaxially. Branchlets, petioles, and pedicels without stalked glands.

Slopes, forest understories in montane valleys, river banks; 600–3600 m. Gansu, Guizhou, Henan, Hubei, Shaanxi, Sichuan, Taiwan, Xizang, Yunnan [Bhutan, Japan, Nepal, Sikkim, Russia (Sakhalin)].

37b. *Rubus mesogaeus* var. *oxycomus* Focke, Bot. Jahrb. Syst. 29: 399. 1900.

腺毛喜阴悬钩子 *xian mao xi yin xuan gou zi*

Leaflets persistently tomentose abaxially. Branchlets, petioles, and pedicels ± with stalked glands.

• Mixed forested slopes, montane valleys, roadsides, stream sides; below 2800 m. Gansu, Shaanxi, Sichuan, Yunnan.

37c. *Rubus mesogaeus* var. *glabrescens* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 300. 1982.

脱毛喜阴悬钩子 *tu o mao xi yin xuan gou zi*

Leaflets tomentose at first, glabrescent, subglabrous when old abaxially.

• Broad-leaved evergreen forests, near water courses; 2000–2200 m. Chongqing (Jinfo Shan), S Sichuan (Leibo Xian).

38. *Rubus subtibetanus* Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 57: 268. 1920.

密刺悬钩子 *mi ci xuan gou zi*

Shrubs climbing, 1–2 m tall. Old branches brown or reddish brown, pubescent, with dense unequal needle-like prickles and basally broadened short prickles; branchlets dark green, more with dense, needle-like prickles. Leaves imparipinnate, 3–5-foliolate; petiole 2.5–4.5 cm, petiolule of terminal leaflet 1.5–2.5 cm, lateral leaflets subsessile, petiolules and rachis pubescent, with dense, needle-like prickles; stipules linear-lanceolate, 7–10 mm, pubescent; terminal leaflet broadly ovate to ovate-lanceolate, base truncate to subcordate, margin often pinnately lobed, apex acuminate, slightly longer than lateral leaflets, lateral leaflets oblique-elliptic or oblique-ovate, 2–5 × 1.5–4 cm, abaxially densely gray to yellowish gray tomentose, adaxially pubescent, margin irregularly or incised roughly serrate, base rounded or broadly cuneate, apex acute to shortly acuminate. Inflorescences terminal or axillary, corymbose, 2–4 cm; rachis and pedicels pubescent, with dense, needle-like prickles; bracts linear, 5–7 mm, pubescent. Pedicel 6–10 mm. Flowers 6–8 mm in diam. Calyx abaxially densely pubescent; sepals erect at anthesis, reflexed in fruit, narrowly ovate to ovate-lanceolate, 5–7 × 2–3 mm, apex acute to acuminate. Petals white, with red or purplish red spots, suborbicular or obovate, 5–6 mm in diam., slightly longer than sepals, base puberulous. Stamens many, somewhat shorter than petals; filaments linear, glabrous. Pistils slightly longer than stamens; ovary pubescent; styles glabrous. Aggregate fruit blue-black at maturity, subglobose, 6–8 mm in diam., puberulous; pyrenes smooth or rugulose. Fl. May–Jun, fr. Jun–Jul.

• Slopes, thickets, valleys; below 2300 m. Gansu, Shaanxi, Sichuan.

1a. Branchlets, petioles, pedicel, and

abaxial surface of calyx without glandular hairs 38a. var. *subtibetanus*

1b. Branchlets, petioles, pedicel, and abaxial surface of calyx with dense, glandular hairs 38b. var. *glandulosus*

38a. *Rubus subtibetanus* var. *subtibetanus*

密刺悬钩子(原变种) *mi ci xuan gou zi (yuan bian zhong)*

Branchlets, petioles, pedicel, and abaxial surface of calyx without glandular hairs.

• Slopes, thickets, valleys; below 2300 m. Gansu, Shaanxi, Sichuan.

38b. *Rubus subtibetanus* var. *glandulosus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 300. 1982.

脱毛密刺悬钩子 *tu o mao mi ci xuan gou zi*

Branchlets, petioles, pedicel, and abaxial surface of calyx with dense, glandular hairs.

• Slopes, thickets, valleys; below 2300 m. Gansu, C Sichuan (Baoping Xian).

39. *Rubus biflorus* Buchanan-Hamilton ex Smith in Rees, Cycl. 30: *Rubus* no. 9. 1819.

粉枝莓 *fen zhi mei*

Shrubs climbing, 1–3 m tall. Branchlets purplish brown to brownish, glabrous, with sparse, robust curved prickles and glaucous bloom. Leaves imparipinnate, 3-foliolate, rarely 5-foliolate; petiole 2–4(–5) cm, petiolule of terminal leaflet 1–2.5 cm, lateral leaflets subsessile, glabrous, rarely pilose, sparsely stipitate glandular; stipules narrowly lanceolate, 6–8 mm, pubescent, with few stipitate glands; terminal leaflet blade broadly ovate or suborbicular, lateral blade of leaflets ovate or elliptic, 2.5–5 × 1.5–4(–5) cm, abaxially densely gray or yellowish gray tomentose, with sparse, minute prickles along midvein, adaxially appressed pubescent, base broadly cuneate to rounded, margin unevenly coarsely serrate or doubly serrate, often 3-lobed on terminal leaflet, apex acute or acuminate. Inflorescences terminal, rarely axillary, corymbs, 4–6 cm, often 4–8-flowered, or flowers 2 to several in clusters in leaf axils; rachis and pedicels glabrous, with needle-like prickles; bracts linear or narrowly lanceolate, 4–7 mm, glabrous, rarely pilose. Pedicel (1–) 2–3 cm. Flowers 1.5–2 cm in diam. Calyx abaxially glabrous; sepals erect, spreading at anthesis, broadly ovate or orbicular-ovate, 6–8 × 5–7 mm, apex acute, apiculate. Petals white, suborbicular, 7–8 mm in diam., longer than sepals. Stamens many, shorter than petals; filaments linear, broader at base. Pistils somewhat shorter than stamens; apex of ovary and base of style densely gray tomentose. Aggregate fruit enclosed in calyx, yellow, globose, 1–1.5(–2) cm in diam., glabrous; drupelets apically with persistently tomentose styles; pyrenes reniform, densely rugulose. Fl. May–Jun, fr. Jul–Aug.

Valleys, river sides, slopes, roadsides, thickets, forests, forest margins; 1500–3500 m. Gansu, Guizhou, Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, NE India, Kashmir, Myanmar, Nepal, Sikkim].

- 1a. Petioles, pedicel, and abaxial surface of calyx glabrous, usually without stalked glands 39a. var. *biflorus*
- 1b. Petioles, pedicel, and abaxial surface of calyx hairy, with or without stalked glands.
 - 2a. Petioles, pedicels, and abaxial surface of calyx tomentose, with sparse, stalked glands 39b. var. *adenophorus*
 - 2b. Petioles, pedicel, and abaxial surface of calyx densely pubescent, without stalked glands 39c. var. *pubescens*

39a. *Rubus biflorus* var. *biflorus*

粉枝莓(原变种) fen zhi mei (yuan bian zhong)

Rubus biflorus var. *quinqueflorus* Focke; *R. biflorus* var. *spinocalycinus* Y. Gu & W. L. Li.

Petioles, pedicel, and abaxial surface of calyx glabrous, often without stalked glands.

Valleys, river sides, mixed forests in mountainous regions; 1500–3500 m. Gansu, Guizhou, Shaanxi, Sichuan, Xizang, Yunnan [Bhutan, NE India, Kashmir, Myanmar, Nepal, Sikkim].

39b. *Rubus biflorus* var. *adenophorus* Franchet, Pl. Delavay. 207. 1890.

腺毛粉枝莓 xian ma fen zhi mei

Rubus biflorus f. *parceglanduliger* Focke.

Petioles, pedicel, and abaxial surface of calyx tomentose, with sparse, stalked glands.

- Forests, forest margins; below 3000 m. S Xizang, NW Yunnan.

39c. *Rubus biflorus* var. *pubescens* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 300. 1982.

柔毛粉枝莓 rou mao fen zhi mei

Petioles, pedicel, and abaxial surface of calyx densely pubescent, without stalked glands.

- Slopes, roadsides, thickets; below 2500 m. S Sichuan (Yanyuan Xian).

40. *Rubus alexeterius* Focke, Notes Roy. Bot. Gard. Edinburgh 5: 75. 1911.

刺萼悬钩子 ci e xuan gou zi

Shrubs 1–2 m tall. Old branches reddish brown, glabrous, glaucous and curved prickles 6–8 mm; flower bearing branchlets short, densely villous, with curved minute prickles. Leaves imparipinnate, 3-foliolate, rarely 5-foliolate; petiole 2.5–3.5 cm, petiolule of terminal leaflet 0.5–1 cm, lateral leaflets subsessile, petiolules and rachis densely villous, with sparse, curved minute prickles; stipules linear or subulate, 4–6 mm, villous; terminal leaflet rhombic, rarely ovate, lateral leaflets ovate or elliptic, 3–4(–5) × 1.5–3 cm, abaxially densely gray tomentose, adaxially appressed villous, base cuneate to rounded, margin irregularly sharply serrate or incised doubly serrate above middle, sometimes 3-lobed or incised-lobed on terminal leaflet,

apex acute. Inflorescences clusters of 3 or 4 flowers at apex of short lateral branchlets, or flowers solitary in leaf axils. Pedicel 1–2(–3) cm, villous, with slender prickles. Flowers 1.5–2 cm in diam. Calyx 1.5–2 cm, abaxially villous, with needle-like prickles; tube pelviform; sepals erect, spreading, ovate-lanceolate or lanceolate, unequal in length, longer sepals to 1.5 cm, shorter sepals 6–10 mm, occasionally with sparse, glandular hairs, apex caudate and enlarged, sometimes divided. Petals white, suborbicular, shorter than sepals, base very shortly clawed. Stamens shorter than petals; filaments linear or basally somewhat broadened. Pistils many, shorter than stamens; ovary glabrous or tomentose only at apex; styles densely white tomentose basally. Aggregate fruit yellow, globose, 1.2–1.5(–2) cm in diam., glabrous, enclosed in calyx; drupelets apically with persistently tomentose styles; pyrenes reniform, shallowly rugulose. Fl. Apr–May, fr. Jun–Jul.

Montane valleys, stream sides, waste slopes, forested slopes, forest clearings and margins; 2000–3700 m. Sichuan, Xizang, Yunnan [Bhutan, Nepal].

- 1a. Petioles, pedicel, and abaxial surface of calyx without glandular hairs 40a. var. *alexeterius*
- 1b. Petioles, pedicel, and abaxial surface of calyx with prominent glandular hairs 40b. var. *acaenocalyx*

40a. *Rubus alexeterius* var. *alexeterius*

刺萼悬钩子(原变种) ci e xuan gou zi (yuan bian zhong)

Petioles, pedicel, and abaxial surface of calyx without glandular hairs.

Montane valleys, stream sides, waste slopes, forest clearings; 2000–3700 m. Sichuan, S Xizang, NW Yunnan [Bhutan, Nepal].

40b. *Rubus alexeterius* var. *acaenocalyx* (H. Hara) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 37: 77. 1985.

腺毛刺萼悬钩子 xian mao ci e xuan gou zi

Rubus acaenocalyx H. Hara, J. Jap. Bot. 47: 109. 1972.

Petioles, pedicel, and abaxial surface of calyx with prominent glandular hairs.

Forested slopes, forest margins; 2000–3200 m. Sichuan, Xizang, Yunnan [Bhutan, C Nepal].

41. *Rubus pedunculatus* D. Don, Prodr. Fl. Nepal. 234. 1825.

密毛纤细悬钩子 mi mao xian xi xuan gou zi

Rubus gracilis Roxburgh (1824), not J. Presl & C. Presl (1822); *R. gracilis* Roxburgh var. *chiliacanthus* Handel-Mazzetti; *R. gracilis* Roxburgh var. *pluvialis* Handel-Mazzetti; *R. hypargyrus* Edgeworth; *R. hypargyrus* var. *niveus* H. Hara; *R. niveus* Wallich ex G. Don (1832), not Thunberg (1813); *R. pedunculatus* var. *hypargyrus* (Edgeworth) Kitamura.

Shrubs. Branchlets brownish to reddish brown, initially pubescent, gradually glabrescent, with few prickles or nearly unarmed. Leaves imparipinnate, 3-foliolate, rarely 5-foliolate;

petiole 3–5 cm, with rachis pubescent, with sparse, minute prickles; stipules linear or linear-lanceolate, 5–8 mm, soft hairy; blade of leaflets ovate or broadly ovate, rarely ovate-lanceolate, 2.5–6 × 2–5 cm, abaxially densely persistent tomentose, adaxially pubescent, glabrescent, base subrounded to shallowly cordate, margin irregularly incised roughly sharply doubly serrate, apex acute to acuminate. Inflorescences corymbose, several flowered. Pedicel 1.5–3.5 cm, soft hairy. Flowers 1.5–2 cm in diam. Calyx to ca. 1.5 cm, abaxially pubescent; tube pelviform; sepals erect after anthesis, narrowly ovate to ovate-lanceolate, 1–1.2 cm × 3–6 mm, margin tomentose, apex long acuminate or caudate. Petals pink, ovate, 7–10 × 4–6 mm, shorter than sepals, base shortly clawed, apex slightly incised or entire. Stamens many. Pistils somewhat shorter than or nearly as long as stamens; ovary sericeous, soft hairy. Aggregate fruit initially yellow, black at maturity, ovoid-globose.

Forested slopes, thickets, logged lands; 2700–3200 m. SE Xizang, W Yunnan [Bhutan, NW India, Kashmir, Nepal, Sikkim].

42. *Rubus inopertus* (Focke) Focke, *Biblioth. Bot.* 17(Heft 72): 182. 1911.

红花悬钩子 *hong hua xuan gou zi*

Shrubs climbing, 1–2 m tall. Branchlets brownish to purplish brown, angled, glabrous, with sparse, curved prickles. Leaves imparipinnate, 7–11-foliolate, rarely 5-foliolate; petiole 3.5–6 cm, purplish brown, petiolule of terminal leaflet 0.6–2(–3) cm, lateral leaflets subsessile, petiolules and rachis glabrous or slightly pubescent, with sparse, curved minute prickles; stipules linear-lanceolate, 3–5 mm, glabrous or margin slightly puberulous, margin entire; blade of leaflets ovate to ovate-lanceolate, (2–)3–7 × 1–3 cm, abaxially pubescent along veins, adaxially pilose, base rounded or subtruncate, margin coarsely sharp doubly serrate, apex acuminate. Inflorescences terminal, corymbs, 2–4 cm, several flowered, or flowers several in clusters; rachis and pedicels glabrous, unarmed; bracts linear-lanceolate, 3–5 mm, glabrous or slightly puberulous. Pedicel (0.7–)1–1.5 cm. Flowers 1–1.2 cm in diam. Calyx abaxially glabrous; tube pelviform; sepals erect at anthesis, reflexed in fruit, narrowly ovate or triangular-ovate, 4–7 × 2–4 mm, inner sepals tomentose at margin, apex acute to acuminate. Petals pink to purplish red, obovate, 5–7 × 4–6 mm, base puberulent and shortly clawed. Stamens numerous, slightly shorter than or nearly as long as petals; filaments linear or broadened basally. Pistils slightly shorter than or ca. as long as stamens; ovary and base of style soft hairy. Aggregate fruit purplish black at maturity, globose, 8–9 mm in diam., thinly pubescent; pyrenes rugulose. Fl. May–Jun, fr. Jul–Aug. $2n = 14^*$.

Dense forests in mountainous regions, river valleys, rocky slopes; 800–2800 m. Guangxi, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Taiwan, Yunnan [Vietnam].

- 1a. Abaxial surface of calyx without needle-like prickles 42a. var. *inopertus*
- 1b. Abaxial surface of calyx with needle-like prickles 42b. var. *echinocalyx*

42a. *Rubus inopertus* var. *inopertus*

红花悬钩子(原变种) *hong hua xuan gou zi* (*yuan bian zhong*)

Rubus niveus Thunberg subsp. *inopertus* Focke, *Bot. Jahrb. Syst.* 29: 400. 1900; *R. fraxinifolius* Poiret var. *yushunii* Suzuki & Yamamoto; *R. ohwianus* Koidzumi; *R. ritozanensis* Sasaki; *R. yamamotoanus* H. L. Li; *R. yushunii* (Suzuki & Yamamoto) Suzuki & Yamamoto.

Abaxial surface of calyx without needle-like prickles.

Dense forests in mountainous regions, river valleys, rocky slopes; 800–2800 m. Guangxi, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Taiwan, Yunnan [Vietnam].

42b. *Rubus inopertus* var. *echinocalyx* Cardot, *Notul. Syst. (Paris)* 3: 310. 1914.

刺萼红花悬钩子 *ci e hong hua xuan gou zi*

Abaxial surface of calyx with needle-like prickles.

• Yunnan.

43. *Rubus wilsonii* Duthie, *Bull. Misc. Inform. Kew* 1912: 36. 1912.

湖北悬钩子 *hu bei xuan gou zi*

Shrubs scandent, 1–2 m tall. Branches brownish purple, cylindrical, with many curved prickles and glaucous bloom; branchlets purplish red, prominently angled, glabrous, with sparse, small curved prickles. Leaves imparipinnate, 5-foliolate; petiole brownish purple, 5–6 cm, petiolule of terminal leaflet 2.5–3 cm, lateral leaflets subsessile, petiolule and rachis glabrous, with sparse, curved minute prickles; stipules lanceolate or oblong-lanceolate, 8–11 × 2–4 mm, glabrous, apex acuminate; blade of leaflets 4–6 × 2.5–5.5 cm, membranous, abaxially paler, glabrous or somewhat puberulous along veins, or with sparse, curved small prickles along midvein, adaxially green, glabrous, slightly rugulose, margin coarsely doubly serrate; terminal leaflet broadly ovate or suborbicular, base subcordate, rarely rounded, sometimes 3-lobed above middle, apex acute, rarely somewhat obtuse, lateral leaflets ovate, base obliquely rounded to subtruncate, margin not divided, apex acute to shortly acuminate. Inflorescences terminal, shortly corymbose, 4- or 5-flowered, or flowers in clusters of 2 or 3 in leaf axils; rachis and pedicels glabrous, with few small curved prickles; bracts lanceolate or oblong-lanceolate, 6–9 × 2–3 mm, glabrous, apex acuminate. Pedicel 6–12 mm. Flowers 1.2–1.4 cm in diam. Calyx dark brownish purple, glabrous; tube pelviform; sepals erect at anthesis, reflexed in fruit, broadly ovate, 6–8 × 5–7 mm, caudate, inner sepals marginally tomentose. Petals purplish red, suborbicular, 8–9 mm in diam., base broadly shortly clawed, margin erose. Stamens many, slightly shorter than petals. Pistils longer than stamens; style and ovary densely villous. Fruit unknown. Fl. May–Jun.

• Mountainous areas. Hubei.

44. *Rubus amabilis* Focke, *Bot. Jahrb. Syst.* 36(Beibl. 82): 53. 1905.

秀丽莓 *xiu li mei*

Shrubs 1–3 m tall. Branches purplish brown or dark brown, glabrous, with sparse prickles; flower bearing branchlets

short, soft hairy, with minute prickles. Leaves imparipinnate, 7–11-foliolate; petiole 1–3 cm, petiolule of terminal leaflet ca. 1 cm, lateral leaflets sessile, petiolule and rachis pubescent when young, gradually glabrescent, glabrous or subglabrous, with sparse, small prickles; stipule linear-lanceolate, 5–8 mm, soft hairy; blade of leaflets ovate or ovate-lanceolate, 1–5.5 × 0.8–2.5 cm, usually apical ones larger than basal ones, abaxially soft hairy and with small prickles along veins, adaxially glabrous or sparsely appressed-hairy, base subrounded, sometimes subcuneate on terminal leaflet, margin incised-doubly serrate, occasionally 2- or 3-lobed on terminal leaflet, apex acute, often acuminate on terminal leaflet. Inflorescences 1-flowered, terminal on lateral branchlets, pendent. Pedicel 2.5–6 cm, with soft hairs and sparse, minute prickles, sometimes with intermixed sparse, stipitate glands. Flowers 3–4 cm in diam. Calyx green, tinged red, abaxially pubescent, unarmed, rarely with short needle-like prickles or stipitate glands; tube pelviform; sepals spreading, broadly ovate, 1–1.5 cm × 5–8 mm, apex acuminate or abruptly pointed. Petals white, suborbicular, 1–1.7 cm in diam., longer than or nearly as long as sepals, base shortly clawed and pubescent. Stamens numerous, slightly shorter than petals; filaments whitish, linear, broadened basally. Pistils shorter than stamens; ovary pubescent; styles greenish, glabrous. Aggregate fruit red, oblong; rarely ellipsoid, (0.8–)1.5–2.5 × 1–1.2 cm, sparsely pubescent when young, glabrescent; pyrenes reniform, somewhat reticulate. Fl. Apr–May, fr. Jul–Aug.

• Foothills, montane valleys, ravines, slopes, forests, forest margins, thickets, roadsides; 1000–3700 m. Chongqing, Gansu, Henan, Hubei, Qinghai, Shaanxi, Shanxi, Sichuan.

The fruit are edible.

- 1a. Abaxial surface of calyx unarmed, rarely with sparse, short needle-like prickles or stipitate glands; aggregate fruit oblong, rarely ellipsoid, 15–25 mm 44a. var. *amabilis*
- 1b. Abaxial surface of calyx ± with needle-like prickles, without or with stipitate glands; aggregate fruit not longer than 14 mm.
 - 2a. Abaxial surface of calyx with sparse, needle-like prickles, without stipitate glands; aggregate fruit ovoid-globose or ellipsoid, 8–13 mm 44b. var. *microcarpus*
 - 2b. Abaxial surface of calyx with dense needle-like prickles, with sparse, stipitate glands; aggregate fruit narrowly ovoid, 9–14 mm 44c. var. *aculeatissimus*

44a. *Rubus amabilis* var. *amabilis*

秀丽莓(原变种) xiu li mei (yuan bian zhong)

Abaxial surface of calyx unarmed, rarely with sparse, short needle-like prickles or stalked glands. Aggregate fruit oblong, rarely ellipsoid, 1.5–2.5 cm.

• Foothills, ravines, thickets in valleys; 1000–3700 m. Gansu, Henan, Hubei, Qinghai, Shaanxi, Shanxi, Sichuan.

44b. *Rubus amabilis* var. *microcarpus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 301. 1982.

小果秀丽莓 xiao gou xiu li mei

Abaxial surface of calyx with sparse, needle-like prickles, without stipitate glands. Aggregate fruit ovoid-globose or ellipsoid, 0.8–1.3 cm.

• Montane valleys, slopes, forests, thickets; 2000–3500 m. Gansu, Qinghai.

44c. *Rubus amabilis* var. *aculeatissimus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 301. 1982.

刺萼秀丽莓 ci e xiu li mei

Abaxial surface of calyx with dense needle-like prickles, with sparse, stalked glands. Aggregate fruit narrowly ovoid, 0.9–1.4 cm.

• Forest margins, roadsides; 1900–2600 m. Chongqing (Nanchuan Xian), N Sichuan (Pingwu Xian).

45. *Rubus ptilocarpus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 301. 1982.

毛果悬钩子 mao gou xuan gou zi

Shrubs 1–2 m tall. Old branches purplish brown or brown, glabrous, prickly; flower bearing branchlets brownish, pubescent, with intermixed glandular hairs, with sparse, minute prickles. Leaves imparipinnate, 7–11-foliolate; petiole 2–3(–4) cm, petiolule of terminal leaflet 0.6–2 cm, lateral leaflets sessile, petiolule and rachis pubescent, with intermixed glandular hairs, with minute prickles; stipules linear or linear-lanceolate, (5–)6–8 mm, pubescent or with glandular hairs; blade of leaflets ovate, ovate-lanceolate, or rhombic-ovate, 1.5–4(–6) × 1–3(–4) cm, both surfaces soft hairy, base rounded, rarely subcordate, margin deeply incised-doubly serrate, sometimes pinnate-lobed on terminal leaflet, apex acute, or shortly acuminate on terminal leaflet. Inflorescences terminal, rarely axillary, 1–3-flowered; bracts linear to linear-lanceolate, shorter than stipules, with soft hairs or glandular hairs. Pedicel 1.5–3(–6) cm, with soft hairs and intermixed glandular hairs, with sparse, minute prickles or unarmed. Flowers to 2 cm in diam. Calyx abaxially pubescent, with intermixed glandular hairs; tube broad and short, often unarmed; sepals spreading or rarely reflexed, ovate to ovate-lanceolate or narrowly lanceolate to linear-lanceolate, unequal, longer sepals to 1.8 cm, shorter sepals 6–7 mm, apex long acuminate or long caudate. Petals oblong, shorter than sepals. Stamens many; filaments linear. Ovary with dense grayish yellow or gray slender soft hairs. Aggregate fruit blackish red, subglobose, 1–1.2 cm in diam., densely grayish yellow or gray slender pubescent; pyrenes reniform, slightly rugulose. Fl. May–Jun, fr. Jul–Aug.

• Shaded slopes, river valleys, forests, grasslands; 2300–4100 m. Qinghai, W Sichuan, NE Yunnan.

- 1a. Flowers usually 1–3; pedicel 1.5–3 cm; sepals ovate to ovate-lanceolate, to 12 mm, apex long acuminate 45a. var. *ptilocarpus*
- 1b. Flowers often solitary; pedicel to 6 cm; sepals narrowly lanceolate to

linear-lanceolate, to 18 mm, apex
long caudate 45b. var. *degensis*

45a. *Rubus ptilocarpus* var. *ptilocarpus*

毛果悬钩子(原变种) *mao guo xuan gou zi* (*yuan bian zhong*)

Flowers often 1–3. Pedicel 1.5–3 cm. Sepals ovate to ovate-lanceolate, to 1.2 cm, apex long acuminate.

• Shaded slopes, river valleys, forests, grasslands; 2300–4100 m. Qinghai, W Sichuan, NE Yunnan.

45b. *Rubus ptilocarpus* var. *degensis* T. T. Yu & L. T. Lu, *Acta Phytotax. Sin.* 20: 302. 1982.

长萼毛果悬钩子 *chang e mao guo xuan gou zi*

Flowers usually solitary. Pedicel to 6 cm. Sepals narrowly lanceolate to linear-lanceolate, to 1.8 cm, apex long caudate.

• Coniferous forests. NW Sichuan (Dêgê Xian).

46. *Rubus lutescens* Franchet, *Pl. Delavay.* 206. 1890.

黄色悬钩子 *huang se xuan gou zi*

Rubus lutescens f. *glabrescens* Cardot.

Subshrubs low, 10–50 cm tall. Stems upright, ± solitary; flower bearing branchlets arising from rhizome, grayish brown, reddish brown in age, finely pubescent, with sparse, unequal long straight or somewhat curved prickles. Leaves imparipinnate, 7–11-foliolate, sometimes 5-foliolate on apical part of flower bearing branchlet; petiole 2–3 cm, petiolule of terminal leaflet 0.7–1.5 cm, lateral leaflets subsessile, petiolule and rachis with fine soft hairs and minute, curved prickles, occasionally with sparse, glandular hairs; stipules variable, stipules in proximal part of branches larger, ovate-lanceolate, 6–9 mm, margin entire, rarely lobed, stipules apically of branches narrower, linear, 5–7 mm, not divided, finely soft hairy; blade of leaflets broadly ovate or rhombic-ovate, rarely oblong, 1.5–5 × 1–3(–4) cm, both surfaces soft hairy, abaxially more dense along veins, with sparse, minute prickles along veins, base rounded, margin unevenly serrate or incised-doubly serrate, sometimes pinnate-lobed on terminal leaflet, apex acute, rarely obtuse, or shortly acuminate on terminal leaflet. Inflorescences terminal or axillary, 1- or 2-flowered, sometimes 3 or 4 flowers terminal on short branchlets; bracts similar to stipules, but smaller. Pedicel 2–3(–4) cm, thinly pubescent, with sparse, minute prickles, sometimes with sparse, glandular hairs. Flowers 2–3 cm in diam. Calyx abaxially thinly pubescent; tube without or with sparse, minute prickles; sepals spreading, rarely reflexed in fruit, ovate-lanceolate to lanceolate, 0.9–1.2 cm × 3.5–5 mm, apex acuminate or shortly caudate. Petals white, turning yellowish, obovate or suborbicular, 5–7.5 × 5–6 mm, base shortly clawed. Stamens many, shorter than petals; filaments linear, broadened basally; anthers yellowish. Pistils numerous, slightly shorter than stamens. Ovary densely gray thinly pubescent. Aggregate fruit yellowish red, globose, 1.4–2 cm in diam., densely thinly pubescent; pyrenes ovoid-globose, shallowly reticulate. Fl. May–Jun, fr. Jul–Aug.

• Forest margins on slopes, mixed forests, stony places; 2500–4300 m. Sichuan, E Xizang, Yunnan.

47. *Rubus taiwanicola* Koidzumi & Ohwi, *J. Jap. Bot.* 12: 657. 1936.

小叶悬钩子 *xiao ye xuan gou zi*

Rubus elegans Hayata (1906), not P. J. Mueller (1858), nor Utsch (1885), nor Sudre (1898).

Subshrubs ca. 10 cm tall. Stems ascending, brown, glabrescent. Leaves imparipinnate, to 10 cm, 9–15-foliolate; petiole 1–2 cm, petiolule of terminal leaflet shorter, 2–4 mm, lateral leaflets sessile or subsessile, petiolule and purplish red rachis glabrous, with curved minute prickles; stipules lanceolate or linear-lanceolate, 6–10 mm, glabrous; blade of leaflets elliptic to broadly oblong, lateral leaflets sometimes obovate, 0.7–1.5 cm × 5–9 mm, both surfaces glabrous, only sparsely pubescent along midvein abaxially, base cuneate, margin sharply serrate above middle, becoming entire toward base, apex acute or obtuse. Inflorescences with flowers solitary or in pairs; bracts linear-lanceolate, 3–5 mm, glabrous. Pedicel 2–4 cm, glabrous, with curved minute prickles. Flowers 1–2 cm in diam. Calyx abaxially glabrous or sparsely soft hairy; sepals erect in fruit, ovate or triangular-ovate, 6–8 × 2–4 mm, margin slightly tomentose, apex shortly caudate. Petals white, broadly ovate to suborbicular, rarely oblong, 7–10 × 5–6 mm, glabrous or sparsely hairy, base shortly clawed, apex obtuse or rounded. Stamens many, shorter than petals; filaments linear or somewhat broadened and flattened. Pistils numerous, shorter than stamens; style and ovary glabrous. Aggregate fruit red, subglobose, 7–9(–12) mm in diam., glabrous. Fl. Jun–Jul, fr. Aug–Sep. $2n = 14^*$.

• Mountains; 1500–3000 m. C Taiwan.

48. *Rubus wallichianus* Wight & Arnott in Wight, *Catal.* 61. 1833.

红毛悬钩子 *hong mao xuan gou zi*

Rubus ellipticus Smith subsp. *fasciculatus* (Duthie) Focke; *R. ellipticus* var. *fasciculatus* (Duthie) Masamune; *R. erythrolasius* Focke; *R. fasciculatus* Duthie; *R. pinfaensis* H. Lévillé & Vaniot.

Shrubs climbing, 1–2 m tall. Branchlets reddish brown, grayish brown in age, robust, angled, pubescent, with sparse, curved prickles, with dense, spreading reddish brown bristles to 7 mm. Leaves imparipinnate, usually 3-foliolate; petiole 2–4.5 cm, petiolule of terminal leaflet 1.5–3 cm, lateral leaflets subsessile, reddish brown bristly, pubescent, with sparse prickles; stipules linear, 0.7–1.4 cm, pubescent, intermixed sparsely setose; blade of leaflets elliptic or ovate, rarely obovate, 4–9(–12) × 3–7(–10) cm, terminal leaflet larger than lateral leaflets, midvein and veins raised abaxially, impressed adaxially, often sparsely setose, with minute prickles, abaxially dark green, glabrous or slightly pubescent along midvein, adaxially slightly pale, pilose only along veins, base rounded or broadly cuneate, margin irregularly sharply serrate, apex acuminate to caudate, rarely nearly acute. Inflorescences clusters of 4–8 flowers in leaf axils, rarely flowers solitary; bracts linear or linear-lanceolate, 6–10 mm, pubescent. Pedicel 4–7 mm, pubescent, intermixed setose, with minute prickles. Flowers 1–1.3 cm in diam.

Calyx abaxially densely tomentose; sepals erect in fruit, broadly ovate or triangular-ovate, 5–7 × 4–5 mm, apex subacute, abruptly long pointed. Petals white, spatulate to elliptic-obovate, 6–10 × 4–6 mm, both surfaces tomentose, base clawed, apex rounded to acute. Stamens many, shorter than petals; filaments linear, but somewhat broadened and flattened. Pistils slightly shorter than or nearly as long as stamens; apex of ovary and base of style soft hairy. Aggregate fruit golden or reddish yellow at maturity, globose, 5–8 mm in diam., glabrous; pyrenes deeply rugose. Fl. Mar–Apr, fr. May–Jun. $2n = 14^*$.

Thickets on slopes, mixed forests, montane valleys, ravines, stream sides, cliffs; 300–2200 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan, Taiwan, Yunnan [Bhutan, India, Nepal, Sikkim, Vietnam].

49. *Rubus coreanus* Miquel, Ann. Mus. Bot. Lugduno-Batavi 3: 34. 1867.

插田泡 cha tian pao

Shrubs 1–3 m tall. Branchlets reddish brown to purplish brown, cylindric, robust, glabrous, with ± straight flattened curved prickles and glaucous bloom. Leaves imparipinnate, 5-foliolate, rarely 3-foliolate; petiole 2–5 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets subsessile, petiolule and rachis pubescent, with sparse, curved minute prickles; stipules linear-lanceolate, 4–7 mm, soft hairy; blade of leaflets ovate, rhombic ovate, or broadly ovate, (2–)3–8 × 2–5 cm, abaxially pubescent or only along veins or shortly tomentose, adaxially glabrous or pubescent only along veins, base cuneate to subrounded, margin irregularly coarse serrate to incised coarsely serrate, sometimes 3-lobed on terminal leaflet, apex acute. Inflorescences terminal on lateral short branchlets, corymbose, 2.5–5 cm, several to more than 30-flowered; rachis and pedicels gray pubescent, with sparse, curved minute prickles; bracts linear, nearly as long as or slightly shorter than stipules, pubescent. Pedicel 5–10 mm. Flowers 7–10 mm in diam. Calyx abaxially gray pubescent; tube shallowly cupular; sepals spreading at anthesis, reflexed in fruit, narrowly ovate to ovate-lanceolate, 4–7 × 2–3.5 mm, margin tomentose, apex acuminate to caudate. Petals pink to dark red, obovate, premorse, nearly as long as or somewhat shorter than sepals. Stamens numerous, shorter than or ca. as long as petals; filaments pinkish, linear. Pistils slightly shorter than stamens; ovary sparsely pubescent; styles glabrous. Aggregate fruit dark red or purplish black, subglobose, 5–8 mm in diam., glabrous or subglabrous; pyrenes rugose. Fl. Apr–Jun, fr. Jun–Aug. $2n = 14$.

Thickets on slopes, montane valleys, ravines, river banks, roadsides; 100–3100 m. Anhui, Fujian, Gansu, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xinjiang, Yunnan, Zhejiang [Japan, Korea].

- 1a. Leaflets sparsely pubescent or pubescent only along veins abaxially 49a. var. *coreanus*
- 1b. Leaflets densely shortly tomentose abaxially 49b. var. *tomentosus*

49a. *Rubus coreanus* var. *coreanus*

插田泡(原变种) cha tian pao (yuan bian zhong)

Rubus coreanus var. *kouytchensis* (H. Léveillé) H. Lé-

veillé; *R. coreanus* var. *nakaianus* H. Léveillé; *R. pseudo-saxatilis* H. Léveillé; *R. pseudosaxatilis* var. *kouytchensis* H. Léveillé; *R. nakaianus* H. Léveillé ex Nakai; *R. quelpaertensis* H. Léveillé.

Leaflets sparsely pubescent or pubescent only along veins abaxially.

Thickets on slopes, montane valleys, river banks, roadsides; 100–1700 m. Anhui, Fujian, Gansu, Guizhou, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Xinjiang, Yunnan, Zhejiang [Japan, Korea].

49b. *Rubus coreanus* var. *tomentosus* Cardot, Notul. Syst. (Paris) 3: 310. 1914.

毛叶插田泡 mao ye cha tian pao

Leaflets densely shortly tomentose abaxially.

• Thickets on slopes, montane valleys, ravines; 800–3100 m. Anhui, Gansu, Guizhou, Henan, Hubei, Hunan, Shaanxi, Sichuan, Yunnan.

50. *Rubus subcoreanus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 302. 1982.

柱序悬钩子 zhu xu xuan gou zi

Shrubs erect, 1–2 m tall, with arching branches. Branchlets reddish brown, glabrous, without glaucous bloom, with straight or somewhat curved prickles. Leaves imparipinnate, usually 5-foliolate; petiole 2–4 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets sessile or subsessile, together with petiolule and rachis thinly pubescent, with sparse, minute prickles; stipules linear-lanceolate, puberulous; blade of leaflets ovate, broadly ovate, or rhombic-ovate, 2–6 × 1.5–4 cm, abaxially glabrous or pilose only along veins, adaxially glabrous or sparsely pubescent, base cuneate or broadly cuneate, rarely subrounded, margin incised coarsely sharply serrate or doubly serrate, sometimes pinnate-lobed on terminal leaflet, apex acute. Inflorescences terminal on lateral branchlets, racemes, compact, cylindric, short; rachis and pedicels densely grayish yellow villous; bracts lanceolate, grayish yellow villous. Pedicel 5–10 mm. Flowers 5–8 mm in diam. Calyx abaxially densely grayish yellow villous; sepals erect, spreading, ovate or broadly ovate, 3–5 mm, margin not tomentose, apex obtuse or acute, abruptly shortly pointed. Petals purplish red, spatulate, rarely obovate, ca. 2 × or longer than sepals, base shortly clawed, soft hairy. Stamens many; filaments purplish red, linear, basally slightly broadened and flattened. Pistils numerous; ovary densely gray villous; styles glabrous. Aggregate fruit red, subglobose, 6–8 mm in diam., glabrous or subglabrous. Fl. May–Jun, fr. Jul–Aug.

• Slopes, thickets along stream sides or ditches, riverbank bluffs; 900–1500 m. Gansu, Henan, Shaanxi.

51. *Rubus spananthus* Z. M. Wu & Z. L. Cheng, Bull. Bot. Res., Harbin 11(4): 53. 1991.

少花悬钩子 shao hua xuan gou zi

Shrubs scandent, 1–2 m tall. Branches brownish or reddish brown, with sparse prickles, villous when young. Leaves

imparipinnate, 3-foliolate; petiole 3–6 cm, petiolule of terminal leaflet ca. 2 cm, lateral leaflets subsessile, sparsely villous, with minute prickles; stipules persistent, linear, ca. 7 mm, villous; blade of leaflets narrowly ovate or narrowly ovate-lanceolate, 4–8 × 2–4.5 cm, terminal leaflet slightly longer than lateral leaflets, lateral veins 8–10 pairs, abaxially villous along veins, with sparse, curved prickles along midvein, adaxially sparsely appressed villous, base obliquely broadly cuneate or subrounded, or rounded to subcordate on terminal leaflet, margin unevenly coarsely sharply serrate, apex acuminate to long acuminate. Inflorescences terminal on lateral short branchlets, corymbose or short racemes, shorter than petioles, several to 10-flowered; rachis and pedicels densely villous; bracts linear, soft hairy. Pedicel 5–10 mm. Flowers ca. 1 cm in diam. Calyx abaxially tomentose, intermixed villous; sepals ovate-lanceolate, 5–7 mm, subulate-caudate. Petals purplish red, narrowly obovate, abaxially soft hairy in middle part, base long clawed. Stamens numerous; filaments complanate. Pistils 20–40; ovary and base of style soft hairy. Fruit unknown. Fl. May–Jun.

• Thickets on mountain slopes; 400–900 m. W Anhui (Dabie Shan, Jinzhai Xian).

52. *Rubus stans* Focke, Notes Roy. Bot. Gard. Edinburgh 5: 76. 1911.

直立悬钩子 zhi li xuan gou zi

Shrubs 1–2 m tall. Branchlets brownish to dark brown, sometimes blackish, pubescent, with intermixed glandular hairs and prickles; flower bearing branchlets lateral, 5–8 cm, pubescent, with intermixed glandular hairs. Leaves imparipinnate, 3-foliolate; petiole 2–3.5 cm, petiolule of lateral leaflet 0.5–1.5(–2) cm, lateral leaflets subsessile, pubescent, with intermixed glandular hairs, with sparse, minute prickles; stipules linear, 0.6–1 cm, pubescent, with glandular hairs; blade of leaflets broadly ovate to narrowly ovate, rarely suborbicular, 2–4 × 1.8–3 cm, terminal leaflet slightly longer than lateral leaflets, both surfaces appressed pubescent, more densely so and with glandular hairs along veins abaxially, base rounded, usually subtruncate on terminal leaflet, margin with sparse, glandular hairs and irregularly minute sharply serrate, sometimes 3-lobed on terminal leaflet, apex obtuse or acute. Inflorescences terminal on lateral branchlets, corymbose, 2–4 cm, 3- or 4-flowered or more, or flowers solitary in leaf axils; rachis and pedicels with soft hairs, intermixed glandular hairs, and sparse, minute prickles; bracts linear, 4–7 mm, pubescent, with stalked glands. Pedicel (1–)1.5–3 cm. Flowers 1–1.5 cm in diam. Calyx purplish red, abaxially densely pubescent, with stalked glands, unarmed or with needle-like prickles; tube pelviform; sepals erect, lanceolate, 0.8–1.4 cm × 2.5–5 mm, apex acuminate. Petals white, tinged purplish, or purplish red, broadly elliptic or oblong, 5–6 mm in diam., slightly shorter than sepals, base shortly and broadly clawed, margin entire or sometimes erose. Stamens many, shorter than petals; filaments linear, basally broadened and flattened. Pistils somewhat shorter than stamens; ovary sparsely pubescent, glabrescent; styles glabrous. Aggregate fruit orange-red, subglobose, 8–11 mm in diam., glabrous; pyrenes somewhat reniform, alveolate. Fl. May–Jun, fr. Jul–Aug.

• High montane forests, coniferous forests, forest margins, open stony thickets; 2000–4000 m. Qinghai, Sichuan, E Xizang, Yunnan.

The fruit are edible.

- 1a. Branchlets with sparse prickles; abaxial surface of calyx unarmed or with sparse, minute needle-like prickles; petals white or tinged purplish 52a. var. *stans*
- 1b. Branchlets densely prickly; abaxial surface of calyx with dense, needle-like prickles; petals purplish red 52b. var. *soulieanus*

52a. *Rubus stans* var. *stans*

直立悬钩子(原变种) zhi li xuan gou zi (yuan bian zhong)

Rubus testaceus C. K. Schneider.

Branchlets with sparse prickles. Calyx abaxially unarmed or with sparse, minute needle-like prickles. Petals white or tinged purplish.

• High montane forests, forest margins, open stony thickets; 2000–3400 m. Qinghai, Sichuan, E Xizang, Yunnan.

52b. *Rubus stans* var. *soulieanus* (Cardot) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 37: 86. 1985.

多刺直立悬钩子 duo ci zhi li xuan gou zi

Rubus soulieanus Cardot, Notul. Syst. (Paris) 3: 307. 1914.

Branchlets densely prickly. Calyx abaxially with dense, needle-like prickles. Petals purplish red.

• Coniferous forests; below 4000 m. W Sichuan, E Xizang.

53. *Rubus sikkimensis* J. D. Hooker, Fl. Brit. India 2: 336. 1878.

锡金悬钩子 xi jing xuan gou zi

Shrubs low, to 2 m tall. Branchlets purplish brown, terete, pubescent, with sparse, intermixed stipitate glandular hairs and straight or somewhat curved slender prickles. Leaves imparipinnate, 3-foliolate; petiole 4–8(–10) cm, petiolule of terminal leaflet 2.5–3.5 cm, lateral leaflets subsessile, pubescent, with minute prickles, with sparse, purplish red stipitate glands; stipules linear, 1–1.5 cm, pubescent, sparsely stipitate glandular; blade of leaflets ovate to broadly ovate, 4–8 × 2.5–5.5 cm, both surfaces pubescent along veins, subglabrescent, base broadly cuneate to rounded, subcordate on terminal leaflet, margin irregularly obtusely dentate, often lobed or deeply divided on terminal leaflet, apex shortly acuminate to acuminate. Inflorescences with flowers 1 or 2 in leaf axils; bracts linear, to 1.3 cm, pubescent, sparsely stipitate glandular. Pedicel 1–3 cm, pubescent, with stalked glands and sparse prickles. Flowers 2–3 cm in diam. Calyx purplish red, abaxially pubescent, sparsely stipitate glandular; tube pelviform, with slender prickles; sepals triangular-lanceolate, 8–11 × 3–5 mm, apex long caudate. Petals purplish red. Stamens many; filaments linear. Pistils numerous; ovary glabrous. Aggregate fruit subglobose, glabrous. Fl. summer, fr. Aug–Sep.

Mountainous regions; below 3800 m. S Xizang (Cona Xian) [Bhutan, Sikkim].

54. *Rubus pungens* Cambessèdes in Jacquemont, Voy. Inde 4(Bot.): 48. 1844.

针刺悬钩子 *zhen ci xuan gou zi*

Shrubs to 3 m tall. Branchlets brownish to reddish brown, terete, pubescent, gradually glabrescent, glabrous when young, usually with needle-like prickles. Leaves imparipinnate, (3–)5–7(–9)-foliolate; petiole (2–)3–6 cm, petiolule of terminal leaflet 0.5–1 cm, lateral leaflets subsessile, petiolule and rachis pubescent or subglabrous, with sparse, minute prickles and with glandular hairs; stipules linear, 4–7 mm, pubescent; blade of leaflets ovate, triangular-ovate, or ovate-lanceolate, (1–)2–5(–6) × 1–3 cm, both surfaces pubescent especially along midvein and veins abaxially, base rounded to subcordate, margin sharply or incised doubly serrate, terminal leaflet often pinnately lobed, apex acute to shortly acuminate, but usually acuminate on terminal leaflet. Inflorescences terminal or axillary, 1-flowered, rarely corymbose and 2–4-flowered; rachis and pedicels pubescent, with minute prickles or with sparse, glandular hairs; bracts linear, 4–6 mm, pubescent. Pedicel 2–3.5 cm. Flowers 1–2 cm in diam. Calyx abaxially pubescent, with glandular hairs, with needle-like prickles or nearly unarmed; tube semiglobose; sepals erect, rarely reflexed, linear to lanceolate or triangular-lanceolate, 0.8–1.2(–2) cm × 2–4 mm, apex long acuminate. Petals white, oblong, obovate, or suborbicular, 7–9 × 5–6 mm, much shorter than sepals, glabrous, base clawed. Stamens many, unequal in length, longer ones longer than petals, shorter ones nearly as long as or slightly shorter than petals; filaments somewhat broadened and flattened basally. Pistils numerous; ovary soft hairy or subglabrous; styles glabrous or sparsely soft hairy basally. Aggregate fruit red, subglobose, 1–1.5 cm in diam., pubescent or subglabrous; pyrenes ovoid-globose, 2–3 mm, conspicuously rugose. Fl. Apr–May, fr. Jul–Aug. *2n* = 14.

Forests, forest margins, grassy slopes, river sides, semishaded wet places in montane valleys, thickets, roadsides; 600–3900 m. Fujian, Gansu, Guizhou, Henan, Hubei, Jiangxi, Jilin, Shaanxi, Shanxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Bhutan, NW India, Japan, Kashmir, Korea, N Myanmar, Nepal, Sikkim; SW Asia].

- 1a. Branchlets and abaxial surface of calyx with dense, needle-like prickles.
- 2a. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx usually without stalked glands 54a. var. *pungens*
- 2b. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx often with conspicuous stalked glands.
 - 3a. Leaflets 5–7, 1–3 cm 54b. var. *villosus*
 - 3b. Leaflets often 3, rarely 5, 2.5–6 cm 54c. var. *ternatus*
- 1b. Branchlets and abaxial surface of calyx nearly unarmed or ± with needle-like prickles.
 - 4a. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx without or partly with sparse, shortly stipitate glands; sepals ovate-triangular or narrowly ovate-lanceolate, 1–1.5 cm 54d. var. *oldhamii*
 - 4b. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx with prominent stipitate

glands; sepals linear or linear-lanceolate, to 2 cm 54e. var. *linearisepalus*

54a. *Rubus pungens* var. *pungens*

针刺悬钩子(原变种) *zhen ci xuan gou zi* (*yuan bian zhong*)

Rubus pungens var. *discolor* Prochanov; *R. pungens* var. *fargesii* Cardot.

Branchlets and abaxial surface of calyx with dense, needle-like prickles. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx without stalked glands.

Forested slopes, forest margins, river sides; 2200–3300 m. Gansu, Shaanxi, Sichuan, Taiwan, Xizang, Yunnan [Bhutan, NW India, Japan, Kashmir, Korea, N Myanmar, Nepal, Sikkim; SW Asia].

54b. *Rubus pungens* var. *villosus* Cardot, Notul. Syst. (Paris) 3: 307. 1914.

柔毛针刺悬钩子 *rou mao zhen ci xuan gou zi*

Branchlets and abaxial surface of calyx with dense, needle-like prickles. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx with conspicuous stalked glands. Leaflets 5–7, 1–3 cm.

- Grassy slopes; below 2600 m. Hubei, Shaanxi, Sichuan.

54c. *Rubus pungens* var. *ternatus* Cardot, Notul. Syst. (Paris) 3: 407. 1914.

三叶针刺悬钩子 *san ye zhen ci xuan gou zi*

Branchlets and abaxial surface of calyx with dense, needle-like prickles. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx with prominent stalked glands. Leaflets 3, rarely 5, 2.5–6 cm.

- Mixed forests and forest margins along roadsides; below 3400 m. Sichuan, Yunnan.

54d. *Rubus pungens* var. *oldhamii* (Miquel) Maximowicz, Mélanges Biol. Phys.-Math. Acad. Imp. Sci. Saint-Pétersbourg 8: 386. 1872.

香莓 *xiang mei*

Rubus oldhamii Miquel, Prolus. Fl. Jap. 34. 1867; *R. hayatae* Nemoto; *R. hirsutopungens* Hayata; *R. okamotoanus* Koidzumi; *R. parvipungens* Hayata; *R. pungens* var. *indefensus* Focke; *R. rosifolius* Smith var. *hirsutus* Hayata.

Branchlets and abaxial surface of calyx nearly unarmed or ± with needle-like prickles. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx without or partly with sparse, shortly stipitate glands. Sepals ovate-triangular or narrowly ovate-lanceolate, 1–1.5 cm.

Semishaded wet places in montane valleys, forested slopes, thickets; 600–3900 m. Fujian, Gansu, Guizhou, Henan, Hubei, Jiangxi, Jilin, Shaanxi, Shanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea].

54e. *Rubus pungens* var. *linearisepalus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 302. 1982.

线萼针刺悬钩子 *xian e zhen ci xuan gou zi*

Branchlets and abaxial surface of calyx nearly unarmed or

± with needle-like prickles. Flower bearing branchlets, petioles, pedicel, and abaxial surface of calyx with prominent stipitate glands. Sepals linear or linear-lanceolate, to 2 cm.

• Mixed forests, roadsides; below 3400 m. NW Yunnan (Weixi Xian).

55. *Rubus macilentus* Cambessèdes in Jacquemont, Voy. Inde 4(Bot.): 49. 1844.

细瘦悬钩子 xi shou xuan gou zi

Shrubs 1–2 m tall. Branchlets brown or reddish brown, terete, villous, with unequal long complanate prickles. Leaves imparipinnate, 3-foliolate, rarely simple; petiole 0.8–1(–1.5) cm, petiolule of terminal leaflet 0.5–1 cm, lateral leaflets subsessile, pubescent, with minute prickles; stipules linear or linear-lanceolate, 4–6 mm, soft hairy; blade of leaflets lanceolate, ovate-lanceolate, or ovate, terminal leaflet much longer than lateral leaflets, 3–5 × 1–2.5 cm, lateral leaflets 1–2 × 0.7–1.4 cm, both surfaces glabrous or slightly soft hairy, abaxially with sparse, minute prickles only along veins, base rounded or broadly cuneate, margin sharply serrate, apex acute, rarely obtuse, often shortly acuminate on terminal leaflet. Inflorescences terminal on short lateral branchlets, 1–3-flowered; bracts lanceolate or linear-lanceolate, somewhat smaller than stipules, soft hairy. Pedicel 6–10 mm, villous, sometimes with sparse, minute prickles. Flowers ca. 1 cm in diam. Calyx abaxially villous; sepals erect, rarely spreading, lanceolate or triangular-lanceolate, 6–8 × 2–3(–4) mm, apex shortly caudate. Petals white, broadly ovate to oblong, slightly longer than or nearly as long as sepals, both surfaces soft hairy, base clawed. Stamens many, shorter than sepals; filaments broad, complanate. Pistils many, slightly shorter than stamens; apical part of ovary and base of style sparsely villous. Aggregate fruit orange or red, subglobose, glabrous or somewhat soft hairy, enclosed in calyx; pyrenes globose, deeply reticulate. Fl. Apr–May, fr. Jul–Aug.

Slopes, roadsides, near water courses, forest margins; 900–3300 m. Sichuan, Xizang, Yunnan [Bhutan, N India, Kashmir, Nepal, Sikim].

- 1a. Branchlets not angled 55a. var. *macilentus*
- 1b. Branchlets prominently angled 55b. var. *angulatus*

55a. *Rubus macilentus* var. *macilentus*

细瘦悬钩子(原变种) xi shou xuan gou zi (yuan bian zhong)

Rubus minensis Pax & K. Hoffmann; *R. trichopetalus* Handel-Mazzetti.

Branchlets not angled.

Slopes, roadsides, near water courses, forest margins; 900–3300 m. Sichuan, Xizang, Yunnan [Bhutan, N India, Kashmir, Nepal, Sikim].

55b. *Rubus macilentus* var. *angulatus* Franchet, Pl. Delavay. 205. 1890.

棱枝细瘦悬钩子 leng zhi xi shou xuan gou zi

Branchlets prominently angled.

• Roadsides; below 2000 m. NW Yunnan.

56. *Rubus xanthocarpus* Bureau & Franchet, J. Bot. (Morot)

5: 46. 1891.

黄果悬钩子 huang guo xuan gou zi

Rubus sitiens Focke; *R. tibetanus* Focke (1909), not Franchet (1886); *R. xanthocarpus* var. *tibetanus* (Focke) Cardot.

Subshrubs low, 15–50 cm tall. Rhizomes creeping, woody; stems usually upright, yellowish brown, herbaceous, branched or not branched, obtusely angled, densely pubescent when young, subglabrescent, with sparse, long needle-like prickles. Leaves imparipinnate, 3-foliolate, sometimes 5-foliolate; petiole (2–)3–8 cm, petiolule of terminal leaflet 1–2.5 cm, lateral leaflets subsessile, petiolule and rachis pilose, with straight prickles; stipules lanceolate or linear-lanceolate, 1–1.5 cm, margin entire or shallowly lacinate; lobes linear to lanceolate, pubescent; blade of leaflets oblong or elliptic-lanceolate, rarely ovate-lanceolate, terminal leaflet 5–10 × 1.5–3 cm, base often 2-lobed, lateral leaflets smaller, 2–5 × 1–2 cm, both surfaces glabrous or pubescent only along veins, abaxially with slender prickles along veins, base broadly cuneate to subrounded, margin irregularly serrate, apex acute or obtuse. Inflorescences terminal or axillary, corymbose, 2–3 cm, several flowered, rarely flowers solitary; rachis and pedicels pubescent, with sparse, needle-like prickles; bracts lanceolate or linear, margin entire or lacinate, pubescent. Pedicel 1–2.5 cm. Flowers 1–2.5 cm in diam. Calyx abaxially with dense needle-like prickles, pubescent; sepals narrowly ovate to ovate-lanceolate, 7–10 × 3–6 mm, apex caudate or subulate-acuminate. Petals white, obovate to spatulate, 1–1.3 cm × 5–7 mm, longer than sepals, puberulous, base long clawed, margin entire or incised. Stamens many, shorter than petals; filaments broad, complanate. Pistils shorter than stamens; ovary pubescent near apex; styles glabrous. Aggregate fruit orange-yellow, compressed globose, 1–1.2 cm in diam., glabrous; pyrenes rugose. Fl. May–Jun, fr. Aug. 2n = 14*.

• Roadsides, slopes, forests, rocky ravines; 600–3200 m. Anhui, Gansu, Shaanxi, Sichuan, Yunnan.

The fruit are eaten fresh and used for making jam, jelly, and wine. Whole, young plants are used in medicine.

57. *Rubus simplex* Focke, Hooker's Icon. Pl., ser. 3, 10: t. 1948. 1890.

单茎悬钩子 dan jing xuan gou zi

Subshrubs low, 40–60 cm tall. Stems erect, brownish, woody, not branched, glabrous, rarely puberulous, with sparse, short curved prickles; flower bearing branchlets arising from creeping roots. Leaves imparipinnate, 3-foliolate; petiole 5–10 cm, petiolule of terminal leaflet to 1 cm; lateral leaflets subsessile or shortly petiolulate, puberulous, with sparse, curved prickles; stipules lanceolate or linear-lanceolate, 6–9 mm, puberulent, margin entire; blade of leaflets ovate to ovate-lanceolate, 6–9.5 × 2.5–5 cm, terminal leaflet slightly longer than lateral leaflets, abaxially pilose or with sparse, minute prickles only along veins, adaxially sparsely appressed pubescent, base subrounded, margin irregularly shortly serrate, apex acuminate. Inflorescences terminal or axillary, 3- or 4-flowered, rarely flowers solitary; bracts linear to lanceolate, 5–9 mm, puberulous. Pedicel 6–12 mm, puberulous, with curved minute prick-

les. Flowers 1.5–2 cm in diam. Calyx abaxially with sparse, curved minute prickles, finely pubescent; sepals narrowly triangular to ovate, 6–10 × 3–5 mm, margin tomentose, apex subulate-acuminate. Petals white, obovate, 4–6 mm in diam., nearly as long as sepals, finely pubescent, base shortly clawed. Stamens many, erect, shorter than petals; filaments broad, complanate. Pistils slightly shorter than stamens; apex of ovary and base of style pubescent. Aggregate fruit orange-red, globose, 7–9 mm in diam., often glabrous, with many drupelets; pyrenes rugose. Fl. May–Jun, fr. Aug–Sep. $2n = 14^*$.

• Slopes, roadsides, forests; 1500–2500 m. Gansu, Hubei, Jiangsu, Shaanxi, Sichuan.

58. *Rubus sumatranus* Miquel, Fl. Ned. India, Eerste Bijv. 307. 1860.

红腺悬钩子 *hong xiao xuan gou zi*

Rubus asper Wallich ex G. Don var. *myriadenus* (H. Léveillé & Vaniot) Focke; *R. asper* var. *myriadenus* (H. Léveillé & Vaniot) Focke subvar. *grandifoliolatus* (H. Léveillé) Focke; *R. asper* var. *pekanus* Focke; *R. dolichocephalus* Hayata; *R. indotibetanus* Koidzumi; *R. myriadenus* H. Léveillé & Vaniot; *R. myriadenus* var. *grandifoliolatus* H. Léveillé; *R. rosifolius* Smith subsp. *sumatranus* (Miquel) Focke; *R. somae* Hayata; *R. sorbifolius* Maximowicz; *R. takasagoensis* Koidzumi.

Shrubs erect or scandent. Branchlets brownish to dark reddish brown, cylindric, with long soft hairs, usually with scattered setose purplish red glandular hairs and curved prickles; glandular hairs and prickles unequal in length, glandular hairs to 4–5 mm, prickles to 8 mm. Leaves imparipinnate, to 15 cm, 5–7-foliolate, rarely 3-foliolate; petiole 3–5 cm, petiolule of terminal leaflet to 1 cm, lateral leaflets shortly petiolulate, petiolule and rachis soft hairy, with intermixed glandular hairs, with curved minute prickles; stipules lanceolate or linear-lanceolate, 6–8 mm, with soft hairs and intermixed glandular hairs; blade of leaflets ovate-lanceolate to lanceolate, 3–8 × 1.5–3 cm, abaxially villous, with gland-tipped hairs and small prickles along midvein, adaxially villous especially along midvein, base rounded, margin irregularly sharply serrate to doubly serrate, sometimes 3-lobed on terminal leaflet, apex acuminate. Inflorescences terminal, corymbose, 4–7 cm, 3- to several flowered, rarely flowers solitary; rachis and pedicels villous, with intermixed glandular hairs, with minute prickles; bracts lanceolate or linear, 5–7 mm, with soft hairs and intermixed glandular hairs. Pedicel 2–3 cm. Flowers 1–2 cm in diam. Calyx abaxially with soft hairs, with intermixed unequal long gland-tipped hairs; sepals reflexed in fruit, lanceolate or oblong-lanceolate, 7–12 × 2–4 mm; apex long caudate. Petals white, narrowly obovate or spatulate, slightly shorter than sepals, base clawed. Stamens many, shorter than petals. Pistils to 400; style and ovary glabrous; torus raised, oblong, base shortly stalked. Aggregate fruit orange-red, oblong, 1.2–1.8 cm × 7–11 mm, glabrous; pyrenes reticulate. Fl. Apr–Jun, fr. Jul–Aug. $2n = 14$.

Forests, forest margins, thickets, bamboo forests, grasslands; 700–2500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Xizang, Yunnan, Zhejiang [Bhutan, Cambodia, N India, Indonesia, Japan, Korea, Laos, Malaysia, Myan-

mar, Nepal, Sikkim, Thailand, Vietnam].

59. *Rubus croceacanthus* H. Léveillé, Repert. Spec. Nov. Regni Veg. 11: 33. 1912.

薄瓣悬钩子 *bao ban xuan gou zi*

Shrubs low, to 1 m tall. Branchlets dark brown to dark reddish brown, slender, pubescent, with intermixed dense glandular hairs, or glabrous, with sparse, straight to curved prickles to 4 mm. Leaves imparipinnate, to 20 cm, papery, usually 5–7-foliolate, sometimes 3-foliolate on flower bearing branchlets; petiole 2–4 cm, petiolule of terminal leaflet 0.8–1.5 cm, lateral leaflets subsessile, petiolule and rachis densely soft hairy or glabrous, with intermixed glandular hairs and sparse, minute prickles; stipules lanceolate, 5–10 mm, pubescent, with intermixed glandular hairs; blade of leaflets variable in shape, terminal leaflet ovate-elliptic to ovate-lanceolate, 4–7 × 2–5 cm, apex acute to shortly acuminate, lateral leaflets elliptic or ovate, 2–5 × 1.5–3 cm, both surfaces with dense spreading soft hairs, glabrescent, usually with some small prickles along midvein abaxially, base cuneate or rounded to subcordate, apex obtuse or acute, lateral leaflets often oblique basally, margin unevenly serrate to doubly serrate, sometimes with glandular hairs. Inflorescences terminal on short lateral branchlets, corymbose, 1- to several flowered; pedicel and abaxial surface of calyx with glandular hairs, soft hairy or glabrous; bracts lanceolate, 4–8 mm, puberulous, with glandular hairs. Pedicel 2–3 cm, with few small prickles. Flowers 2–3 cm in diam. Calyx tube pelviform; sepals triangular-oblong or triangular-lanceolate, 0.7–1.5 cm × 4–6 mm, inner sepals tomentose at margin, margin entire, rarely divided, apex long caudate. Petals white, nearly orbicular or broadly ovate-elliptic, 0.8–1.4 × 0.7–1.3 cm, abaxially shortly hairy. Stamens many, shorter than petals; filaments linear. Pistils numerous, shorter than stamens; ovary to 1 mm, with sparse, soft hairs especially apically, usually with some stalked glands; styles ca. 1.5 mm. Aggregate fruit red at maturity, subglobose or ovoid, rarely ellipsoid, 1–1.5 cm in diam., with few glandular hairs; pyrenes foveolate. Fl. Mar–Apr, fr. May–Jun.

Forest clearings, forest margins, roadsides, landslides, grasslands, river banks; sea level to medium elevations. Taiwan [Cambodia, India, Japan (Ryukyu Islands), Laos, Myanmar, Thailand, Vietnam].

- 1a. Branchlets, petioles, inflorescences, and abaxial surface of calyx soft hairy 59a. var. *croceacanthus*
- 1b. Branchlets, petioles, inflorescences, and abaxial surface of calyx glabrous 59b. var. *glaber*

59a. *Rubus croceacanthus* var. *croceacanthus*

薄瓣悬钩子(原变种) *bao ban xuan gou zi* (*yuan bian zhong*)

Rubus cardotii Koidzumi; *R. euphlebohyllus* Hayata; *R. piptopetalus* Hayata ex Koidzumi; *R. rosifolius* Smith var. *formosanus* Cardot; *R. sphaerocephalus* Hayata.

Branchlets, petioles, inflorescences, and abaxial surface of calyx with soft hairs. $2n = 14^*$.

Forest clearings, forest margins, roadsides, landslides, grasslands, river banks; sea level to medium elevations. Taiwan [Cambodia, India, Japan (Ryukyu Islands), Laos, Myanmar, Thailand, Vietnam].

59b. *Rubus croceacanthus* var. *glaber* Koidzumi, Fl. Symb.

Orient.-Asiat. 65. 1930.

秃悬钩子 tu xuan gou zi

Rubus asper Wallich ex D. Don var. *glaber* (Koidzumi) C. F. Hsieh; *R. rubroangustifolius* Sasaki.

Branchlets, petioles, inflorescences, and abaxial surface of calyx glabrous. $2n = 14^*$.

- E and N Taiwan.

60. *Rubus hirsutus* Thunberg, Diss. Bot.-Med. de Rubo 7. 1813.

蓬蘽 peng lei

Shrubs 1–2 m tall. Branchlets reddish brown or brown, terete, with soft hairs, stalked glands, and sparse, curved prickles. Leaves imparipinnate, 3–5-foliolate; petiole (0.5–)2–10 cm, petiolule of terminal leaflet to 2 cm, lateral leaflets shortly petiolulate, petiolule and rachis pubescent, with stalked glands and sparse prickles; stipules lanceolate or ovate-lanceolate, 6–10 × 2–3 mm, both surfaces pubescent, margin entire; blade of leaflets ovate or broadly ovate, 3–7 × 2–3.5 cm, both surfaces sparsely soft hairy, base broadly cuneate to rounded, margin irregularly sharply doubly serrate, apex acute, acuminate, or caudate. Inflorescences terminal or axillary, often 1-flowered; bracts lanceolate or linear, 4–7 mm, pubescent. Pedicel (1.5–)3–6 cm, pubescent, with stalked glands, or with few small needle-like prickles. Flowers 3–4 cm in diam. Calyx abaxially with dense soft hairs and stalked glands; sepals reflexed after anthesis, ovate-lanceolate or triangular-lanceolate, 1–1.5 cm × 4–5 mm, margin gray tomentose, apex long caudate. Petals white, obovate or suborbicular, 1.2–1.8 cm × 7–12 mm, glabrous, base clawed. Stamens numerous, much shorter than petals. Pistils shorter than stamens; style and ovary glabrous. Aggregate fruit subglobose, 1–2 cm in diam., glabrous. Fl. Apr, fr. May–Jun. $2n = 14$.

Slopes, roadsides, waste places, thickets, forested slopes; 900–3200 m. Anhui, Fujian, Guangdong, Henan, Hubei, Jiangsu, Jiangxi, Taiwan, Yunnan, Zhejiang [Japan, Korea].

The young plants and roots are used in medicine.

- 1a. Pedicel (2–)3–6 cm; petiole 2–3 cm, petiolule of terminal leaflet to 1 cm; apex of terminal leaflet acuminate, apex of lateral leaflets acute 60a. var. *hirsutus*
- 1b. Pedicel 1.5–3 cm; petiole 5–10 cm, petiolule of terminal leaflet to 2 cm; apex of terminal and lateral leaflets acuminate to caudate 60b. var. *brevipedicellus*

60a. *Rubus hirsutus* var. *hirsutus*

蓬蘽(原变种) peng lei (yuan bian zhong)

Rubus argyi H. Léveillé; *R. hirsutus* var. *argyi* (H. Léveillé) Nakai; *R. stephanandria* H. Léveillé; *R. talaikaensis* H. Léveillé; *R. thunbergii* Siebold & Zuccarini; *R. thunbergii* var. *argyi* (H. Léveillé) Focke; *R. thunbergii* var. *talaikiensis* (H. Léveillé) Focke.

Petiole 2–3 cm; petiolule of terminal leaflet to 1 cm; apex of terminal leaflet acuminate, apex of lateral leaflets acute. Pedicel (2–)3–6 cm.

Slopes, roadsides, waste places, thickets; 1500–3200 m. Anhui, Fujian, Guangdong, Henan, Hubei, Jiangsu, Jiangxi, Taiwan, Yunnan, Zhejiang [Japan, Korea].

60b. *Rubus hirsutus* var. *brevipedicellus* Z. M. Wu, Guihaia 8: 237. 1988.

短梗蓬蘽 duan geng peng lei

Petiole 5–10 cm, petiolule of terminal leaflet to 2 cm; apex of terminal and lateral leaflets acuminate to caudate. Pedicel 1.5–3 cm.

- Forested slopes; 900–1300 m. SE Anhui (Jixi Xian).

61. *Rubus glandulosocalycinus* Hayata, Icon. Pl. Formosan. 5: 42. 1915.

腺萼悬钩子 xian e xuan gou zi

Rubus hayatanus Koidzumi.

Subshrubs to 50 cm tall. Branchlets brownish to reddish brown, slender, pilose, glabrescent, with sparse, sharp prickles, with dense, purplish red stalked glands 2–5 mm. Leaves imparipinnate, 3–7-foliolate; petiole 2–3 cm, petiolule of terminal leaflet 5–10 mm, lateral leaflets subsessile, petiolule and rachis glabrous or sparsely pilose, with purplish red stalked glands and sparse prickles; stipules lanceolate or linear, 6–9 mm, margin with glandular hairs, sparsely pilose; blade of leaflets ovate-oblong or ovate-lanceolate, terminal leaflet 5–6 × 0.8–1.5 cm, lateral leaflets 1.5–3 × 0.6–1 cm, abaxially subglabrous, pilose, with stalked glands and with minute prickles along veins, adaxially sparsely pilose, base rounded to truncate, lateral leaflets oblique basally, margin incised-doubly serrate, apex acute to acuminate. Inflorescences terminal, corymbose, 3–5 cm, 1-flowered, rarely 2–5-flowered; rachis and pedicels subglabrous, with purplish red stalked glands and sparse, small prickles; bracts linear, 5–7 mm, subglabrous, margin with sparse, stalked glands. Pedicel 2–4 cm. Flowers 2–3 cm in diam. Calyx purplish red, subglabrous, with dense stalked glands and bristles abaxially; sepals narrowly triangular or triangular-lanceolate, 1.1–1.5 cm × 4–6 mm, inner sepals with tomentose margin, apex long caudate. Petals ovate, 1–1.4 cm × 7–9 mm, glabrous, base shortly clawed, apex obtuse. Stamens shorter than petals; filaments linear, somewhat broader basally. Pistils numerous, slightly shorter than stamens; style and ovary often glabrous. Aggregate fruit red, subglobose, 0.9–1.1 cm in diam., glabrous. Fl. Apr, fr. May–Jun. $2n = 14^*$.

- Roadsides, grasslands; medium elevations. C and N Taiwan.

62. *Rubus tsangii* Merrill, Lingnan Sci. J. 13: 28. 1934.

光滑悬钩子 guang hua xuan gou zi

Shrubs scandent, ca. 1 m tall. Branchlets brownish, dark brown, or reddish brown, terete, slightly angled, glabrous, with sparse prickles and stalked glands 1–2 mm. Leaves imparipinnate, (5–)7–9(–11)-foliolate, sometimes with 5 leaflets on flow-

er bearing branchlets; petiole 4–7 cm, petiolule of terminal leaflet to 1 cm, lateral leaflets shortly petiolulate or sessile, petiolule and rachis glabrous, with sparse, stalked glands and minute prickles; stipules lanceolate, 1–1.4 cm, glabrous or puberulous, sometimes with sparse, shortly stalked glands; blade of leaflets lanceolate or ovate-lanceolate, 4–7 × 0.8–2 cm, both surfaces slightly pubescent when young, gradually glabrescent, abaxially with sparse, small prickles along midvein, base rounded, margin irregularly tenuously sharply serrate to doubly serrate, apex acuminate. Inflorescences terminal, corymbose, 4–6 cm, 3–5-flowered, rarely flowers solitary; rachis and pedicels glabrous, with unequal long stalked glands; bracts lanceolate, 6–10 mm, glabrous. Pedicel 2–4 cm. Flowers 3–4 cm in diam. Calyx abaxially glabrous; tube pelviform, ca. 1 cm in diam., with sparse, glandular hairs; sepals erect at anthesis, reflexed in fruit, oblong-lanceolate or narrowly ovate-lanceolate, 0.9–1.5 cm × 4–6 mm, inner sepals with gray tomentose margin, apex long caudate. Petals white, narrowly obovate or oblong, 0.9–1.4 cm × 6–8 mm, base clawed. Stamens unequally long, shorter than petals; filaments somewhat broadened and flattened. Pistils many, more than 100, shorter than stamens; style and ovary glabrous. Aggregate fruit red, subglobose, to 1.5 cm in diam., glabrous or with glandular hairs. Fl. Apr–May, fr. Jun–Jul. $2n = 14^*$.

• Slopes, foothills, river banks, forests, forest margins; 800–2500 m. Fujian, Guangdong, Guangxi, Guizhou, N Jiangxi, Sichuan, Yunnan, Zhejiang.

- 1a. Leaves 7–9(–11)-foliolate, abaxially without gland-tipped hairs along veins; ovary and aggregate fruit usually without glandular hairs 62a. var. *tsangii*
- 1b. Leaves 5–7(–11)-foliolate, abaxially with gland-tipped hairs along veins; ovary and aggregate fruit often with glandular hairs 62b. var. *yanshanensis*

62a. Rubus tsangii var. *tsangii*

光滑悬钩子(原变种) *guang hua xuan gou zi* (*yuan bian zhong*)

Rubus kwangtungensis H. L. Li; *Rubus linearifoliolus* Hayata; *R. rosifolius* Smith var. *linearifoliolus* (Hayata) H. L. Li; *R. tsangii* var. *linearifoliolus* (Hayata) T. T. Yu & L. T. Lu.

Leaves 7–9(–11)-foliolate, abaxially without gland-tipped hairs along veins. Ovary and aggregate fruit usually without glandular hairs.

• Forests in valleys, slopes, foothills, river banks; 800–2500 m. Fujian, Guangdong, Guangxi, Guizhou, Sichuan, Yunnan, Zhejiang.

62b. Rubus tsangii var. *yanshanensis* (Z. X. Yu & W. T. Ji) L. T. Lu, *Acta Phytotax. Sin.* 38: 280. 2000.

铅山悬钩子 *yan shan xuan gou zi*

Rubus yanshanensis Z. X. Yu & W. T. Ji, *Acta Bot. Yunnan.* 13: 255. 1991.

Leaves 5–7(–11)-foliolate, abaxially with gland-tipped hairs along veins. Ovary and aggregate fruit often with glandu-

lar hairs.

• Forests, forest margins, foothills; 1100–1800 m. N Jiangxi (Nanchang Xian, Yanshan Xian).

63. Rubus glandulosocarpus M. X. Nie, *Bull. Bot. Res., Harbin* 9(3): 43. 1989.

腺果悬钩子 *xian guo xuan gou zi*

Subshrubs erect, 20–45 cm tall. Stems cylindrical, slightly angled, not or few branched, unarmed, with sparse, glandular hairs. Leaves imparipinnate, 5–7-foliate, rarely 3-foliate; petiole 3–5 cm, petiolule of terminal leaflet 1–1.5 cm, petiolule of lateral leaflets ca. 3 mm, petiolule and rachis pilose, glabrescent, with glandular hairs, sometimes with small prickles; stipules lanceolate, margin with sparse, short glandular hairs, entire; blade of leaflets ovate or ovate-oblong, rarely ovate-lanceolate, 2–6.5 × 1.7–3.5 cm, abaxially glabrous or pilose along veins, with pale glands, adaxially pilose, base obliquely subrounded, margin doubly serrate, apex acute to acuminate. Inflorescences terminal on lateral branchlets, sometimes corymbose, 2–4-flowered, rarely flowers solitary in leaf axils; rachis and pedicels with glandular hairs; bracts lanceolate, margin entire, or sparsely shortly glandular. Flowers 3–4 cm in diam. Calyx abaxially glabrous, with gland-tipped hairs; sepals 5(–7), lanceolate or ovate-lanceolate, margin tomentose and entire, apex long caudate. Petals 5(–7), white, oblong, broadly ovate, or broadly obovate, glabrous. Stamens many, shorter than petals. Pistils ca. 80–100; ovary glabrous, with sparse, glandular hairs; torus villous, base with ca. 3 mm stalk. Aggregate fruit subglobose, less than 1 cm in diam., with sparse, gland-tipped hairs; pyrenes foveolate. Fl. Apr–May, fr. Jun–Jul.

• Mountainous regions; 1600–1700 m. W Jiangxi (Jinggangshan).

64. Rubus rosifolius Smith, *Pl. Icon. Ined.* 3: 60. 1791.

空心泡 *kong xin pao*

Shrubs erect or climbing, 2–3 m tall. Branchlets grayish brown or dark reddish brown, terete, soft hairy or subglabrous, with straight to curved prickles and yellowish glands. Leaves imparipinnate, usually 5–7-foliate; petiole 2–3 cm, petiolule of terminal leaflet 0.8–1.5 cm, lateral leaflets sessile, petiolule and rachis with soft hairs and sparse, minute prickles, sometimes subglabrous, with yellowish glands; stipules linear or lanceolate to ovate-lanceolate, 0.8–1.2 cm × 1.5–3.5 mm, sparsely soft hairy; blade of leaflets ovate or ovate-elliptic to lanceolate, 4–7(–10) × 1.5–5 cm, both surfaces pilose, subglabrescent, with yellow glands, abaxially with sparse, minute prickles along midvein, base rounded, margin sharply incised doubly serrate or coarsely doubly serrate, apex acuminate. Inflorescences terminal or in leaf axils, 1- or 2-flowered; bracts linear or lanceolate, 5–9 mm, puberulous. Pedicel (1–)2–3.5 cm, with ± soft hairs and sparse, minute prickles, sometimes glandular. Flowers 2–3(–5) cm in diam. Calyx abaxially soft hairy and glandular; sepals erect before anthesis, reflexed after anthesis, triangular-lanceolate or ovate-lanceolate, 0.8–1.2(–1.4) cm × 4–6 mm, apex long caudate. Petals white, oblong, narrowly obovate, or suborbicular, 0.8–1.5 × 0.8–1.2 cm, abaxially shortly hairy, base clawed, apex obtuse. Stamens many, shorter than

petals; filaments broad. Pistils to 2 mm, shorter than stamens; ovary glabrous, sometimes glandular; styles glabrous; torus shortly stalked. Aggregate fruit red, ovoid-globose or narrowly obovoid to oblong, 1–1.5 × 0.8–1.2 cm, glabrous, with few glands; pyrenes deeply foveolate. Fl. Mar–May, fr. Jun–Jul. 2n = 14*.

Mixed forests, grassy slopes, roadsides, landslides; low to medium elevations. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Cambodia, India, Indonesia, Japan, Laos, Malaysia, Myanmar, Nepal, Philippines, Sikkim, Thailand, Vietnam; Africa, Australia].

- 1a. Flowers double; branchlets, petioles, and pedicel ± prickly 64c. var. *coronarius*
- 1b. Flowers single; branchlets, petioles, and pedicel ± or unarmed.
 - 2a. Branchlets, petioles, and pedicel ± prickly 64a. var. *rosifolius*
 - 2b. Branchlets, petioles, and pedicel unarmed 64b. var. *inermis*

64a. *Rubus rosifolius* var. *rosifolius*

空心泡(原变种) kong xin pao (yuan bian zhong)

Rubus glandulosopunctatus Hayata; *R. hirsutus* Thunberg var. *glabellus* (Focke) Wuzhi; *R. hopingensis* Y. C. Liu & F. Y. Lu; *R. minusculus* H. Léveillé & Vaniot; *R. parvirosifolius* Hayata; *R. rosifolius* var. *polyphyllarius* Cardot; *R. tagallus* Chamisso & Schlechtendal; *R. taiwanianus* Matsumura; *R. thunbergii* Siebold & Zuccarini var. *glabellus* Focke.

Branchlets, petioles, and pedicel ± prickly. Flowers single.

Mixed forests, grassy slopes, roadsides, landslides; low to medium elevations. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Cambodia, NE India, Indonesia, Japan, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam; Africa, Australia].

64b. *Rubus rosifolius* var. *inermis* Z. X. Yu, Bull. Bot. Res., Harbin 8(2): 139. 1988.

无刺空心泡 wu ci kong xin pao

Branchlets, petioles, and pedicel unarmed. Flowers single.

- Roadsides; 900–1000 m. E Jiangxi (Wuyi Shan).

64c. *Rubus rosifolius* var. *coronarius* (Sims) Focke, Biblioth. Bot. 17(Heft 72): 155. 1911.

重瓣空心泡 chong ban kong xin pao

Rubus coronarius Sims, Bot. Mag. (Curtis) 43: t. 1783. 1815; *R. rosifolius* f. *coronarius* (Sims) Kuntze; *R. rosifolius* var. *wuyishanensis* Z. X. Yu.

Branchlets, petioles, and pedicel ± prickly. Flowers double, fragrant, 3–5 cm in diam.

Naturalized in Jiangxi, Shaanxi, Yunnan, and likely elsewhere [native to India, Indonesia, Malaysia, Nepal, Sikkim].

This variety, originally described from cultivated plants in England, is now occasionally cultivated for ornamental use throughout SE

Asia (Fl. Bhutan 1(3): 562. 1987).

65. *Rubus pararosifolius* F. P. Metcalf, Lingnan Sci. J. 19(1): 30. 1940.

矮空心泡 ai kong xin pao

Subshrubs low, 0.4–1 m tall. Branchlets brown or reddish brown, soft hairy when young, gradually glabrescent, glandular, unarmed or with few small prickles. Leaves imparipinnate, 5-foliolate, rarely 7- or 3-foliolate; petiole 1–2.5(–3.5) cm, petiole of terminal leaflet 4–6 mm, lateral leaflets sessile, petiole and rachis puberulent, with sparse, minute prickles, glandular; stipules linear or lanceolate, 5–7 mm, sparsely glandular; blade of leaflets ovate-oblong or ovate-lanceolate, 1–3 × 0.7–1.2 cm, terminal leaflet larger than lateral leaflets, abaxially sparsely pubescent, glandular, adaxially dark green, sparsely strigose, especially along midvein, base cuneate to subrounded, margin coarsely incised-doubly serrate, apex acuminate on terminal leaflet, acute on lateral leaflets. Inflorescences terminal or lateral, 1-flowered; bracts lanceolate or linear, 2–4 mm, puberulent. Pedicel 2–3 cm, puberulent, sparsely glandular. Flowers 1.5–1.8 cm in diam. Calyx pubescent, glandular; tube pelviform; sepals reflexed, narrowly lanceolate, 5–8 × 2–3 mm, margin tomentose, apex acuminate. Flowers unknown. Aggregate fruit red, globose, small, 5–7 mm in diam., pubescent when young, glabrescent, glandular; pyrenes small, shallowly foveolate. Fl. spring, fr. Jun–Jul.

- Thickets along roadsides; 1000–1600 m. Fujian.

66. *Rubus lanyuensis* Chang, Forest J. Taiwan Prov. Pingtung. Inst. Agr. 19: 11. 1977.

兰屿悬钩子 lan yu xuan gou zi

Rubus tagallus Chamisso & Schlechtendal var. *lanyuensis* (Chang) S. S. Ying.

Shrubs erect. Branches glabrous, with short prickles. Leaves imparipinnate, usually 3–5-foliolate; petiole 3–4 cm, sparsely villous, prickly; stipules linear-lanceolate, 0.8–1.2 cm, sparsely pilose; blade of leaflets ovate, 3–5 × 3–4 cm, veins raised abaxially, impressed adaxially, both surfaces glabrous or nearly so except sparsely villous at base, abaxially glandular, base cuneate to rounded, margin doubly serrate, apex acute. Inflorescences axillary racemes, few flowered. Pedicel 1–1.5 cm, glabrous. Flowers ca. 2 cm in diam. Calyx abaxially glabrous, glandular; tube cupular, 1.5–1.8 cm in diam.; sepals narrowly triangular, ca. 8 mm, apex shortly caudate. Petals white, orbicular-ovate, 6–7 mm. Filaments glabrous. Apex of ovary with few hairs. Fruit unknown.

- Near sea level. Taiwan (Lan Yu).

67. *Rubus eustephanos* Focke, Bot. Jahrb. Syst. 36(Beibl. 82): 54. 1905.

大红泡 da hong pao

Shrubs 0.5–2 m tall. Branchlets brownish or grayish brown, angled, glabrous, with sparse, curved prickles. Leaves imparipinnate, 3–5(–7)-foliolate; petiole 1.5–2(–4) cm, petiole of terminal leaflet 1–1.5 cm, lateral leaflets sessile or

shortly petiolulate, petiolule and rachis glabrous or pilose when young, with sparse, minute prickles; stipules lanceolate, 6–10 × 1.5–2.5 mm, margin pilose initially, glabrescent; blade of leaflets ovate or elliptic, rarely ovate-lanceolate, 2–5(–7) × 1–3 cm, both surfaces pilose when young, abaxially sparsely pilose only along veins in age, with minute prickles along midvein, base rounded, margin sharply incised doubly serrate, apex acuminate to long acuminate. Inflorescences usually terminal on lateral branchlets, 1-flowered, rarely 2- or 3-flowered; bracts lanceolate, 6–8 × 1.5–2 mm, puberulous, glabrescent. Pedicel 2.5–5 cm, glabrous or with gland-tipped hairs, with sparse, small prickles. Flowers 3–4 cm in diam. Calyx abaxially glabrous; tube pelviform; sepals reflexed in fruit, oblong-lanceolate or triangular-lanceolate, 0.9–1.2 cm × 3–5 mm, apex subulate-acuminate, inner sepals with tomentose margin. Petals white, elliptic or broadly ovate, 1.2–1.5 cm × 8–11 mm, glabrous, base shortly clawed, margin entire or undulate, apex obtuse. Stamens many, shorter than petals; filaments linear. Style and ovary glabrous. Aggregate fruit red, subglobose, 0.9–1.1 cm in diam., glabrous; pyrenes smooth or slightly rugulose. Fl. Apr–May, fr. Jun–Jul.

• Foothills, forests, slopes, thickets, river banks; 500–2300 m. Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Zhejiang.

- 1a. Flower bearing branchlets or pedicel without gland-tipped hairs 67a. var. *eustephanos*
- 1b. Flower bearing branchlets or pedicel ± with gland-tipped hairs 67b. var. *glanduliger*

67a. *Rubus eustephanos* var. *eustephanos*

大红泡(原变种) da hong pao (yuan bian zhong)

Flower bearing branchlets or pedicel without gland-tipped hairs.

• Foothills, densely forested slopes, thickets, river banks; 500–2300 m. Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Zhejiang.

67b. *Rubus eustephanos* var. *glanduliger* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 303. 1982.

腺毛大红泡 xian mao da hong pao

Flower bearing branchlets or pedicel ± with glandular hairs.

• Slopes, forests, thickets; 700–2300 m. Sichuan.

68. *Rubus fraxinifolius* Hayata, Icon. Pl. Formosan. 5: 46. 1915.

椴叶悬钩子 cen ye xuan gou zi

Rubus parvifraxinifolius Hayata; *R. suzukianus* Y. C. Liu & Yang.

Shrubs scandent. Branchlets brownish to reddish brown, flexuous, glabrous, with sparse, recurved prickles 3–4 mm. Leaves imparipinnate, 3–5(–7)-foliolate; petiole 3–4 cm, petiolule of terminal leaflet 5–10 mm, petiolule of lateral leaflets 2–3 mm, petiolule and rachis glabrous or nearly so, with sparse, minute prickles; stipules linear to linear-lanceolate, 5–10 mm, glabrous, margin entire; blade of leaflets lanceolate to ovate-lanceolate, 3–9 × 1.5–3 cm, papery, terminal leaflet usually longer and wider than lateral leaflets, lateral leaflets often ± oblique,

lateral veins 8 or 9 per side, both surfaces glabrous, abaxially with sparse, minute prickles along midvein, adaxially sometimes slightly hirsute along veins, base rounded to subtruncate, margin unevenly serrate to doubly serrate, apex acute to acuminate. Inflorescences terminal or axillary, 1- or 2-flowered. Pedicel (1.5–)2–2.5 cm, glabrous or subglabrous. Flowers 2.3–4 cm in diam. Calyx cupular, ca. 8 mm in diam., glabrous, with few brown glands abaxially; sepals narrowly triangular, 1–1.3 cm × 5–7 mm, margin tomentose, apex caudate. Petals white, obovate, 1.2–1.9 × 1–1.5 cm, base clawed. Stamens many, shorter than petals; filaments broadened and flattened. Pistils numerous, slightly shorter than stamens when young; style and ovary glabrous. Aggregate fruit ellipsoid to globose, to 1.5 cm in diam. Fl. Jun–Jan, fr. Jun–Feb.

• Along trails in broad-leaved forests, river valleys; 100–1900 m. E Taiwan.

69. *Rubus delavayi* Franchet, Pl. Delavay. 205. 1890.

三叶悬钩子 san ye xuan gou zi

Rubus duclouxii H. Léveillé.

Shrubs erect, low, 0.4–1 m tall. Branchlets brownish or reddish brown, cylindric, glabrous, with short curved prickles. Leaves imparipinnate, usually 3-foliolate; petiole 2–3 cm, petiolule of terminal leaflet 5–8 mm, lateral leaflets sessile or subsessile, glabrous or pilose, with sparse, small prickles; stipules linear, 4–7 mm, puberulous when young, glabrescent; blade of leaflets lanceolate to narrowly lanceolate, 3–7 × 1–2 cm, both surfaces glabrous or abaxially with sparse, soft hairs and with minute prickles along midvein, base broadly cuneate to rounded, margin irregularly coarsely serrate, apex acuminate. Inflorescences terminal or axillary, 1-flowered, or with flowers in clusters of 2 or 3; bracts linear, smaller than stipules, puberulous or glabrescent. Pedicel 1–2 cm, puberulent or subglabrous, with sparse, minute prickles. Flowers ca. 1 cm in diam. Calyx abaxially puberulous and with sparse, minute prickles; tube short, broad; sepals erect in fruit, triangular-lanceolate, 6–8(–10) × 2–3 mm, apex long caudate. Petals white, obovate, shorter than sepals, puberulent, base prominently clawed. Stamens many, shorter than petals; filaments short, broad, puberulent. Pistils shorter than stamens; style and ovary glabrous. Aggregate fruit orange-red, globose, ca. 1 cm in diam.; pyrenes small, rugulose. Fl. May–Jun, fr. Jun–Jul.

• Mixed forested slopes; 2000–3400 m. Yunnan.

The dried fruit, seeds, and leaves are used in traditional Chinese medicine.

70. *Rubus leucanthus* Hance, Ann. Bot. Syst. 2: 468. 1852.

白花悬钩子 bai hua xuan gou zi

Rubus glaberrimus Champion ex Bentham; *R. leucanthus* var. *paradoxus* (S. Moore) F. P. Metcalf; *R. leucanthus* var. *villosulus* Cardot; *R. paradoxus* S. Moore.

Shrubs climbing, 1–3 m tall. Branchlets brown to purplish brown, glabrous, with sparse, curved prickles. Leaves imparipinnate, 3-foliolate, sometimes simple apically on branchlets or basally in inflorescences; petioles 2–6 cm, petiolule of terminal leaflet 1.5–2 cm, lateral leaflets shortly petiolulate, glabrous, with curved minute prickles; stipules subulate, 4–6 mm, gla-

brous; blade of leaflets ovate or ovate-elliptic, 4–8 × 2–4 cm, terminal leaflet slightly longer than or nearly as long as lateral leaflets, leathery, lateral veins 5–8 pairs, raised abaxially, impressed adaxially, both surfaces glabrous or adaxially slightly soft hairy, base rounded, margin sharply coarsely serrate, apex acuminate to caudate. Inflorescences terminal on lateral short branchlets, corymbose, 3–5 cm, 3–8-flowered, rarely flowers solitary in leaf axils; rachis and pedicels glabrous; bracts subulate, 3–5 mm, glabrous. Pedicel 0.8–1.5 cm. Flowers 1–1.5 cm in diam. Calyx abaxially glabrous; sepals erect, ovate, 4–7 × 3–5 mm, apex acute, shortly pointed, inner sepals with tomentose margin. Petals white, narrowly ovate or suborbicular, nearly as long as or slightly longer than sepals, base puberulous, clawed. Stamens many, somewhat shorter than petals; filaments broadened and flattened. Pistils usually 70–80, sometimes to 100 or more; style and ovary glabrous or pilose only at ovary apex and style base; torus basally subsessile or sessile. Aggregate fruit red, subglobose, 1–1.5 cm in diam., glabrous, enclosed in calyx; pyrenes foveolate. Fl. Apr–May, fr. Jun–Jul.

Sparse forests, waste places; 1000–2500 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Yunnan [Cambodia, Laos, Thailand, Vietnam].

The edible fruit and roots are used medicinally.

71. *Rubus zhaogoshanensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 303. 1982.

草果山悬钩子 *cao guo shan xuan gou zi*

Shrubs 0.8–1 m tall. Branchlets brown, glabrous, rarely angled, with sparse, curved prickles. Leaves imparipinnate, 3–5-foliolate; petiole 5–8 cm, petiolule of terminal leaflet (0.5–)1–2 cm, lateral leaflets shortly petiolulate, glabrous or sparsely pilose, with small curved prickles; stipules lanceolate or linear-lanceolate, 7–10 mm, glabrous or slightly soft hairy; blade of leaflets narrowly elliptic to elliptic-lanceolate, 6–9 × 2–3 cm, terminal leaflet slightly longer than lateral leaflets, subherbaceous, both surfaces glabrous, base cuneate, rarely subrounded, margin irregularly densely sharply minute serrate to incised-doubly serrate, apex acuminate to caudate. Inflorescences terminal or axillary, clusters of 2 or 3(–5) flowers, rarely flowers solitary in leaf axils; bracts lanceolate or linear-lanceolate, 6–8 mm, glabrous or slightly pilose. Pedicel 1.5–2.5 cm, glabrous. Flowers 1.3–1.5 cm in diam. Calyx abaxially glabrous; tube short, broad; sepals spreading or reflexed in fruit, ovate-lanceolate, 7–9 × 2–3.5 mm, inner sepals slightly tomentose marginally, apex long caudate. Petals white, oblong or elliptic, much shorter than sepals, base clawed. Stamens many; filaments linear, basally slightly broader. Pistils shorter than stamens; style and ovary glabrous. Aggregate fruit ovoid-globose, 7–10 mm in diam., glabrous; pyrenes densely rugulose. Fl. Apr–May, fr. Jun–Jul.

● Broad-leaved evergreen forests; below 1600 m. SE Yunnan (Xichou Xian).

72. *Rubus columellaris* Tutcher, Rep. Bot. Dept. Hong Kong 1914: 31. 1915.

小柱悬钩子 *xiao zhu xuan gou zi*

Shrubs scandent, 1–2.5 m tall. Branchlets brown or reddish brown, glabrous or villous, with sparse, curved prickles.

Leaves imparipinnate, usually 3-foliolate, those below inflorescences sometimes simple; petiole 2–4 cm, petiolule of terminal leaflet 1–2 cm, lateral leaflets variable, shortly petiolulate or subsessile, glabrous or slightly soft hairy when young, with sparse, minute prickles; stipules lanceolate or linear, 6–8 mm, glabrous, rarely puberulous; blade of leaflets elliptic to ovate-lanceolate, 3–10(–16) × 1.5–5(–6) cm, terminal leaflet much longer than lateral leaflets, subleathery, both surfaces glabrous or adaxially sparsely appressed pubescent, base rounded or subcordate, margin unevenly densely coarsely serrate, apex acuminate. Inflorescences terminal or axillary, corymbose, 6–8 cm, 3–7-flowered, sometimes flowers solitary in leaf axils at bases; rachis and pedicels glabrous, rarely puberulent, with sparse, small prickles; bracts linear-lanceolate, 5–7 mm, often glabrous. Pedicel 1–2 cm, glabrous or densely villous. Flowers 3–4 cm in diam. Calyx abaxially glabrous or villous; sepals reflexed after anthesis, ovate-lanceolate or lanceolate, 6–10 × 4–6 mm, apex acute, abruptly subulate-pointed, inner sepals yellowish gray tomentose at margin. Petals white, spatulate-oblong or narrowly obovate, 5–7 mm in diam., much longer than sepals, puberulous, base clawed. Stamens numerous in several whorls, shorter than petals, with somewhat broader filaments. Pistils to 300 or more, glabrous; torus with stalks to 5 mm. Aggregate fruit orange-red or brown-yellow, subglobose or slightly oblong, 1.5–1.7 cm in diam., glabrous; pyrenes shallowly rugose. Fl. Apr–May, fr. Jun–Jul.

Slopes, valleys, mixed and sparse forests, roadsides, water courses; 300–2200 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Yunnan [Vietnam].

- 1a. Branchlets, petioles, pedicel, and abaxial surface of calyx usually glabrous 72a. var. *columellaris*
- 1b. Branchlets, petioles, pedicel, and abaxial surface of calyx villous 72b. var. *villosus*

72a. *Rubus columellaris* var. *columellaris*

小柱悬钩子(原变种) *xiao zhu xuan gou zi* (*yuan bian zhong*)

Rubus columellaris var. *etropicus* (Handel-Mazzetti) F. P. Metcalf; *R. etropicus* (Handel-Mazzetti) Thuan; *R. leucanthus* Hance var. *etropicus* Handel-Mazzetti.

Branchlets, petioles, pedicels, and abaxial surface of calyx usually glabrous.

Slopes, valleys, mixed forests; 700–2200 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Yunnan [Vietnam].

72b. *Rubus columellaris* var. *villosus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 304. 1982.

柔毛小柱悬钩子 *rou mao xiao zhu xuan gou zi*

Branchlets, petiole, pedicel, and abaxial surface of calyx villous.

● Slopes, montane valleys, roadsides, water courses, sparse forests; 300–400 m. N Guangdong (Lianshan Xian).

73. *Rubus paucidentatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 304. 1982.

少齿悬钩子 *shao chi xuan gou zi*

Subshrubs lianoid. Branchlets dark brown, cylindric, slender, glabrous, with sparse, curved prickles or nearly unarmed. Leaves imparipinnate, usually 3-foliolate, sometimes simple on flower bearing branchlets; petiole 1.5–2.5 cm, petiolule of terminal leaflet ca. 1 cm, lateral leaflets subsessile or shortly petiolulate, glabrous, with sparse, minute prickles; stipules linear, small, glabrous; blade of leaflets narrowly lanceolate or oblong-elliptic to elliptic, terminal leaflet 7–14 cm, nearly 4 × as long as lateral leaflets, lateral leaflets (1.5–)2–6 × 1–2.5 cm, both surfaces glabrous, base rounded, margin inconspicuously shallowly minute serrate or nearly entire, apex acuminate. Inflorescences often terminal, 1-flowered or flowers in clusters of 2 or 3; bracts linear, minute, glabrous. Pedicel 1–1.5 cm, glabrous. Flowers 1.5–2 cm in diam. Calyx abaxially glabrous; sepals erect after anthesis, ovate-lanceolate or triangular-lanceolate, inner sepals yellowish gray tomentose at margin, apex acuminate or acute. Petals white, broadly obovate, shorter than sepals, adaxially puberulous, base shortly clawed. Stamens numerous, in many whorls, unequal in length; filaments broader. Pistils many, shorter than stamens; ovary soft hairy apically; torus shortly stalked basally. Fl. May–Jun.

• Mountainous areas, forests, valleys, water courses; below 1200 m. N Guangdong, S Guangxi.

- 1a. Blade of leaflets narrowly lanceolate, terminal leaflet nearly 4 × as long as lateral leaflets, margin remotely shallowly minute serrate 73a. var. *paucidentatus*
- 1b. Blade of leaflets oblong-elliptic or elliptic, terminal leaflet slightly longer than lateral leaflets, margin nearly entire 73b. var. *guangxiensis*

73a. *Rubus paucidentatus* var. *paucidentatus*

少齿悬钩子(原变种) shao chi xuan gou zi (yuan bian zhong)

Blade of leaflets narrowly lanceolate, terminal leaflet nearly 4 × as long as lateral leaflets, margin remotely shallowly minute serrate.

• Mountainous areas, dense forests in valleys, water courses; below 1200 m. N Guangdong (Ruyuan Xian, Yangshan Xian).

73b. *Rubus paucidentatus* var. *guangxiensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 304. 1982.

广西少齿悬钩子 guang xi shao chi xuan gou zi

Blade of leaflets oblong-elliptic to elliptic, terminal leaflet slightly longer than lateral leaflets, margin nearly entire.

• Montane valleys, dense forests along stream sides; ca. 800 m. S Guangxi (Shiwan Dashan).

74. *Rubus impressinervus* F. P. Metcalf, Lingnan. Sci. J. 11: 12. 1932.

陷脉悬钩子 xian mai xuan gou zi

Herbs 0.5–1 m tall. Stems brown or reddish brown, cylindric, glabrous, with sparse, small prickles. Leaves simple; stipules linear, 8–10 mm, glabrous, margin entire; blade lanceolate or oblong-lanceolate, 10–22 × 2–5 cm, veins 9–12 pairs, raised abaxially, impressed adaxially, both surfaces glabrous, adaxially

ally with sparse, small prickles along midvein, base rounded, margin sparsely sharply serrate, apex acuminate to caudate. Inflorescences terminal or axillary, 1-flowered. Pedicel 1.5–2.5 cm, glabrous, unarmed. Flowers to 1.5 cm in diam. Calyx abaxially glabrous; sepals erect after anthesis, ovate or lanceolate, 1–1.3 cm × 6–9 mm, apex abruptly pointed, inner sepals with yellowish gray tomentose margin. Petals white, 1.1–1.4 cm × 6–10 mm. Stamens many, shorter than petals; filaments broadened and flattened. Pistils nearly as long as stamens; ovary slightly soft hairy; torus basally with ca. 5 mm stalk; styles glabrous. Aggregate fruit brownish red, subglobose, ca. 2 cm in diam., glabrous; pyrenes 1–2 mm, deeply foveolate. Fl. Jun–Jul, fr. Aug–Sep.

• Montane valleys, dense forests, grasslands, wet waste places; 1300–1500 m. Fujian, Guangdong, Hunan, Jiangxi, Zhejiang.

75. *Rubus lasiostylus* Focke, Hooker’s Icon. Pl., ser. 3, 10: t. 1951. 1891.

绵果悬钩子 mian guo xuan gou zi

Shrubs to 2 m tall. Branchlets brown or reddish brown, glabrous or sparsely pubescent when young, glabrescent, ± with needle-like to curved prickles, sometimes glaucous. Leaves imparipinnate, 3(–7)-foliolate; petiole 5–10 cm, petiolule of terminal leaflet 2–3.5 cm, lateral leaflets subsessile, glabrous or sparsely pilose, with sparse, minute prickles; stipules ovate-lanceolate to ovate, 0.8–1.6 cm × (4–)6–10 mm, brownish, glabrous, apex acuminate; blade of leaflets ovate, broadly ovate, or elliptic, 3–10 × 2.5–9 cm, abaxially densely gray tomentose, with sparse, minute prickles along veins, adaxially sparsely thinly pubescent, base rounded to shallowly cordate, margin unevenly coarsely doubly serrate, usually 2- or 3-lobed on terminal leaflet, apex acuminate or acute. Inflorescences terminal, corymbose, 4–6 cm, several flowered, sometimes axillary and 1- or 2-flowered; bracts brownish, ovate-lanceolate to ovate, 0.8–1.6 cm × 5–10 mm, glabrous. Pedicel 2–4 cm, glabrous or hairy, ± with minute prickles. Flowers 2–3 cm in diam. Calyx purplish red, abaxially glabrous or hairy; sepals erect, rarely reflexed in fruit, broadly ovate, 1.2–1.8 cm × 6–10 mm, inner sepals with margin gray tomentose, apex acuminate. Petals red, suborbicular, 6–9 mm in diam., shorter than sepals, base narrowly clawed, margin erose or coarsely dentate. Stamens somewhat shorter than petals. Pistils many; apical part of ovary and basal part of style densely gray or grayish yellow long tomentose. Aggregate fruit red, globose, 1.5–2 cm in diam., densely long tomentose or not and soft hairy, with persistent styles. Fl. May–Jun, fr. Jul–Aug.

• Slopes, thickets, forests in valleys, forest margins, roadsides; 1000–3000 m. Hubei, Shaanxi, Sichuan, Yunnan.

- 1a. Aggregate fruit soft hairy, not tomentose 75e. var. *hubeiensis*
- 1b. Aggregate fruit densely long tomentose.
 - 2a. Abaxial surface of calyx and pedicel glabrous.
 - 3a. Leaves 3(–5)-foliolate; stipules and bracts 8–16 × 5–10 mm 75a. var. *lasiostylus*
 - 3b. Leaves 5(–7)-foliolate; stipules and bracts 8–10 × 4–5 mm 75b. var. *dizygos*

- 2b. Abaxial surface of calyx and pedicel hairy.
- 4a. Abaxial surface of calyx pubescent and with sparse, minute prickles; pedicel pubescent, glandular, with sparse, minute prickles 75c. var. *eglandulosus*
- 4b. Abaxial surface of calyx densely long tomentose, unarmed; pedicel long tomentose, with sparse, minute prickles 75d. var. *tomentosus*

75a. *Rubus lasiostylus* var. *lasiostylus*

绵果悬钩子(原变种) mian guo xuan gou zi (yuan bian zhong)

Rubus lasiostylus f. *glabratus* Focke.

Leaves 3(–5)-foliolate; stipules and bracts 0.8–1.6 cm × 5–10 mm. Abaxial surface of calyx and pedicel glabrous.

• Thickets on slopes, forests in valleys; 1000–2500 m. Hubei, Shaanxi, Sichuan, Yunnan.

75b. *Rubus lasiostylus* var. *dizygos* Focke in Sargent, Pl. Wilson. 1: 53. 1911.

五叶绵果悬钩子 wu ye mian guo xuan gou zi

Rubus pileatus Focke var. *canotomentosus* Focke.

Leaves 5(–7)-foliolate; stipules and bracts 8–10 × 4–5 mm. Abaxial surface of calyx and pedicel glabrous.

• Thickets in valleys, forest margins, grassy slopes; 2600–3000 m. Hubei, Sichuan.

75c. *Rubus lasiostylus* var. *eglandulosus* Focke, Hooker's Icon. Pl., ser. 3, 10: t. 1951. 1891.

腺梗绵果悬钩子 xian geng mian guo xuan gou zi

Pedicel pubescent, glandular, with sparse, minute prickles. Abaxial surface of calyx pubescent, with sparse, minute prickles.

• Thickets, roadsides. Hubei.

75d. *Rubus lasiostylus* var. *tomentosus* Focke, Hooker's Icon. Pl., ser. 3, 10: t. 1951. 1891.

绒毛绵果悬钩子 rong mao mian guo xuan gou zi

Pedicel long tomentose, with sparse, minute prickles. Abaxial surface of calyx densely long tomentose, unarmed.

• Slopes, roadsides. Hubei.

75e. *Rubus lasiostylus* var. *hubeiensis* T. T. Yu et al., J. Arnold Arbor. 64: 58. 1983.

鄂西绵果悬钩子 e xi mian guo xuan gou zi

Aggregate fruit soft hairy, not long tomentose.

• Slopes; 2700–2900. W Hubei.

76. *Rubus wushanensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 305. 1982.

巫山悬钩子 wu shan xuan gou zi

Shrubs to 2 m tall. Branchlets brownish, cylindric, glabrous, with sparse prickles. Leaves imparipinnate, 5(–7)-foliolate; petiole 8–10 cm, petiolule of terminal leaflet 2–3 cm, lateral leaflets subsessile, petiolule and rachis glabrous or sparsely pubescent, with sparse, small prickles; stipules purplish, suborbicular or broadly ovate, 1.2–1.8 × 1.2–1.9 cm, membranous, glabrous; blade of leaflets elliptic, oblong, or ovate-lanceolate, 10–12 × 3.5–7 cm, abaxially densely gray tomentose, adaxially glabrous, base rounded, obliquely rounded on lateral leaflets, margin irregularly coarsely serrate, apex acuminate. Inflorescences terminal, corymbose, several flowered; bracts broadly ovate or suborbicular, nearly as large as or slightly larger than stipules, membranous. Pedicel 2–3 cm, glabrous, unarmed. Calyx reddish brown, abaxially glabrous; sepals erect, broadly ovate or ovate-lanceolate, only inner sepals with gray tomentose margin, apex shortly acuminate. Petals narrowly obovate, shorter than sepals, base shortly clawed. Stamens many; filaments linear, base slightly broader. Pistils longer than stamens; apical part of ovary and basal part of style densely long gray tomentose. Aggregate fruit subglobose, ca. 1.5 cm in diam., densely long gray tomentose, with persistent styles. Fl. May–Jun, fr. Jul–Aug.

• Mountainous areas; below 2000 m. Chongqing (Wushan Xian).

77. *Rubus pentagonus* Wallich ex Focke, Biblioth. Bot. 17(Heft 72): 145. 1911.

掌叶悬钩子 zhang ye xuan gou zi

Shrubs scrambling, 1.5–3 m tall. Branchlets climbing, brownish to dark brown, slightly pubescent when young, later glabrous, with sparse prickles, often with stalked glands. Leaves palmately 3- or 5-foliolate; petiole 2–4 cm, sparsely pubescent, with stalked glands and minute prickles, rarely without stalked glands, leaflets sessile; stipules linear-lanceolate, 7–10 mm, puberulous, margin with shortly stalked glands, margin entire or deeply 2-laciniate; blade of leaflets rhombic-lanceolate, 3–8(–11) × 1.5–4 cm, abaxially sparsely pubescent, adaxially pilose along veins, base cuneate, margin incised coarsely doubly serrate, apex acuminate to caudate. Inflorescences terminal, corymbose, 2–3 cm, 2- or 3-flowered or with flowers solitary in leaf axils; bracts linear-lanceolate, 6–9 mm, often with stalked glands, margin entire or 2- or 3-laciniate. Pedicel 1.5–2.5 cm, glabrous, with sparse, gland-tipped hairs and small prickles. Flowers to 2 cm in diam. Calyx glabrous, abaxially glandular pubescent, with minute prickles; sepals erect, spreading, lanceolate or ovate-lanceolate, 0.8–1.2(–3) cm × 5–8 mm, margin entire or 3-laciniate, inner sepals with tomentose margin, apex acuminate or caudate. Petals white, elliptic or oblong, much shorter than sepals, base shortly clawed. Stamens many; filaments broad. Pistils 10–15, slightly shorter than stamens; style and ovary glabrous. Aggregate fruit red or orange-red, subglobose, to 2 cm in diam., glabrous, enclosed in calyx; pyrenes reniform, to 4 mm, rugose. Fl. Apr–May, fr. Jun–Jul.

Forests, forest margins on slopes, thickets, valleys, roadsides; 1300–3600 m. Guizhou, Sichuan, Xizang, Yunnan [Bhutan, NW India, N Myanmar, Nepal, Sikkim, Vietnam].

1a. Plants with stalked glands and minute

- or needle-like prickles 77a. var. *pentagonus*
- 1b. Plants usually without stalked glands, unarmed, rarely with few stalked glands or needle-like prickles.
 - 2a. Flowers more than 1.5 cm in diam.; sepals 2–3 cm, apically long caudate; leaves palmately 3-foliolate 77d. var. *longisepalus*
 - 2b. Flowers less than 1.5 cm in diam.; sepals not more than 2 cm, apically acuminate; leaves 3- or 5-foliolate.
 - 3a. Leaves palmately 3-foliolate 77b. var. *modestus*
 - 3b. Leaves palmately 5-foliolate 77c. var. *eglandulosus*

77a. *Rubus pentagonus* var. *pentagonus*

掌叶悬钩子(原变种) zhang ye xuan gou zi (yuan bian zhong)

Rubus tridactylus Focke.

Plants with stalked glands and minute or needle-like prickles. Flowers 1.5–2 cm in diam.

Evergreen forests, mixed forests, thickets; 1300–3600 m. Guizhou, Sichuan, Xizang, Yunnan [Bhutan, NW India, N Myanmar, Nepal, Sikkim, Vietnam].

77b. *Rubus pentagonus* var. *modestus* (Focke) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 37: 111. 1985.

无刺掌叶悬钩子 wu ci zhang ye xuan gou zi

Rubus modestus Focke, Abh. Naturwiss. Vereine Bremen 14: 296. 1897; *R. modicus* Focke.

Leaves palmately 3-foliolate. Flowers less than 1.5 cm in diam. Sepals not more than 2 cm.

• Forest margins on slopes, thickets, valleys; 1600–2800 m. Guizhou, Sichuan, Yunnan.

77c. *Rubus pentagonus* var. *eglandulosus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 306. 1982.

无腺掌叶悬钩子 wu xian zhang ye xuan gou zi

Leaves palmately 5-foliolate. Flowers less than 1.5 cm in diam. Sepals not more than 2 cm.

• Forests; 2000–2400 m. SE Xizang (Mêdog Xian).

77d. *Rubus pentagonus* var. *longisepalus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 305. 1982.

长萼掌叶悬钩子 chang e zhang ye xuan gou zi

Leaves palmately 3-foliolate. Flowers more than 1.5 cm in diam. Sepals 2–3 cm, apex long caudate.

• Mixed forests on slopes, roadsides; 1500–2000 m. SE Yunnan (Pingbian Xian, Wenshan Xian).

78. *Rubus quinquefoliolatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 306. 1982.

五叶悬钩子 wu ye xuan gou zi

Shrubs scandent, ca. 1.5 m tall. Branchlets reddish brown

to purplish brown when young, grayish brown in age, terete, soft hairy, glabrescent, with sparse prickles. Leaves palmately 5-foliolate; petiole 2–4 cm; leaflets sessile or subsessile, soft hairy; stipules linear-lanceolate, 4–6 mm, puberulous, usually undivided; blade of leaflets elliptic-lanceolate or rhombic-lanceolate, 3–7 × 1–2.4 cm, terminal leaflet slightly longer than lateral leaflets, both surfaces soft hairy along veins, base cuneate, margin coarsely sharply serrate and doubly serrate, apex acuminate to caudate. Inflorescences terminal on lateral branchlets, 1-flowered; bracts linear-lanceolate, 3–5 mm, puberulous, margin entire. Pedicel 2–3.5 cm, glabrous. Flowers 1.5–2 cm in diam. Calyx abaxially glabrous, unarmed or with sparse, needle-like prickles; tube broadly pelviform; sepals erect, spreading, ovate-lanceolate or triangular-lanceolate, 8–10 mm, margin entire, rarely apically shallowly 2- or 3-laciniate, inner sepals tomentose at margin, apex caudate. Petals white, ovate or elliptic, much shorter than sepals, puberulous, base slightly clawed. Stamens many, uniseriate; filaments broad, complanate. Pistils 10–15; ovary and base of style yellowish villous. Aggregate fruit red, semiglobose, 1–1.5 cm in diam., together with persistent styles villous, enclosed in calyx; pyrenes to 4 mm, rugose. Fl. Apr–May, fr. May–Jun.

• Slopes, stream side forests, mixed forests on low ridges; 1600–2500 m. SW Guizhou (Anlong Xian), SW Yunnan (Shuangjiang Xian).

79. *Rubus peltatus* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, ser. 3, 17: 154. 1872.

盾叶莓 dun ye mei

Shrubs upright or climbing, 1–2 m tall. Branchlets reddish brown or brownish, cylindric, glabrous, with sparse prickles; prickles broad, flat, glaucous. Leaves simple; petiole 4–8 cm, glabrous, with minute prickles; stipules brownish, ovate or ovate-lanceolate, 1–1.5 cm × 7–10 mm, membranous, glabrous, margin entire; blade peltate, ovate-orbicular, 7–17 × 6–15 cm, both surfaces appressed villous, abaxially with more dense small prickles along midvein, base cordate, margin palmately 3–5-lobed; lobes triangular-ovate, terminal lobe slightly longer than or as long as lateral leaflets, irregularly tenuous-serrate, apex acute to shortly acuminate. Inflorescences ca. 5 cm or more in diam., 1-flowered; bracts ovate or ovate-lanceolate, 7–12 × 4–7 mm, glabrous. Pedicel 2.5–4.5 cm, glabrous. Calyx tube pelviform, glabrous; sepals ovate-lanceolate, 1–1.4 cm × 6–8 mm, soft hairy, margin usually dentate, or apically laciniate; lobes linear. Petals white, suborbicular, 1.8–2.5 cm in diam., longer than sepals. Stamens numerous, unequal in length, much shorter than petals; filaments subulate or linear. Pistils to 100 or slightly more, soft hairy. Aggregate fruit orange-red, terete or cylindric, 3–4.5 × 1–1.5 cm, densely soft hairy; pyrenes rugose. Fl. Apr–May, fr. Jun–Jul. $2n = 14$.

Slopes, foothills, forest margins, ravines, moist waste places; 300–1500 m. Anhui, Guizhou, Hubei, Jiangxi, Sichuan, Zhejiang [Japan].

The edible fruit are used in medicine.

80. *Rubus glabricarpus* W. C. Cheng, Contr. Biol. Lab. Sci. Soc. China, Bot. Ser. 10: 147. 1936.

光果悬钩子 guang guo xuan gou zi

Shrubs to 3 m tall. Branchlets brown or reddish brown,

terete, slender, prickly; prickles basally broadened and flattened; young shoots brown-yellow to purplish red, with soft hairs and intermixed glandular hairs or glabrous. Leaves simple; petiole 1–2 cm, slender, with soft hairs and intermixed glandular hairs or glabrous, with minute prickles; stipules linear, 5–8 mm, pilose, with intermixed glandular hairs; blade narrowly ovate to ovate-lanceolate, 4–7 × 2–4.5 cm, both surfaces soft hairy, more densely so or with glandular hairs along veins, sparsely pilose in age, base somewhat cordate or subtruncate, margin 3-, rarely 5-lobed or incised-lobed, irregularly doubly serrate or incised-serrate, with stalked glands, apex acuminate. Inflorescences terminal or axillary, 1-flowered, ca. 1.5 cm in diam. Pedicel 5–10(–15) mm, soft hairy or glabrous, with stalked glands. Calyx soft hairy, abaxially with stalked glands; tube campanulate; sepals lanceolate, 7–10 × 2–4 mm, apex caudate. Petals white, ovate-oblong or oblong, 8–10 × 4–7 mm, nearly as long as sepals, glabrous, apex obtuse or subacute. Stamens many, shorter than petals; filaments broad, complanate. Pistils shorter than stamens; ovary glabrous, with sparse, glandular hairs. Aggregate fruit red, ovoid-globose, 1(–2) cm in diam., glabrous or with sparse, stalked glands; pyrenes rugose. Fl. Mar–May, fr. May–Jun.

• Slopes, bases of mountains, river banks, forests; low to medium elevations. Fujian, Jiangsu, Zhejiang.

1a. Branchlets, petioles, and pedicel with soft hairs and stalked glands; aggregate fruit ca. 1 cm in diam. 80a. var. *glabricarpus*

1b. Branchlets, petioles, and pedicel glabrous, with sparse, stalked glands; aggregate fruit 1.5–2 cm in diam. 80b. var. *glabratus*

80a. *Rubus glabricarpus* var. *glabricarpus*

光果悬钩子(原变种) *guang guo xuan gou zi* (*yuan bian zhong*)

Rubus corchorifolius Linnaeus f. var. *neillioides* Focke; *R. neillioides* (Focke) Migo.

Branchlets, petioles, and pedicel soft hairy, with stalked glands. Aggregate fruit ca. 1 cm in diam.

• Slopes, bases of mountains, river banks, mixed forests; low to medium elevations. Fujian, Jiangsu, Zhejiang.

80b. *Rubus glabricarpus* var. *glabratus* C. Z. Zheng & Y. Y. Fang, J. Hangzhou Univ., Nat. Sci. Ed. 15(2): 198. 1988.

无毛光果悬钩子 *wu mao guang guo xuan gou zi*

Rubus jiangxiensis Z. X. Yu et al.

Branchlets, petioles, and pedicel glabrous, with sparse, stalked glands. Aggregate fruit 1.5–2 cm in diam. or slightly larger.

• Forests on slopes; ca. 1100 m. Zhejiang (Suichang Xian).

81. *Rubus corchorifolius* Linnaeus f., Suppl. Pl. 263. 1782.

山莓 *shan mei*

Rubus althaeoides Hance; *R. arisanensis* Hayata; *R. arisanensis* var. *horishaensis* Hayata; *R. corchorifolius* var. *glaber* Matsumura; *R. corchorifolius* var. *oliveri* (Miquel) Focke; *R. corchorifolius* f. *roseolus* Z. X. Yu; *R. involucratus* Focke; *R.*

kerrifolius H. Léveillé & Vaniot; *R. oliveri* Miquel; *R. otophorus* Franchet; *R. shinkoensis* Hayata; *R. suishaensis* Hayata; *R. vaniotii* H. Léveillé & Vaniot; *R. villosus* Thunberg.

Shrubs erect, 1–3 m tall. Branchlets brownish or dark brown to blackish brown, cylindric, prickly, finely hairy, glabrescent. Leaves simple; petiole 1–2 cm, with dense fine, soft hairs when young, with sparse, minute prickles; stipules linear-lanceolate or linear, 5–7 mm, soft hairy; blade ovate to ovate-lanceolate, 5–12 × 2.5–5 cm, abaxially somewhat dark, densely finely pubescent when young, gradually glabrescent, subglabrescent, with sparse, small prickles along midvein, adaxially pale, finely pubescent along veins, base somewhat cordate, sometimes subtruncate or subrounded, margin undivided or 3-lobed, usually 3-divided on sterile branches, irregularly sharply serrate to doubly serrate, apex acuminate. Inflorescences 1-flowered or few flowers terminal on short lateral branchlets. Pedicel (0.6–) 1–2 cm, finely pubescent. Flowers 1.5–2(–3) cm in diam. Calyx abaxially densely finely pubescent, unarmed; sepals ovate or triangular-ovate, 5–8 × 2.5–4 mm, apex acute to shortly acuminate. Petals white or pinkish, oblong or elliptic, 0.9–1.2 cm × 6–8 mm, longer than sepals, glabrous, base clawed, apex obtuse. Stamens much shorter than petals; filaments short, complanate. Pistils many, slightly shorter than stamens; ovary pubescent. Aggregate fruit of many drupelets, red, subglobose or ovoid-globose, 1–1.2 cm in diam., densely finely pubescent; pyrenes rugose. Fl. Feb–Apr, fr. Apr–Jun. $2n = 14$.

Sunny slopes, stream sides, montane valleys, thickets, waste places; 200–2600 m. Anhui, Fujian, Gansu (except NE), Guizhou, Guangdong, Guangxi, Hainan, Hebei, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Jilin, Liaoning, Nei Mongol, Ningxia, Shandong, Shanxi, S Shaanxi (Qin Ling), Sichuan, Yunnan, Zhejiang, Xizang [Japan, Korea, Myanmar, Vietnam].

The fresh fruit are used for making jam, drinks, and wine. The fruit, seeds, and roots are used in medicine. The stems and roots are a source of tannin.

A form with semidouble or double flowers has been named *Rubus corchorifolius* f. *semiplenus* Z. X. Yu. It occurs in Jiangxi and grows on thickets on slopes of hills at about 50 m in elevation.

82. *Rubus kwangsiensis* H. L. Li, J. Arnold Arbor. 26(1): 63. 1945.

广西悬钩子 *guang xi xuan gou zi*

Rubus peii R. H. Miao.

Shrubs climbing. Branchlets brown to grayish brown, slightly angled, glabrous, with sparse, curved prickles. Leaves simple; petiole 1.5–3 cm, glabrous, with sparse, curved prickles; stipules lanceolate, 6–8 mm, glabrous; blade narrowly obovate, 7–12 × 4–6 cm, lateral veins 7 or 8 pairs, abaxially glabrous, adaxially glabrous except slightly pubescent along veins, base subcordate, margin unevenly coarsely sharply serrate to doubly serrate, apex acuminate. Inflorescence terminal or axillary, 1-flowered. Pedicel ca. 1 cm, glabrous. Flowers ca. 2 cm in diam. Calyx abaxially glabrous; sepals triangular-lanceolate, 1–1.5 cm, margin slightly tomentose, apex acuminate to caudate. Petals red, obovate, 7–8 × 6–7 mm, glabrous or basally puberulous. Stamens shorter than petals; filaments linear. Pistils

many; soft hairy apically on apex of ovary and basally on style. Fruit unknown. Fl. Apr–May.

• Forests at mountain summits. Guangdong, NE Guangxi (Ziyuan Xian).

83. *Rubus taitoensis* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 96. 1911.

台东刺花悬钩子 tai dong ci hua xuan gou zi

Shrubs scandent, 1–2 m tall. Branchlets brownish to dark reddish brown, cylindric, slightly pubescent, with sparse prickles, glabrous or nearly so in age. Leaves simple; petiole 1–2(–4) cm, pubescent, with minute prickles; stipules linear-lanceolate, 6–9 mm, slightly pubescent; blade broadly ovate or triangular-ovate, 6–8(–10) × 3–5.5(–7) cm, papery, 3–5-veined, abaxially pale, pubescent, with small prickles along veins, adaxially thinly pubescent especially along veins, finally glabrous, base slightly cordate to truncate, margin incised-serrate to doubly serrate, 3-parted near middle or not lobed, central lobe contracted and becoming entire toward base, apex acuminate, lateral leaflets ovate, apex acute. Inflorescences terminal or axillary, 1-flowered or flowers in clusters of 2 or 3; bracts linear, 5–7 mm, slightly pubescent. Pedicel 1–2 cm, pubescent. Flowers 1.8–2.8 cm in diam. Calyx campanulate, abaxially pubescent, with sparse, needle-like prickles; sepals triangular-lanceolate, 7–12 × 3–5 mm, apex long caudate. Petals white, broadly ovate, 7–9 × 6–8 mm, glabrous, base clawed. Stamens numerous, shorter than petals; filaments broad, complanate. Pistils shorter than stamens; styles to 4 mm, base long hairy. Aggregate fruit red at maturity, globose, 0.9–1.2 cm in diam., sparsely pubescent, finally glabrous; pyrenes rugulose. Fl. May–Jun, fr. Jul–Aug. $2n = 14^*$.

• Mountainous regions; 1500–2800 m. Taiwan.

1a. Leaves 3-parted; petioles 1–2 cm 83a. var. *taitoensis*

1b. Leaves not lobed; petioles 2–4 cm 83b. var. *aculeatiflorus*

83a. *Rubus taitoensis* var. *taitoensis*

台东刺花悬钩子(原变种) tai dong ci hua xuan gou zi (yuan bian zhong)

Rubus aculeatiflorus Hayata var. *taitoensis* (Hayata) Y. C. Liu & Yang, nom. illeg.

Leaves deeply 3-lobed; petioles 1–2 cm.

• Mountainous regions; 1500–2500 m. Taiwan.

83b. *Rubus taitoensis* var. *aculeatiflorus* (Hayata) H. Ohashi & C. F. Hsieh, Fl. Taiwan, ed. 2, 3: 143. 1993.

刺花悬钩子 ci hua xuan gou zi

Rubus aculeatiflorus Hayata, Icon. Pl. Formosan. 5: 39. 1915; *R. mingetsensis* Hayata; *R. mingetsensis* var. *taitoensis* (Hayata) Y. C. Liu & Yang.

Leaves not lobed; petioles 2–4 cm.

• Mountains; 1500–2800 m. Taiwan.

84. *Rubus trianthus* Focke, Biblioth. Bot. 17(Heft 72): 140. 1911.

三花悬钩子 san hua xuan gou zi

Rubus conduplicatus Duthie ex Hayata; *R. incisus* Thunberg var. *conduplicatus* (Duthie ex Hayata) Koidzumi; *R. incisus* var. *formosanus* (Cardot) Masamune; *R. incisus* subsp. *koehneanus* (Focke) Koidzumi; *R. koehneanus* Focke; *R. koehneanus* var. *formosanus* Cardot; *R. retusipetalus* Hayata.

Shrubs scandent, 0.5–2 m tall. Branchlets brown or dark purplish to purplish black, terete, slender, glabrous, with few prickles to 5 mm and glaucous bloom. Leaves simple; petiole 1–3(–4) cm, glabrous, with sparse, minute prickles; stipules lanceolate or linear, 7–9 mm, glabrous; blade ovate-lanceolate to oblong-lanceolate, 4–9 × 2–5 cm, papery, both surfaces glabrous, abaxially usually pale or whitish, base cordate, rarely subtruncate, margin 3-lobed or not, usually deeply 3-lobed on sterile branchlets, terminal lobe ovate-lanceolate, unevenly incised-serrate to doubly serrate, apex acuminate. Inflorescences terminal or axillary, flowers in clusters of 3 or in short few flowered racemes, 3–5 cm; bracts lanceolate or linear, 5–7 mm, glabrous. Pedicel 1–2.5 cm, glabrous. Flowers 1–1.7 cm in diam. Calyx cupular, abaxially glabrous; sepals triangular-ovate to lanceolate, 5–8 × 2.5–4 mm, apex acuminate to long caudate. Petals white, oblong or elliptic, rarely obovate, longer than sepals, both surfaces glabrous or slightly pubescent becoming glabrous, base clawed. Stamens many, shorter than petals; filaments broad, complanate. Pistils ca. 10–50, shorter than stamens; ovary glabrous. Aggregate fruit red at maturity, subglobose, ca. 1 cm in diam., glabrous; pyrenes rugose. Fl. Apr–May, fr. May–Jun.

Mixed forests on slopes, forest margins, grassy slopes, roadsides, stream sides, montane valleys; 500–2800 m. Anhui, Fujian, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Vietnam].

Further study is required to determine the identity of *Rubus glabricarpus* W. C. Cheng var. *eglandulosus* Y. Gu & W. L. Li (Bull. Bot. Res., Harbin 20: 122. 2000), described from Yunnan, which might be synonymous with *R. trianthus*.

85. *Rubus grayanus* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, ser. 3, 7: 152. 1872.

中南悬钩子 zhong nan xuan gou zi

Shrubs 0.5–2 m tall. Branchlets brownish to purplish brown, slightly angled, glabrous, nearly unarmed or with sparse prickles. Leaves simple; petiole 2–3 cm, slender, glabrous, with sparse, minute prickles; stipules linear, 5–7 mm, glabrous; blade ovate to elliptic, 7–10 × 3–6 cm, both surfaces glabrous, or with few soft hairs only along veins, abaxially with sparse, minute prickles along midvein, base truncate to cordate, margin often undivided, sometimes 3–5-lobed, unevenly coarsely sharply serrate to doubly serrate, apex acuminate to caudate. Inflorescences terminal on short branchlets, 1-flowered. Pedicel 1–2.5 cm, glabrous, occasionally with sparse, glandular hairs. Flowers to 2 cm in diam. Calyx abaxially glabrous; tube pelviform; sepals spreading or reflexed in fruit, ovate-triangular, 0.8–1.4 cm × 3–5 mm, margin tomentose, apex caudate. Petals red, 0.8–1.4 cm in diam., nearly as long as or slightly longer than sepals, glabrous, base shortly clawed. Stamens many; filaments and anthers purplish red. Pistils numerous, more than

100, shorter than stamens; ovary purplish red, glabrous; styles glabrous. Aggregate fruit yellowish red, ovoid-globose, 1–1.2 cm in diam., glabrous; pyrenes reniform, small, foveolate. Fl. Apr–May, fr. Jun–Jul. $2n = 14$.

Slopes, sunny areas, montane valleys, thickets, mixed forests along water courses; 300–1100 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang [Japan].

- 1a. Leaves often not divided 85a. var. *grayanus*
- 1b. Leaves usually 3-divided 85b. var. *trilobatus*

85a. *Rubus grayanus* var. *grayanus*

中南悬钩子(原变种) *zhong nan xuan gou zi* (yuan bian zhong)

Leaves often undivided, sometimes 3–5-lobed only on sterile branchlets.

Slopes, sunny areas, montane valleys, thickets, mixed forests along water courses; 500–1100 m. Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang [Japan].

85b. *Rubus grayanus* var. *trilobatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 307. 1982.

三裂中南悬钩子 *san lie zhong nan xuan gou zi*

Leaves usually 3-lobed; lobes triangular-ovate, terminal lobe ca. more than $2 \times$ as long as lateral leaflets.

- Slopes; 300–700 m. C and N Fujian (Chong'an Xian, Sha Xian), Zhejiang.

86. *Rubus yanyunii* Y. T. Chang & L. Y. Chen, Guihaia 15(1): 1. 1995.

九仙莓 *jiu xian mei*

Shrubs scrambling or suberect, 1–2(–3) m tall. Branches brown or dark brown, glabrous; annotinous branchlets brownish, glabrous, with sparse, curved prickles. Leaves simple; petiole 1.5–2.5 cm, glabrous, sometimes with sparse, small stalked glands; stipule linear or linear-lanceolate, 6–8 mm, glabrous; blade ovate or oblong to oblong-lanceolate, 6–12(–14) \times 3.5–4.5(–6) cm, abaxially pale gray or somewhat purplish red, sometimes with sparse, slender prickles along midvein, adaxially usually green, glabrous except puberulous at base of midvein, base cordate to deeply cordate, basal incision sometimes narrow and deep forming overlapped incised margin, margin serrate, apex acuminate or abruptly with a 1–2 cm point. Inflorescences terminal or axillary, 1-flowered; bracts similar to stipules, but smaller. Pedicel 0.8–1.8 cm, glabrous. Calyx abaxially glabrous; sepals triangular-lanceolate, 6–8 mm, glabrous or with sparse, minute stalked glands, apex caudate. Petals spreading, white, longer than sepals. Stamens many. Pistils numerous, densely gray tomentose. Aggregate fruit pale golden, subglobose; pyrenes reniform, ca. 1.5 mm, alveolate. Fl. spring, fr. spring–summer.

- Thickets at forest margins; 700–1600 m. S Fujian (Dehua Xian, Shanghang Xian).

87. *Rubus crataegifolius* Bunge, Mém. Acad. Imp. Sci. St.-Petersbourg Divers Savans 2: 98. 1835.

牛叠肚 *niu die du*

Rubus ampelophyllus H. Léveillé; *R. crataegifolius* f. *flavescens* Skvortsov; *R. davidianus* Kuntze; *R. ouensanensis* H. Léveillé & Vaniot; *R. wrightii* A. Gray.

Shrubs erect, 1–2(–3) m tall. Branchlets brown or reddish brown, angular, thinly pubescent when young, gradually glabrescent, with slightly curved prickles. Leaves simple; petiole 2–5 cm, pilose, with minute prickles, stipules linear, 6–8 mm, thinly pubescent or subglabrous; blade ovate to narrowly ovate, 5–12 \times 5–8 cm, palmately 5-veined, abaxially pubescent and with minute prickles along veins, adaxially subglabrous, base cordate or subtruncate, margin palmately 3–5-lobed; lobes ovate or narrowly obovate, terminal lobe usually acuminate, lateral leaflets acute, irregularly incised-serrate. Inflorescences terminal, rarely axillary, short racemes or flowers several in cluster, 3–5 cm; bracts linear, 4–7 mm, slightly pubescent. Pedicel 5–10 mm, pubescent. Flowers 1–1.5 cm in diam. Calyx abaxially thinly pubescent, subglabrous in fruit; sepals ovate-triangular or ovate, 6–9 \times 3–5 mm, apex acuminate. Petals white, elliptic or oblong, 7–9 \times 4–5 mm, base puberulous and long clawed, margin erose or slightly undulate. Stamens erect, much shorter than petals; filaments broad, complanate. Pistils numerous, slightly shorter than stamens; style and ovary glabrous. Aggregate fruit yellow to dark red, subglobose, ca. 1 cm in diam., glabrous, lustrous; pyrenes rugose. Fl. May–Jun, fr. Jul–Sep. $2n = 14^*$, 21^* , 28^* .

Sunny thickets on slopes, forest margins, ravines, roadsides; 300–2500 m. Hebei, Heilongjiang, Henan, Jilin, Liaoning, Nei Mongol, Shandong, Shanxi [Japan, Korea, E Russia].

88. *Rubus chingii* H. H. Hu, J. Arnold Arbor. 6: 141. 1925.

掌叶覆盆子 *zhang ye fu pen zi*

Shrubs lianoid, 1.5–3 m tall. Branchlets green when young, reddish brown in age, cylindrical, slender, glabrous, with sparse prickles 5–6 mm and glaucous bloom. Leaves simple; petiole green, 2–4 cm, slightly pubescent or glabrous, with sparse prickles 5–6 mm; stipules green, linear-lanceolate, 7–10 mm, puberulous or glabrous; blade suborbicular, 5–11(–16) \times 5–13(–18) cm, palmately (3–)5–7-veined, both surfaces pubescent or subglabrous, base cordate, margin usually palmately (3–)5(–8)-lobed; lobes elliptic to rhombic-lanceolate, terminal lobe slightly longer than lateral lobes, lobes contracted toward base, doubly serrate, apex acuminate to caudate. Inflorescences terminal on short branchlets, 1-flowered. Pedicel 2–3.5(–4) cm, usually glabrous. Flowers 2.5–4(–5) cm in diam. Calyx somewhat green or purplish red, abaxially densely pubescent; tube broadly pelviform; sepals narrowly ovate to ovate-oblong, 7–10 \times 4–6 mm, apex acute to shortly acuminate, abruptly long pointed. Petals white, elliptic or ovate-oblong, rarely obovate, 1–1.5(–2.5) \times 0.7–1.5 cm, glabrous, base shortly clawed, apex obtuse. Stamens many in 3 whorls, unequal in length, shorter than petals; filaments broad, complanate. Pistils numerous, shorter than longer stamens, nearly as long as shorter ones; ovary densely gray pubescent. Aggregate fruit red, subglobose, 1.5–2 cm in diam., densely gray pubescent; pyrenes rugose. Fl. Mar–Apr, fr. May–Jun. $2n = 14$.

Slopes, broad-leaved evergreen forests on hills, coniferous forests, thickets, roadsides; below 500–1000 m. Anhui, Fujian, Guangxi, Jiangsu, Jiangxi, Zhejiang [Japan].

The specific epithet honors the collector of the type specimen, R. C. Ching, although it was misspelled “chungii” in the protologue. Hu later corrected it to “chingii” (J. Arnold. Arbor. 7: 70. 1926).

The very sweet fruit are eaten fresh and are also used for making jam, jelly, and various drinks, including wine. The fruit, roots, and leaves are used in medicine.

- 1a. Leaves palmately 5-parted, rarely 3- or 7-parted; flowers 2.5–4 cm in diam.; petals 1–1.5(–2) cm 88a. var. *chingii*
- 1b. Leaves palmately 5–7-parted, rarely 6- or 8-parted; flowers 3–5 cm in diam.; petals 1.4–2.5 cm 88b. var. *suavissimus*

88a. *Rubus chingii* var. *chingii*

掌叶覆盆子(原变种) *zhang ye fu pen zi* (*yuan bian zhong*)

Rubus officinalis Koidzumi; *R. palmatus* Hemsley (1887), not Thunberg (1784).

Leaves palmately 5-parted, rarely 3- or 7-parted. Flowers 2.5–4 cm in diam. Petals 1–1.5(–2) cm.

Slopes, shaded thickets, roadsides; low to medium elevations. Anhui, Fujian, Guangxi, Jiangsu, Jiangxi, Zhejiang [Japan].

Further study is required to determine the identity of *Rubus septemlobus* H. L. Li (J. Arnold Arbor. 26: 62. 1945), described from Guangxi, which might be synonymous with *R. chingii* var. *chingii*.

88b. *Rubus chingii* var. *suavissimus* (S. Lee) L. T. Lu, Acta Phytotax. Sin. 38: 280. 2000.

甜茶 *tian cha*

Rubus suavissimus S. Lee, Guihaia 1(4): 17. 1981.

Leaves palmately 5–7-parted, rarely 6- or 8-parted. Flowers 3–5 cm in diam. Petals 1.4–2.5 cm.

• Broad-leaved evergreen forests on hills, coniferous forests, thickets; 500–1000 m. EC Guangxi (Guiping Xian, Jinxiu Xian).

The leaves are rich in sugar and are used to make a sweet tea in S China.

2. *Rubus* sect. *Lampobatus* Focke in Engler & Prantl, Nat. Pflanzenfam. 3(3): 31. 1888.

掌绿莓组 *chang lu mei zu*

Shrubs evergreen, prickly. Leaves usually ternate, sometimes pedately or palmately quinately compound, rarely simple, leathery; stipules mostly adnate to base of petiole, rarely free and on twig near petiole base. Flowers bisexual, forming large cymose panicles. Aggregate fruit separating from torus, or adnate to torus and separating from base of torus at maturity, hollow or not.

One species in China.

89. *Rubus lucens* Focke, Abh. Naturwiss. Vereine Bremen 4: 199. 1874.

光亮悬钩子 *guang liang xuan gou zi*

Shrubs evergreen, scandent, ca. 4 m tall. Branchlets thinly pubescent or subglabrous, becoming glabrescent, with minute prickles. Leaves ternately-pinnately compound, 3-foliolate; petiole 4–10(–15) cm, petiolule of terminal leaflet 1.5–3 cm, lateral leaflets shortly petiolulate, thinly pubescent or subglabrescent, with sparse prickles; stipules caducous, linear or lanceolate, 5–7 mm, thinly pubescent; blade of leaflets ovate, broadly elliptic, or ovate-lanceolate, 8–13 × 4–7 cm, leathery, lateral veins 8–10 pairs, adaxially shiny, both surfaces glabrous or thinly pubescent only along veins, base rounded or broadly cuneate, margin sparsely shallowly sharply serrate, apex cau

date. Inflorescences terminal or axillary, cymose panicles, terminal ones 15–30 cm, lateral ones shorter; rachis and pedicels thinly pubescent; bracts linear or lanceolate, 4–6 mm, puberulous. Pedicel ca. 1 cm. Calyx abaxially thinly soft hairy; tube pelviform; sepals erect in fruit, oblong, 4–6 × 2–3 mm, margin thinly gray tomentose, apex obtuse, abruptly pointed. Petals white or pink, obovate, nearly as long as sepals. Stamens usually 20–40, sometimes to more than 70, shorter than petals; filaments linear. Pistils 10 to more than 20, shorter than stamens; ovary soft hairy. Aggregate fruit subglobose, less than 1 cm in diam., glabrous or slightly soft hairy, enclosed in calyx; pyrenes coarsely rugose. Fl. Jun–Aug, fr. Oct–Dec.

Montane valleys, ravines, forests, thickets; 600–3000 m. S Yunnan [India, Indonesia, Philippines].

3. *Rubus* sect. *Rubus*

悬钩子组 *xuan gou zi zu*

Shrubs deciduous, usually prickly. Leaves ternate, papery, pedately or palmately quinately compound, rarely septernately compound, occasionally simple; stipules persistent, mostly adnate to base of petiole, rarely free and on twig near petiole base, narrow, undivided. Flowers bisexual, forming cymose panicles and subracemes, or several in clusters, or solitary. Aggregate fruit adnate to torus, separating from base of torus, rarely separating from torus at maturity, not or rarely hollow.

One species in China.

90. *Rubus caesius* Linnaeus, Sp. P. 1: 493. 1753.

欧洲木莓 *ou zhou mu mei*

Shrubs scandent, to 1.5 m tall. Branchlets yellow-green to

brownish, glabrous or puberulous, glaucous and with unequal long prickles. Leaves ternately-pinnately compound; petiole 4–7 cm, petiolule of terminal leaflet 1–2.5 cm, lateral leaflets subsessile, thinly pubescent, with minute prickles, sometimes with

intermixed shortly stipitate glands; stipules lanceolate or elliptic-lanceolate, 6–10 × 2–3 mm, pubescent, margin sparsely stipitate glandular; blade broadly ovate or rhombic-ovate, 4–7 × 3–7 cm, both surfaces puberulous, base rounded to truncate, margin incised, coarsely sharp doubly serrate, often 3-lobed, apex acute. Inflorescences terminal or axillary, corymbose or short racemes, several to more than 10-flowered, terminal ones to 14 cm, with more flowers, axillary ones shorter, few flowered; rachis and pedicels pubescent, with minute prickles, sometimes with intermixed shortly stipitate glands; bracts broadly lanceolate, 5–8 × 1–2 mm, pubescent or shortly stipitate gland

ular. Pedicel 1–1.5 cm. Flowers to 2 cm in diam. Calyx abaxially pubescent, with minute prickles; tube short, pelviform; sepals usually erect, ovate-lanceolate, 6–8 × 3–5 mm, apex acuminate. Petals white, broadly elliptic or broadly oblong, nearly as long as or slightly longer than sepals, glabrous, base shortly clawed. Stamens many, shorter than petals; filaments linear. Pistils nearly as long as or slightly shorter than stamens; style and ovary glabrous. Aggregate fruit black, subglobose, ca. 1 cm in diam., glabrous. Fl. Jun–Jul, fr. Aug.

Forests in montane valleys, ravines, river banks; 1000–1500 m. Xinjiang [Russia; SW Asia, Europe, North America].

4. *Rubus* sect. *Malachobatus* Focke, Abh. Naturwiss. Vereine Bremen 4: 187. 1874.

木莓组 mu mei zu

Shrubs, rarely subshrubs or herbs, often prickly. Leaves simple, rarely palmately or pedately compound, 3–5-foliolate; stipules caducous or persistent, free, on twig near base of petiole, broader, rarely narrower, serrate, lobed or dissected, occasionally not divided. Flowers usually bisexual, rarely unisexual, in cymose panicles, subracemes, or corymbs, rarely flowers several in clusters or solitary. Aggregate fruit adnate to torus, separating from base of torus at maturity, not hollow.

Ninety-two species (71 endemic) in China.

- 1a. Terminal inflorescences simple racemes or flowers solitary.
- 2a. Flowers solitary, rarely in clusters of 2 or 3, terminal or axillary.
- 3a. Leaves compound, 3-foliolate, both surfaces sparsely soft hairy.
 - 4a. Plants with stalked glands; lateral leaflets suborbicular or ovate; flowers 3–4 cm in diam.; pedicel 3–4 cm; pistils numerous 179. *R. wardii*
 - 4b. Plants without stalked glands; lateral leaflets ovate or elliptic; flowers 1–1.5 cm in diam.; pedicel ca. 1 cm; pistils not numerous 180. *R. metoensis*
- 3b. Leaves simple, glabrous or adaxially sparsely pubescent and abaxially tomentose.
 - 5a. Leaves leathery, both surfaces glabrous, margin subentire or sparsely serrulate, base rounded to subtruncate; petioles 0.5–1 cm; aggregate fruit ovoid-globose, densely thinly gray pubescent 181. *R. jambosoides*
 - 5b. Leaves not leathery, adaxially sparsely pubescent, abaxially tomentose, margin aristate-serrate, base deeply cordate to subauriculate; petioles 2–2.5 cm; aggregate fruit globose, glabrous at maturity 182. *R. lohfauiensis*
- 2b. Terminal inflorescences simple racemes; leaves palmately compound, 3–5-foliolate, or simple.
 - 6a. Leaves palmately compound, 3–5-foliolate.
 - 7a. Stipules and bracts palmately parted; leaflets sharply serrate; soft hairs of stamens deciduous in age 160. *R. playfairianus*
 - 7b. Stipules and bracts usually entire or only apically serrate; leaflets sparsely minute serrate; soft hairs of stamens persistent in age 161. *R. bambusarum*
 - 6b. Leaves simple.
 - 8a. Leaves deeply divided.
 - 9a. Leaves lobes lanceolate or narrowly oblong, margin sparsely minute sharply serrate; inflorescences and calyx without glandular hairs, or only abaxial surface of calyx with sparse, glandular hairs; aggregate fruit black 162. *R. henryi*
 - 9b. Leaf lobes elliptic or oblong, margin densely coarsely sharply serrate; inflorescences and calyx with sparse, glandular hairs; aggregate fruit red 163. *R. huangpingensis*
 - 8b. Leaves undivided or lobed.
 - 10a. Inflorescences stipitate glandular.
 - 11a. Stipules and bracts palmatipartite nearly to base, late caducous; inflorescences and abaxial surface of calyx villous, with sparse, glandular hairs, without needle-like prickles 170. *R. refractus*
 - 11b. Stipules and bracts entire or toothed, caducous; inflorescence and calyx with stipitate glands and needle-like prickles.
 - 12a. Leaves leathery, undivided, abaxially yellowish brown to rust colored tomentose; inflorescences and calyx with stipitate glands, with intermixed needle-like prickles 164. *R. dunnii*
 - 12b. Leaves not leathery, undivided or lobed, abaxially gray to rust colored tomentose; inflorescences and calyx with unequal stipitate glands and needle-like prickles.
 - 13a. Abaxial surface of leaves rust colored tomentose.
 - 14a. Leaves lanceolate to elliptic-lanceolate, base rounded to truncate, rarely shallowly cordate, not divided; abaxial surface of calyx tomentose; aggregate fruit dark red 168. *R. gressittii*

- 14b. Leaves ovate to ovate-lanceolate, base cordate, lobed or undulate; abaxial surface of calyx tomentose-villous; aggregate fruit black 169. *R. lichuanensis*
- 13b. Abaxial surface of leaves gray to yellowish gray tomentose.
- 15a. Leaves cordate at base, broadly ovate, lobed; inflorescences and abaxial surface of calyx with glandular hairs 2–4 mm, with needle-like prickles 167. *R. hanceanus*
- 15b. Leaves rounded or truncate to shallowly cordate at base, undivided; inflorescences and calyx with glandular hairs 1–2 cm, unarmed.
- 16a. Hairs of leaves of fruiting branchlets deciduous in age; sepals ovate or triangular-ovate 165. *R. swinhoei*
- 16b. Hairs of leaves of fruiting branchlets persistent in age; sepals lanceolate or triangular-lanceolate 166. *R. doyonensis*
- 10b. Inflorescences not stipitate glandular.
- 17a. Abaxial surface of leaves glabrous, or slightly hairy only along veins; terminal inflorescences corymbose racemes 178. *R. kawakamii*
- 17b. Abaxial surface of leaves tomentose; terminal inflorescences racemes.
- 18a. Leaves not leathery, abaxially gray or yellowish gray tomentose, coarsely sharply serrate.
- 19a. Aggregate fruit red; pedicel 1.5–3.5 cm; outer sepals apically lacinate, inner sepals entire; leaves basally subtruncate to shallowly cordate; stamens with few hairs only on anthers 175. *R. hemithyrus*
- 19b. Aggregate fruit purplish black; pedicel 0.7–1.5 cm; outer and inner sepals entire; leaves basally subrounded to subtruncate; stamens villous or glabrous.
- 20a. Leaves narrowly obovate or broadly ovate-lanceolate to narrowly lanceolate, base rounded to subtruncate; stamens glabrous or anthers slightly villous; styles ca. as long as or slightly longer than stamens 176. *R. preptanthus*
- 20b. Leaves elliptic or oblong-elliptic, base subrounded; stamens villous; styles much longer than stamens 177. *R. malifolius*
- 18b. Leaves leathery, abaxially densely yellowish to rust colored tomentose, minutely shallowly serrate.
- 21a. Pedicel and abaxial surface of calyx with dense, needle-like prickles; leaves abaxially yellowish brown tomentose 171. *R. fujianensis*
- 21b. Pedicel and abaxial surface of calyx unarmed; leaves abaxially rust colored or yellowish tomentose.
- 22a. Aggregate fruit black at maturity; leaves abaxially rust colored tomentellate, lateral veins 5–8 pairs; style villous 174. *R. caudifolius*
- 22b. Aggregate fruit red at maturity; leaves abaxially densely yellowish or yellowish brown tomentose, lateral veins 7–11 pairs; styles glabrous or villous.
- 23a. Leaves densely yellowish tomentose abaxially, lateral veins 8–11 pairs; petioles 0.8–1.5 cm; styles and ovary glabrous 172. *R. oblongus*
- 23b. Leaves densely yellowish brown tomentose abaxially, lateral veins 7–9 pairs; petioles 1.5–3 cm; styles and apex of ovary hairy 173. *R. liui*
- 1b. Terminal inflorescences cymose panicles or subracemes, rarely corymbs, or flowers several or solitary.
- 24a. Leaves palmately compound, 3–5-foliolate, rarely simple.
- 25a. Leaflets pinnately veined with (20–)30–50 pairs of lateral veins, abaxially densely sericeous; stipules and bracts not lobed 91. *R. lineatus*
- 25b. Leaflets reticulately veined, lateral veins few; abaxially tomentose or pilose; stipules and bracts palmately divided or not.
- 26a. Abaxial surface of leaflets tomentose; stipules and bracts 5–10 mm, palmately divided 92. *R. cochinchinensis*
- 26b. Abaxial surface of leaflets pilose; stipules and bracts leaflike, 20–35 mm, not divided, serrate 93. *R. foliaceistipulatus*
- 24b. Leaves simple.
- 27a. Stipules and bracts broader, usually 2–5 × 1–2 cm, rarely smaller, divided or serrate.
- 28a. Leaves abaxially glabrous except soft hairy along veins, lobed; stipules broadly to narrowly ovate, 2–3 cm 159. *R. wangii*
- 28b. Leaves abaxially densely tomentose or sericeous-villous, undulate, inconspicuously lobed or lobed; stipules oblong lanceolate, suborbicular, broadly ovate, to oblong, 1.5–5 cm.
- 29a. Leaves abaxially densely sericeous-villous, undulate or 3–5-lobed; flowers solitary or in clusters of 2 or 3 158. *R. crassifolius*
- 29b. Leaves abaxially tomentose, with narrow caudate lobes above middle or with broad obtuse or acute lobes; terminal inflorescences narrow cymose panicles or subracemes.
- 30a. Stipules oblong-lanceolate, 2–4(–5) cm; leaves elliptic or ovate-elliptic, rarely suborbicular, with irregular narrow caudate lobes above middle; inflorescences and calyx gray tomentose 154. *R. yiwuanus*
- 30b. Stipules broadly ovate or oblong, 1.5–3 cm; leaves suborbicular or broadly ovate to narrowly ovate, with broad obtuse or acute lobes; inflorescences and calyx villous or tomentose.

- 31a. Leaves broadly ovate to narrowly ovate, abaxially gray tomentose, apically acuminate, margin inconspicuously lobed; inflorescences and calyx with soft hairs 157. *R. pacificus*
- 31b. Leaves suborbicular or broadly ovate, abaxially with gray, yellowish gray, or yellowish brown hairs, apically acute or obtuse, margin undulate to lobed; inflorescences villous or tomentose.
- 32a. Stipules broadly ovate or broadly oblong, 1.5–2 cm; leaves 5–7-lobed, lobes acute apically; inflorescences and calyx villous 155. *R. stipulosus*
- 32b. Stipules oblong, 2–3 cm; leaves undulate or inconspicuously lobed, lobes obtuse apically, rarely acute; inflorescences and calyx tomentose 156. *R. irenaeus*
- 27b. Stipules and bracts narrower, less than 2×1 cm, rarely broader, divided and entire.
- 33a. Leaves abaxially \pm soft hairy, rarely glabrous.
- 34a. Subshrubs, nearly creeping, villous; inflorescences subracemes, several-flowered; leaves cordate at base 153. *R. hypopitys*
- 34b. Shrubs climbing or upright, taller; inflorescences cymose panicles or subracemes, many flowered, rarely few flowered; leaves rounded, subtruncate, or cordate at base.
- 35a. Leaves rounded or subtruncate, rarely shallowly cordate at base.
- 36a. Plants densely yellow glandular; inflorescences minutely soft hairy; abaxial surface of calyx subglabrous 138. *R. taronensis*
- 36b. Plant without glands; inflorescences pubescent or glabrous; abaxial surface of calyx pubescent or glabrous.
- 37a. Leaves basally truncate to subcordate.
- 38a. Leaves, inflorescences, and abaxial surface of calyx thinly pubescent; leaves elliptic or oblong, margin coarsely obtusely dentate 142. *R. yunanicus*
- 38b. Leaves, inflorescences, and abaxial surface of calyx yellowish sericeous-villous; leaves oblong or ovate-oblong to elliptic, margin minutely sharply serrate 143. *R. poliophyllus*
- 37b. Leaves basally rounded.
- 39a. Petioles to 1 cm; inflorescences and abaxial surface of calyx pubescent; carpels 5–10(–17) 139. *R. pirifolius*
- 39b. Petioles (0.7–)1–2 cm; inflorescences and abaxial surface of calyx glabrous or soft hairy; carpels more, usually more than 10, to many.
- 40a. Petioles 1–2 cm; leaves ovate-oblong or lanceolate, margin sparsely minute sharply serrate; inflorescences and abaxial surface of calyx glabrous 140. *R. acuminatus*
- 40b. Petioles 0.7–1 cm; leaves oblong-lanceolate, margin coarsely sharply serrate; inflorescences and abaxial surface of calyx soft hairy 141. *R. brevipetiolatus*
- 35b. Leaves cordate at base.
- 41a. Terminal inflorescences large lax cymose panicles.
- 42a. Plants glandular; leaves broadly ovate or narrowly obovate; sepals undivided; petals soft hairy on both surfaces 144. *R. forrestianus*
- 42b. Plants not glandular; leaves narrowly to broadly ovate; sepals undivided or pinnately laciniate; petals slightly pubescent or glabrous.
- 43a. Leaves narrowly ovate; pedicel 1–2 cm; sepals ovate or ovate-triangular, outer sepals pinnately laciniate; petals slightly pubescent 145. *R. laxus*
- 43b. Leaves broadly ovate, rarely oblong-ovate; pedicel 0.5–1 cm; sepals ovate-lanceolate or triangular-lanceolate, undivided; petals glabrous 146. *R. lambertianus*
- 41b. Terminal inflorescences narrow cymose panicles or subracemes.
- 44a. Abaxial surface of calyx with needle-like prickles.
- 45a. Leaves $6-9 \times 5-7$ cm; pedicel less than 1 cm; sepals broadly ovate, outer sepals pinnately divided; aggregate fruit 1–1.2 cm in diam. 147. *R. calycacanthus*
- 45b. Leaves $10-17 \times 15-20$ cm; pedicel 1.5–2.5 cm; sepals lanceolate or ovate-lanceolate, outer sepals apically 2- or 3-lacinate; aggregate fruit 1.4–1.8 cm in diam. 148. *R. gongshanensis*
- 44b. Abaxial surface of calyx without needle-like prickles.
- 46a. Plants usually without stalked glands, villous; leaves oblong to ovate-oblong; stipules 6–9 mm, deeply divided 152. *R. howii*
- 46b. Plants usually with stalked glands, soft hairy or glabrous; leaves lanceolate to ovate or broadly oblong.
- 47a. Plants with stalked glands, soft hairs, and bristles; leaves narrowly ovate or broadly oblong; petiole 2–3 cm; stipules deeply pinnate-lacinate 149. *R. menglaensis*
- 47b. Plants soft hairy or glabrous, with sparse, stalked glands; leaves lanceolate, ovate-lanceolate or oblong-lanceolate; petiole 1–4 cm; stipules subulate or linear-lanceolate to oblong-lanceolate, margin entire and palmatifid.

- 48a. Leaves ovate-lanceolate, base deeply cordate, basal incision broad; stipules subulate or linear-lanceolate, margin entire 150. *R. ichangensis*
- 48b. Leaves lanceolate or oblong-lanceolate, base cordate-auriculate, basal incision narrow; stipules oblong-lanceolate or ovate-lanceolate, palmatifid 151. *R. latoauriculatus*
- 33b. Leaves abaxially densely tomentose.
- 49a. Leaves narrow, ovate-oblong or ovate-lanceolate to lanceolate, not divided, rarely lobed basally, pinnately veined; petioles 0.5–2(–4) cm.
- 50a. Leaves basally rounded to shallowly cordate; petioles 0.5–1.5 cm; plants with or without stalked glands.
- 51a. Plants without stalked glands; petioles 1–1.5 cm; leaves oblong-lanceolate, abaxially densely yellow or grayish yellow tomentose 96. *R. xichouensis*
- 51b. Plants wholly or partly with stalked glands; petioles 0.5–0.8 cm; leaves lanceolate or oblong, abaxially densely gray tomentose.
- 52a. Stipules and bracts palmately divided above middle; leaves subleathery, lanceolate; branchlets, petioles, and inflorescences glabrous, stalked glands not present; abaxial surface of calyx tomentose, with stalked glands 94. *R. dolichophyllus*
- 52b. Stipules and bracts deeply divided to below middle or to base; leaves papery, lanceolate or oblong; branchlets, petioles, inflorescences, and abaxial surface of calyx yellowish villous, with sparse, glandular hairs 95. *R. raopingensis*
- 50b. Leaves basally deeply cordate; petioles 0.5–3.5 cm; plants with stalked glands.
- 53a. Stipules and bracts linear or lanceolate, entire; terminal inflorescences narrow cymose panicles or short subracemes; petioles 1–1.5 cm 99. *R. angustibracteatus*
- 53b. Stipules and bracts palmate-laciniate; terminal inflorescences broad cymose panicles; petioles 0.5–3.5 cm.
- 54a. Adaxial surface of leaves appressed villous, basal incision shallow, broad, 2 basal short lobes not touching; petioles often 0.5–1 cm, rarely longer; sepals 0.5–1 cm, shortly acuminate 97. *R. parkeri*
- 54b. Adaxial surface of leaves hairy only along veins, basal incision narrow, to 2 cm deep, 2 basal long lobes touching; petioles 2–3.5 cm; sepals 1–1.5 cm, apex subulate or long caudate 98. *R. panduratus*
- 49b. Leaves broad, suborbicular, broadly ovate, or elliptic to oblong, not divided or lobed, palmately 5-veined from base; petioles more than 2 cm, rarely shorter.
- 55a. Leaves abaxially densely rusty yellow or rust colored, rarely rufous tomentose; terminal inflorescences short subracemes, rarely cymose panicles, with few flowers.
- 56a. Leaf base cuneate to rounded, undivided.
- 57a. Leaves narrowly ovate, rarely elliptic, with 8–10 pairs of lateral veins; terminal inflorescences lax cymose panicles, many flowered 131. *R. penduliflorus*
- 57b. Leaves ovate, with 4 or 5 pairs of lateral veins; terminal inflorescences short subracemes, few flowered 132. *R. malipoensis*
- 56b. Leaf base cordate, divided, or undivided.
- 58a. Leaves not divided or 2-lobed basally.
- 59a. Leaves ovate or narrowly ovate, undivided or somewhat undulate; stipules and bracts only apically palmately lobed; anthers and styles glabrous 136. *R. flagelliflorus*
- 59b. Leaves oblong-lanceolate or ovate-lanceolate, usually with 2 distinct lobes near base; stipules and bracts palmately parted basally; anthers and styles sericeous-villous 137. *R. hastifolius*
- 58b. Leaves divided or undulate.
- 60a. Leaves narrowly ovate, 3–5(–7)-lobed; stipules and bracts broadly obovate, 1–1.4 × 0.9–1.3 cm, pectinately or palmately divided; terminal inflorescences short subracemes, densely rust colored villous; abaxial surface of calyx rust colored villous, tomentose 135. *R. reflexus*
- 60b. Leaves ovate to suborbicular, lobed or undulate; stipules oblong, oblong-lanceolate to ovate-lanceolate, pinnate-laciniate or only apically palmately lobed; terminal inflorescence compact panicle or short subraceme; abaxial surface of calyx densely rust colored sericeous or yellow sericeous-villous or tomentose.
- 61a. Leaves 12–20 × 8–16 cm; stipules oblong-lanceolate, to 1.5 cm, pinnate-laciniate; terminal panicles compact, many flowered; calyx densely rust colored tomentose 133. *R. fuscifolius*
- 61b. Leaves 8–11 × 5–9 cm; stipules oblong or ovate-lanceolate, less than 1 cm, only apically palmately lobed; terminal inflorescences short subracemes, few flowered; abaxial surface of calyx yellow sericeous-villous, margin of sepals tomentose 134. *R. shihiae*
- 55b. Leaves abaxially densely gray or yellowish gray tomentose.
- 62a. Leaves ovate, narrowly ovate, or ovate-lanceolate to oblong, rarely broadly ovate or suborbicular, undivided or lobed, apically acuminate, rarely acute or obtuse; terminal inflorescences large broad cymose panicles, to 27 cm, rarely racemose.

- 63a. Plants with glandular hairs or bristles.
- 64a. Plants tomentose, bristly; leaves suborbicular, abaxially densely gray tomentose; fruit purplish black 103. *R. tephrodes*
- 64b. Plants pubescent, not bristly; leaves ovate or orbicular-ovate to narrowly ovate; fruit red, purplish red or purplish black.
- 65a. Leaves subleathery, broadly ovate or orbicular-ovate, abaxially yellowish tomentose; plants with stipitate glands ca. 1 mm; abaxial surface of calyx tomentose 102. *R. luchunensis*
- 65b. Leaves not leathery, narrowly to broadly ovate or orbicular-ovate, abaxially gray tomentose; plants with stipitate glands 2–3 mm; abaxial surface of calyx villous.
- 66a. Leaves ovate to narrowly ovate, apically obtuse to acute, margin undulate-lobed, lobes obtuse; sepals undivided 100. *R. feddei*
- 66b. Leaves broadly ovate or orbicular-ovate, apically acuminate, margin divided, lobes acute; sepals lacinate 101. *R. salwinensis*
- 63b. Plants without glandular hairs, rarely pedicel and abaxial surface of calyx with stalked glands.
- 67a. Leaves distinctly lobed, base cordate; petioles 3–7 cm 104. *R. lobophyllus*
- 67b. Leaves undivided, sometimes lobed, base rounded or cordate; petioles 0.5–10 cm.
- 68a. Leaves basally rounded, rarely subtruncate, oblong, ovate-oblong, or elliptic; petioles 0.5–1 cm 105. *R. assamensis*
- 68b. Leaves basally truncate to cordate, rarely suborbicular; petioles usually more than 2 cm.
- 69a. Leaves basally truncate, broadly triangular-ovate 106. *R. timifolius*
- 69b. Leaves basally cordate, rarely subrounded, suborbicular, broadly ovate.
- 70a. Inflorescences and abaxial surface of calyx sericeous-villous.
- 71a. Leaves suborbicular or broadly ovate.
- 72a. Leaves thickly papery, base cordate, margin sharply serrate; terminal cymose panicles large, broad; flowers apetalous 107. *R. chroosepalus*
- 72b. Leaves leathery, base truncate to shallowly cordate, margin shallowly obtusely serrate; terminal cymose panicles small, narrow; flowers petalous 108. *R. mallotifolius*
- 71b. Leaves narrowly ovate or ovate-lanceolate.
- 73a. Shrubs deciduous; leaves 7–10 cm, lobed; petioles 2–4 cm, sparsely villous; pedicel and abaxial surface of calyx with sparse, minute stalked glands 109. *R. fuscorubens*
- 73b. Shrubs evergreen; leaves 11–22 cm, not divided or shallowly undulate; petioles 5–10 cm, glabrous; pedicel and abaxial surface of calyx without stalked glands 110. *R. jianensis*
- 70b. Inflorescences and abaxial surface of calyx tomentose or tomentose-villous.
- 74a. Leaf base rounded to shallowly cordate; flowers 6–8 mm in diam.; abaxial surface of calyx tomentose; flowers petalous or apetalous.
- 75a. Leaves broadly ovate, rarely ovate-oblong, undivided; petioles glabrous; abaxial surface of calyx gray tomentose; flowers apetalous; aggregate fruit black 111. *R. cinclidodictyus*
- 75b. Leaves narrowly ovate to ovate-lanceolate, lobed; petioles tomentose; abaxial surface of calyx tomentose, gray tomentose on sepal margin; flowers petalous; aggregate fruit dark red 112. *R. xanthoneurus*
- 74b. Leaf base cordate; flowers 8–18 mm in diam.; abaxial surface of calyx tomentose and villous; flowers petalous.
- 76a. Leaves ovate to narrowly ovate, apically acuminate; petioles 2–4 cm; flowers to 18 mm in diam.; terminal cymose panicles broad, lax 113. *R. paniculatus*
- 76b. Leaves broadly ovate to suborbicular, rarely narrowly ovate, apically acute; petioles 1–2.5 cm; flowers 8–10 mm in diam.; terminal cymose panicles short, compact 114. *R. neoviburnifolius*
- 62b. Leaves suborbicular, broadly ovate to broadly oblong, lobed, apically obtuse or acute, rarely acuminate; terminal inflorescences always narrow cymose panicles or racemose, less than 17 cm.
- 77a. Stipules and bracts pinnately or palmately parted or irregularly lacerate nearly to base.
- 78a. Plants with dense stipitate glands; leaves suborbicular or broadly ovate, 4–6 cm; petioles 1–2 cm; sepals triangular-ovate, not divided 115. *R. nagasawanus*
- 78b. Plants without stipitate glands; leaves suborbicular to broadly ovate, 6–16 cm; petioles (2–)3–5(–8) cm; sepals apically 2- or 3-lacinate, with 3 bristles at apex or palmately to pinnately lacinate.

- 79a. Leaves broadly ovate, undivided or slightly undulate, abaxially hairs deciduous at maturity; terminal inflorescences narrow panicles or racemose; sepals lanceolate, outer sepals apically 2- or 3-laciniate 120. *R. chrysobotrys*
- 79b. Leaves suborbicular or broadly ovate, distinctly 3–7-divided, abaxially persistently tomentose; terminal inflorescences short subracemes or cymose panicles; outer sepals entire with 3 bristles only at apex or palmately to pinnately lacinate.
- 80a. Terminal inflorescences short subracemes, 3–6-flowered; sepals long obovate, outer sepals entire, with 3 bristles only at apex; adaxial surface of leaves not distinctly bullate between veins 119. *R. yuliensis*
- 80b. Terminal cymose panicles or subracemes, many flowered; sepals broadly ovate or triangular-ovate, outer sepals palmately to pinnately lacinate; adaxial surface of leaves prominently bullate or not.
- 81a. Adaxial surface of leaves prominently bullate between veins; terminal inflorescences narrow cymose panicles or subracemes 116. *R. alceifolius*
- 81b. Adaxial surface of leaves not prominently bullate between veins; terminal inflorescences broad cymose panicles.
- 82a. Branchlets, petioles, and inflorescences yellowish villous; pedicel 5–8 cm; petals and ovary pubescent 117. *R. platysepalus*
- 82b. Branchlets, petioles, and inflorescences grayish tomentose; pedicel 0.8–2 cm; petals pubescent; ovary glabrous 118. *R. arachnoideus*
- 77b. Stipules and bracts palmately or pinnately lobed, rarely parted.
- 83a. Plants with brownish bristles; leaves suborbicular, apically acute to caudate.
- 84a. Stipules and bracts 1.5–2 × 1.2–1.5 cm, parted, late caducous; flowers ca. 1 cm in diam.; sepals broadly ovate or ovate-lanceolate, apically caudate 121. *R. rufus*
- 84b. Stipules and bracts 1–1.2 × 0.7–1 cm, lobed, caducous; flowers 1.2–1.7 cm in diam.; sepals lanceolate or ovate-lanceolate, apically acute to shortly acuminate 122. *R. lasiotrichos*
- 83b. Plants without bristles; leaves suborbicular or broadly ovate, truncate, apically obtuse or acute.
- 85a. Shrubs low, climbing or prostrate; leaves abaxially glabrescent.
- 86a. Branchlets, petioles, and inflorescences thinly pubescent; leaf lobes acute; abaxial surface of calyx gray to yellowish gray pubescent, intermixed tomentose; sepals broadly ovate, outer sepals pinnate-laciniate on margin 129. *R. hunanensis*
- 86b. Branchlets, petioles, and inflorescences tomentose-villous; leaf lobes often obtuse; abaxial surface of calyx densely yellowish villous, intermixed tomentose; sepals lanceolate or ovate-lanceolate, outer sepals only apically lobed 130. *R. buergeri*
- 85b. Shrubs larger, climbing; leaves abaxially persistently tomentose.
- 87a. Terminal inflorescences short subracemes, few flowered; stipules and bracts broadly flabellate or broadly ovate to broadly oblong, 1–1.5(–2) × (0.6–)1–1.5 cm, pinnately or palmately parted to base.
- 88a. Leaves 3–5-lobed, lobes acute, rarely obtuse; stipules and bracts broadly ovate to broadly oblong; pedicel 3–4 mm; sepals triangular to ovate, outer sepals entire or only apically lobed 127. *R. formosensis*
- 88b. Leaves 5–7-lobed, lobes obtuse or acute; stipules and bracts broadly flabellate; pedicel 7–10(–15) mm; sepals narrowly ovate or ovate-lanceolate, outer sepals pinnately parted 128. *R. pinnatisepalus*
- 87b. Terminal inflorescences narrow cymose panicles or subracemes, many flowered; stipules and bracts subflabellate, obovate or ovate to ovate-lanceolate, 0.7–1.8 cm, pectinately to palmately divided or lacinate.
- 89a. Stipules and bracts subflabellate, broadly elliptic, or broadly obovate, 1–1.8 cm and ca. as broad, pectinately to palmately divided.
- 90a. Leaves palmately 7–9-lobed, terminal lobe obtuse or subtruncate, rarely acute; lobes of stipules usually undivided; pedicel 1–1.5 cm; flowers white, 1.5–2.5 cm in diam. 123. *R. pluribracteatus*
- 90b. Leaves usually 5-lobed, terminal lobe acute; lobes of stipules divided again; pedicel 1.5–3(–4) cm; flowers yellowish white or white, 1–1.5 cm in diam. 124. *R. reticulatus*
- 89b. Stipules and bracts ovate or ovate-lanceolate, rarely narrowly obovate, 0.7–1.1 cm and nearly as broad, apex palmate-laciniate.
- 91a. Leaves 5–7-lobed, lobes obtuse, rarely acute, sepals ovate-lanceolate, apically caudate; flowers purplish red; aggregate fruit black 125. *R. setchuenensis*
- 91b. Leaves 7–11-lobed, lobes acute; sepals broadly ovate, apically acute; flowers white; aggregate fruit red 126. *R. faberi*

91. *Rubus lineatus* Reinwardt in Blume, Bijdr. Fl. Ned. India 17: 1108. 1826.

绢毛悬钩子 *juan mao xuan gou zi*

Shrubs 1–2 m tall, much branched. Branchlets brownish to grayish brown, terete, with sparse, minute prickles, with dense appressed silvery-gray or yellowish gray silky hairs, glabrescent. Leaves palmately compound, 3–5-foliolate; petiole 2–5 cm, lateral leaflets sessile or subsessile, sericeous; stipules caducous, free, lanceolate or ovate-oblong, 1.2–2 cm, sometimes to 2–3 cm on sterile branchlets, often broad, membranous, abaxially densely sericeous, not divided; blade of leaflets oblong or lanceolate to oblanceolate, 8–12 × 1.5–3.5 cm, pinnately veined with (20–)30–50 pairs of parallel lateral veins terminating at margin, midvein and lateral veins prominent abaxially, impressed adaxially, abaxially densely silvery-gray or yellowish gray appressed-sericeous, adaxially glabrous or long hairy along midvein, base cuneate, margin sharply serrate to doubly serrate, apex acuminate to caudate. Inflorescences terminal and in axils of apical leaves, cymose panicles, ca. 15–20-flowered, sometimes flowers in clusters in leaf axils; rachis and pedicels sericeous or glabrescent; bracts lanceolate or ovate-oblong, smaller than stipules, sericeous. Pedicel 1–2 cm. Flowers ca. 1.5 cm in diam. Calyx abaxially densely silvery-gray or yellowish gray sericeous or glabrescent; sepals ovate-triangular to ovate-lanceolate, 6–12 × 3–7 mm, margin entire, apex acuminate to caudate. Petals white or greenish white, elliptic or obovate, much smaller than sepals, glabrous, base not distinctly clawed. Stamens ca. 50–150, glabrous, somewhat shorter than or subequaling petals. Pistils ca. 80–100 or more, shorter than stamens; apical part of ovary and basal part of style long hairy. Aggregate fruit orange to red at maturity, semiglobose or globose-ovoid, 7–10 mm in diam., sericeous when young, glabrescent; pyrenes distinctly rugose. Fl. Jul–Aug, fr. Sep–Oct.

Slopes, valleys, forests, forest margins, fallow fields; 1400–3000 m. Xizang, Yunnan [Bhutan, NE India, Indonesia, Malaysia, Myanmar, Nepal, Sikkim, N Vietnam].

- 1a. Pedicel and abaxial surface of calyx with deciduous sericeous hairs 91c. var. *glabrescens*
- 1b. Pedicel and abaxial surface of calyx with dense, persistent sericeous hairs.
 - 2a. Blade of leaflets oblong or lanceolate to oblanceolate 91a. var. *lineatus*
 - 2b. Blade of leaflets narrowly lanceolate 91b. var. *angustifolius*

91a. *Rubus lineatus* var. *lineatus*

绢毛悬钩子(原变种) *juan mao xuan gou zi* (*yuan bian zhong*)

Rubus pulcherrimus Hooker.

Pedicel and abaxial surface of calyx densely persistently sericeous. Blade of leaflets oblong or lanceolate to oblanceolate.

Slopes, valleys, forest understories, forest margins, fallow fields; 1400–3000 m. Xizang, Yunnan [Bhutan, NE India, Indonesia, Malaysia, Myanmar, Nepal, Sikkim, N Vietnam].

91b. *Rubus lineatus* var. *angustifolius* J. D. Hooker, Fl. Brit. India 2: 333. 1878.

狭叶绢毛悬钩子 *xia ye juan mao xuan gou zi*

Pedicel and abaxial surface of calyx with dense, persistent silvery hairs. Blade of leaflets narrowly lanceolate.

- Mixed forests; 1800–2800 m. NW Yunnan.

91c. *Rubus lineatus* var. *glabrescens* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 307. 1982.

光秃绢毛悬钩子 *guang tu juan mao xuan gou zi*

Pedicel and abaxial surface of calyx sericeous when young, glabrescent.

- Moist montane valleys, sparse forests; 1700–2000 m. SE Yunnan.

92. *Rubus cochinchinensis* Trattinnick, Rosac. Monogr. 3: 97. 1823.

蛇泡筋 *she pao jin*

Rubus fruticosus Loureiro (1790), not Linnaeus (1753); *R. playfairii* Hemsley.

Shrubs climbing. Branchlets brown to purplish brown, yellow tomentose when young, gradually glabrescent, with sparse, curved small prickles. Leaves palmately compound, 5-foliolate, sometimes 3-foliolate; petiole 4–5 cm, petiolule of leaflets 3–6 mm, tomentose when young, glabrate in age, with sparse, curved minute prickles; stipules flabellate, 5–7 mm, broader, tomentose initially, glabrate in age, palmately divided, lobes lanceolate; blade of leaflets elliptic, obovate-elliptic, or elliptic-lanceolate, 5–10(–15) × 2–3.5(–5) cm, central leaflet slightly larger than lateral leaflets, abaxially densely brown-yellow tomentose and with minute prickles along midvein, adaxially glabrous, base cuneate, margin irregularly sharply serrate, apex shortly acuminate. Inflorescences terminal ones cymose paniculate, axillary ones subracemes, sometimes flowers several in clusters in leaf axils; rachis and pedicels densely yellow tomentose, with sparse, curved small prickles; bracts caducous, 4–6 mm, narrow, palmately or pectinately divided, tomentose when young. Pedicel 4–10 mm. Flowers 0.8–1.2 cm in diam. Calyx campanulate, densely tomentose, unarmed abaxially; sepals ovate-orbicular, 4–6 × 3–5 mm, apex acuminate, outer sepals apically 3-lobed. Petals white, suborbicular, shorter than sepals. Stamens many, shorter than petals; filaments subulate, glabrous. Pistils 30–40, longer than petals, glabrous. Aggregate fruit red when immature, black at maturity, globose, 8–11 mm in diam., glabrous; pyrenes conspicuously rugose. Fl. Mar–May, fr. Jul–Aug.

Thickets, roadsides, slopes; low to medium elevations. Guangdong, Guangxi, Hainan, Sichuan, Yunnan [Cambodia, Laos, Thailand, Vietnam].

The fruit and roots are used in medicine.

93. *Rubus foliaceistipulatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 307. 1982.

托叶悬钩子 *tuo ye xuan gou zi*

Shrubs to 2 m tall. Branchlets brownish to dark reddish brown, glabrous, with sparse prickles. Leaves palmately com-

pound, 3-foliolate; petiole reddish brown, 1.5–3 cm, lateral leaflets subsessile, soft hairy when young, gradually glabrescent, with sparse prickles; stipules free, leaflike, ovate or narrowly ovate, 2–3.5 × 1–2 cm, herbaceous, glabrous, margin unevenly coarsely serrate, apex acuminate; blade of leaflets elliptic or oblong-elliptic, 6–14 × 2.5–5 cm, lateral veins 10–15 pairs, middle leaflet much longer than lateral leaflets, abaxially glabrous except puberulous along veins, adaxially glabrous or sparsely pubescent only along midvein, base broadly cuneate to rounded, margin irregularly coarsely sharply serrate, apex acuminate. Inflorescences terminal on lateral short branchlets, short racemes, flowers usually in clusters of 3–5; rachis and pedicels glabrous; bracts ovate or broadly triangular-ovate, slightly smaller than stipules, glabrous, margin unevenly serrate, apex acuminate. Pedicel 1–2 cm. Flowers 2–3 cm in diam. Calyx reddish brown, abaxially glabrous; sepals broadly ovate or triangular-ovate to ovate-lanceolate, 1.2–2 cm, apex long caudate; outer sepals broader, margin shallowly lacinate above middle or at apex, inner sepals entire, with tomentose margin. Petals erect after anthesis, white, elliptic or spatulate, 0.7–1.4 cm × 5–7 mm, glabrous. Stamens many, unequal in length, shorter than petals; filaments broad, complanate. Pistils numerous; style and ovary glabrous. Fruit unknown. Fl. May–Jun.

• Bamboo forests on slopes, *Rhododendron* thickets; 2800–3000 m. W Yunnan (Tengchong Xian).

94. *Rubus dolichophyllus* Handel-Mazzetti, *Sinensia* 3: 186. 1933.

长叶悬钩子 *chang ye xuan gou zi*

Shrubs lianoid, to 7 m tall. Branchlets brown or purplish brown, glabrous, with sparse, curved minute prickles, glaucous. Leaves simple; petiole 5–7 mm, adaxially puberulous; stipules free, 6–9 mm, glabrous, palmately divided above middle, lobes lanceolate; blade lanceolate, 7–16 × 1.5–3 cm, lateral veins 8–11 pairs, raised abaxially, impressed adaxially, subleathery, abaxially densely gray tomentose, adaxially glabrous, base rounded to shallowly cordate, margin with shallow sharp minute teeth, apex long acuminate. Inflorescences terminal or axillary, large cymose panicles, 14–20 cm, axillary ones shorter; rachis and pedicels glabrous or pubescent; bracts smaller than stipules, apex palmately lobed; lobes linear or nearly subulate, glabrous. Pedicel 1–1.4 cm. Flowers 6–9 mm in diam. Calyx purplish red, abaxially densely gray tomentose, with sparse, intermixed glandular hairs; tube pelviform; sepals lanceolate, 6–9 × 2–3 mm, margin entire, apex subulate-acuminate or caudate. Petals absent. Stamens shorter than sepals; filaments red, linear, glabrous. Pistils few; ovary glabrous; styles purplish red, ca. 4 mm, rarely as long as stamens. Aggregate fruit purplish black, with few drupelets, glabrous; pyrenes large, coarsely rugose. Fl. May–Jun, fr. Jul–Aug.

• Slopes, thickets in montane valleys, dense forests; 1000–3400 m. Guangxi, Guizhou.

- 1a. Rachis and pedicels glabrous; sepals reflexed in fruit 94a. var. *dolichophyllus*
- 1b. Rachis and pedicels pubescent; sepals erect in fruit 94b. var. *pubescens*

94a. *Rubus dolichophyllus* var. *dolichophyllus*

长叶悬钩子(原变种) *chang ye xuan gou zi* (yuan bian zhong)

Rubus chingianus Handel-Mazzetti.

Rachis and pedicels glabrous. Sepals reflexed in fruit.

• Slopes, thickets in montane valleys, dense forests; 1000–3400 m. Guangxi, Guizhou.

94b. *Rubus dolichophyllus* var. *pubescens* T. T. Yu & L. T. Lu, *Acta Phytotax. Sin.* 20: 309. 1982.

毛梗长叶悬钩子 *mao geng chang ye xuan gou zi*

Rachis and pedicels pubescent. Sepals erect in fruit.

• Thickets in montane valleys; below 2100 m. SW Guizhou (Panxian Tequ).

95. *Rubus raopingensis* T. T. Yu & L. T. Lu, *Acta Phytotax. Sin.* 20: 309. 1982.

饶平悬钩子 *rao ping xuan gou zi*

Shrubs scandent. Branchlets brown or dark purplish brown, terete, yellowish villous, with sparse, stipitate glandular hairs and sparse, curved prickles. Leaves simple; petiole 6–8 mm, yellowish villous, sparsely stipitate glandular; stipules caducous, free, deeply palmately divided nearly to base, lobes linear, villous, stipitate glandular; blade lanceolate or oblong-lanceolate, 7–12 × 2–4.5 cm, veins 6–8 pairs, slightly raised abaxially, papery, abaxially gray tomentose and with yellowish long hairs along veins, sometimes glabrescent, adaxially pubescent only along veins, base rounded to shallowly cordate, margin irregularly serrate, apex acuminate. Inflorescences terminal or axillary, cymose panicles, large, lax, many flowered; rachis and pedicels yellowish villous, stipitate glandular; bracts smaller than stipules, sparsely villous, with stalked glands. Pedicels unequal in length, longer ones to 2 cm, shorter ones 6–7 mm. Flowers not more than 1 cm in diam. Calyx purplish red, yellowish villous, with stalked glands; sepals erect in fruit, ovate-lanceolate, 5–7 × 3–5 mm, margin entire, apex caudate. Petals absent. Stamens many; filaments linear. Pistils few, longer than stamens; style and ovary glabrous. Aggregate fruit black, small, glabrous, with few drupelets, enclosed in calyx; pyrenes rugose. Fl. Apr–May, fr. Jul–Aug.

• Stream sides, roadsides, rockslides, montane valleys, forest margins; 600–700 m. S Fujian, E Guangdong.

- 1a. Leaves not glabrescent, margin densely sharply serrate 95a. var. *raopingensis*
- 1b. Leaves gradually glabrescent, margin minute obtusely serrate 95b. var. *obtusidentatus*

95a. *Rubus raopingensis* var. *raopingensis*

饶平悬钩子(原变种) *rao ping xuan gou zi* (yuan bian zhong)

Leaves tomentose abaxially, not glabrescent, margin densely sharply serrate.

• Stream sides, roadsides, rockslides, montane valleys, forest margins; low elevations. E Guangdong (Raoping Xian).

95b. *Rubus raopingensis* var. *obtusidentatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 310. 1982.

钝齿悬钩子 *dun chi xuan gou zi*

Leaves tomentose abaxially, gradually glabrescent, margin minutely obtusely serrate.

• Stream sides, forest margins; 600–700 m. S Fujian (Nanjing Xian).

96. *Rubus xichouensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 310. 1982.

西畴悬钩子 *xi chou xuan gou zi*

Shrubs climbing, 0.5–1 m tall. Branchlets brownish to reddish brown, yellowish sericeous-villous when young, glabrescent, unarmed or with sparse, minute prickles. Leaves simple; petiole reddish brown, 1–1.5 cm, yellowish sericeous-villous when young; stipules caducous, free, narrowly oblong, but broader near apex, to 1 cm, palmately divided, lobes linear, soft hairy; blade oblong-lanceolate, 11–19 × 2.5–5 cm, lateral veins 7–10 pairs, subleathery, abaxially densely yellow or grayish yellow tomentose, with sparse, intermixed long soft hairs along veins, adaxially glabrous or slightly pubescent only along veins, base rounded, margin irregularly sharply serrate, teeth abruptly pointed, apex caudate. Inflorescences terminal or axillary, terminal ones short cymose panicles, 4–6 cm, few flowered, axillary ones short racemes or shortly subcorymbose, sometimes flowers fewer, in clusters; rachis and pedicels densely yellow sericeous-villous; bracts narrowly oblong, less than 1 cm, palmately lobed; lobes linear, yellow sericeous-villous. Pedicel 5–10 mm. Flowers to 1 cm in diam. Calyx abaxially densely yellow sericeous-villous; sepals erect after anthesis, broadly ovate, margin tomentose, entire or outer sepals shallowly lacinate apically, apex acute or shortly acuminate. Petals white, suborbicular or broadly obovate, nearly as long as sepals, glabrous. Stamens many, glabrous; filaments linear. Pistils 30–40, longer than stamens; style glabrous. Fruit unknown. Fl. Apr–May.

• Sparse forests on slopes, broad-leaved evergreen forests; medium elevations. SE Yunnan.

97. *Rubus parkeri* Hance, J. Bot. 20: 260. 1882.

乌泡子 *wu pao zi*

Rubus parkeri var. *brevisetosus* Focke; *R. parkeri* var. *longisetosus* Focke; *R. tsangsihensis* K. S. Hao.

Shrubs scandent. Branchlets brown to dark reddish brown, slender, densely gray-villous, with sparse, intermixed purplish red glandular hairs and slightly curved prickles. Leaves simple; petiole 5–10 mm, rarely to 2 cm, densely villous, with sparse, intermixed glandular hairs, with minute prickles; stipules 8–11 mm, palmately lacinate, lobes linear, villous; blade ovate-lanceolate or ovate-oblong, 7–16 × 3.5–6 cm, lateral veins 5 or 6 pairs, raised abaxially, abaxially densely gray tomentose, intermixed villous, with sparse, minute prickles along veins, adaxially appressed villous, more densely so along veins, base cordate, basal incision shallow, broad, basal 2 lobes short, not touching, margin tenuously serrate, lobed, apex acuminate. Cymose panicles, large, 12–24 cm; rachis and pedicels densely villous, with unequal long purplish red stipitate glandular hairs

and sparse, minute prickles; bracts 6–9 mm, palmately lacinate; lobes linear, villous, stipitate glandular. Pedicel 0.8–1.2 cm. Flowers ca. 8 mm in diam. Calyx purplish red, abaxially densely villous, purplish red stipitate glandular; sepals ovate-lanceolate, 5–10 × 2.5–5 mm, margin entire, apex shortly acuminate. Petals white, sometimes absent. Stamens many, shorter than sepals; filaments linear. Pistils relatively few, shorter than stamens, glabrous. Aggregate fruit purplish black, globose, 4–6 mm in diam., glabrous. Fl. May–Jun, fr. Jul–Aug.

• Sparse or dense forests in mountainous regions, stream sides, rocky places in valleys; below 1000 m. Guizhou, Hubei, Jiangsu, Shaanxi, Sichuan, Yunnan.

98. *Rubus panduratus* Handel-Mazzetti, Symb. Sin. 7: 490. 1933.

琴叶悬钩子 *qin ye xuan gou zi*

Shrubs scandent, to 5 m tall. Branchlets slender, villous, with sparse, curved prickles, purplish red, with stalked glands. Leaves simple; petiole 2–3.5 cm, hirsute, purplish red, with stalked glands; stipules free, small, palmately lacinate, lobes linear, hirsute, stipitate glandular or not; blade ovate-lanceolate, 10–18 × 4–9 cm, abaxially densely gray tomentose and sparsely hirsute along veins, adaxially glabrous except hirsute or with sparse, stalked glands on veins, base deeply cordate, basal incision narrow, to 2 cm deep, basal lobes long, touching, margin irregularly sharply serrate, with shallow lobes above base, apex acuminate. Inflorescences terminal, cymose panicles, basal branches spreading; rachis, pedicels, and abaxial surface of calyx hirsute, with dense, purplish red or blackish purple stalked glands; bracts palmate-lacinate; lobes linear, hirsute, with stalked glands. Pedicel to 1 cm. Flowers to 1 cm in diam. Calyx reddish purple; sepals narrowly triangular-lanceolate, 1–1.5 cm, apex subulate or long caudate. Petals often absent or small and reduced. Stamens many, much shorter than sepals; filaments linear; anthers purple. Pistils few, glabrous. Aggregate fruit dark red or purplish black, small, dry at maturity; pyrenes rugose. Fl. Jun–Jul, fr. Jul–Aug.

• Forests, montane valleys; low to medium elevations. Guangdong, Guangxi, Guizhou, Hunan.

- 1a. Leaf blade densely gray tomentose abaxially 98a. var. *panduratus*
- 1b. Leaf blade not tomentose, sparsely hirsute only along veins abaxially 98b. var. *etomentosus*

98a. *Rubus panduratus* var. *panduratus*

琴叶悬钩子(原变种) *qin ye xuan gou zi* (*yuan bian zhong*)

Leaf blade densely gray tomentose abaxially.

• Sparse forests, montane valleys; low to medium elevations. Guangdong, Guangxi, Guizhou.

98b. *Rubus panduratus* var. *etomentosus* Handel-Mazzetti, Sinensia 5: 1. 1934.

脱毛琴叶悬钩子 *tuo mao qin ye xuan gou zi*

Leaf blade not tomentose, sparsely hirsute only along veins abaxially.

• Forests; ca. 800 m. Guangdong, Guangxi, Guizhou, Hunan.

99. *Rubus angustibracteatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 453. 1982.

狭苞悬钩子 xia bao xuan gou zi

Shrubs scandent. Branchlets grayish brown or purplish brown, pubescent, with intermixed glandular hairs initially, gradually glabrescent, with sparse, curved prickles. Leaves simple; petiole 1–1.5 cm, sparsely villous, with intermixed glandular hairs, with minute prickles; stipules caducous, free, linear or lanceolate, margin entire, villous, with intermixed glandular hairs; blade ovate-lanceolate or oblong-lanceolate, 7–12 × 2–4 cm, abaxially densely yellowish tomentose, intermixed villous along veins, with small curved prickles along midvein, adaxially glabrous, rarely slightly soft hairy along midvein, base deeply cordate, margin unevenly sharply serrate, undivided, apex acuminate. Inflorescences terminal or axillary, narrowly cymose-paniculate or short subracemes; rachis and pedicels villous, with glandular hairs, sometimes with minute prickles; bracts linear, villous, with intermixed glandular hairs, margin entire. Pedicel 5–8 mm. Flowers not more than 1 cm in diam. Calyx abaxially densely tomentose, intermixed yellowish villous and with purplish red glandular hairs; sepals erect in fruit, ovate or ovate-lanceolate, margin entire, apex acuminate. Petals suborbicular, small, much shorter than sepals, puberulous. Stamens numerous; filaments short, basally broadened and flattened. Pistils 20; apex of ovary and base of style soft hairy. Aggregate fruit with few drupelets, enclosed in calyx. Fl. May–Jun, fr. Jul–Aug.

- Forests in mountainous areas; 1900–2200 m. W Sichuan.

100. *Rubus feddei* H. Léveillé & Vaniot, Repert. Spec. Nov. Regni Veg. 8: 549. 1910.

黔桂悬钩子 qian gui xuan gou zi

Shrubs climbing. Branchlets grayish brown to purplish brown, villous, with sparse, slightly curved small prickles, sometimes with glandular hairs. Leaves simple; petiole 3–4(–6) cm, villous, with intermixed long glandular hairs and sparse, slightly curved minute prickles; stipules caducous, free, small, 4–6 mm, margin lacinate, lobes linear, with soft hairs and intermixed glandular hairs; blade ovate to narrowly ovate, 6–8 × 2–5 cm, palmately 5-veined, lateral veins 4 or 5 pairs, abaxially densely gray tomentose, with intermixed long soft hairs and glandular hairs to 2–3 mm along veins, adaxially villous, with intermixed glandular hairs along veins, base cordate, margin undulate-lobed, lobes obtuse, irregularly coarsely sharply serrate, apex obtuse to acute. Inflorescences terminal, cymose panicles, sometimes subcorymbose, to 25 cm; rachis and pedicels densely villous, with intermixed brownish purple long glandular hairs; bracts 3–5 mm, lacinate, villous, with intermixed glandular hairs. Pedicel 5–10 mm. Flowers 1–1.2 cm in diam. Calyx brownish red, villous, with long brownish purple glandular hairs; tube shallowly cupular; sepals erect in fruit, ovate to ovate-lanceolate, 8–11 × 2–5 mm, margin entire, apex acuminate to caudate. Petals white, small, inconspicuous, much shorter than sepals, narrow. Stamens many, longer than petals and shorter than sepals; filaments yellowish, linear. Pistils ca. 15–20, shorter than stamens, glabrous. Aggregate fruit red

when immature, purplish black at maturity, 7–10 mm in diam., with few drupelets. Fl. Jun–Aug, fr. Sep–Oct.

Slopes, forests, thickets, roadsides; low elevations. Guangxi, Guizhou, Yunnan [Vietnam].

This species is used medicinally. The fruit are edible.

101. *Rubus salwinensis* Handel-Mazzetti, Symb. Sin. 7: 491. 1933.

怒江悬钩子 nu jiang xuan gou zi

Shrubs scandent, to 2 m tall. Branchlets brown to grayish brown, terete, yellowish villous, with sparse, curved minute prickles, with sparse, stipitate glands to 2 mm. Leaves simple; petiole 3–5 cm, yellowish villous, sparsely stipitate glandular, with sparse, curved minute prickles; stipules caducous, free, to 1 cm, sparsely villous and stipitate glandular, apex lacinate, lobes linear or lanceolate; blade broadly ovate or orbicular-ovate, 8–13 × 7–10 cm, lateral veins 4–6 pairs, abaxially densely gray tomentose, yellowish villous along veins, adaxially sparsely villous, base cordate, margin distinctly lobed; lobes with dense sharp serrations, apex acute to acuminate. Inflorescences terminal, pyramidal cymose panicles, with spreading branches, 10–25 cm, many flowered; rachis and pedicels densely yellowish villous, sparsely stipitate glandular; bracts 6–8 mm, margin lacinate; lobes linear, villous, stipitate glandular. Pedicel 1–1.5 cm. Flowers ca. 1 cm in diam. Calyx abaxially densely yellowish villous, with sparse, stalked glands; tube short, ca. 7 mm; sepals triangular-lanceolate, 8–11 × 4–5 mm, margin usually lacinate, caudate; lobes lanceolate to linear-lanceolate, erect in fruit. Petals white, oblong, 3–6 × 2–3.5 mm, glabrous, base shortly clawed, apex dentate or not. Stamens many, shorter than sepals, glabrous; filaments linear. Pistils nearly as long as stamens; style and ovary glabrous. Aggregate fruit red, glabrous, with few drupelets, enclosed in calyx; pyrenes rugose, reticulate. Fl. Jun–Jul, fr. Aug–Sep.

- Ravines, forest margins; 1800–2500 m. Yunnan.

102. *Rubus luchunensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 456. 1982.

绿春悬钩子 lu chun xuan gou zi

Shrubs scandent. Branchlets purplish brown, yellowish villous, with short glandular hairs, with sparse, curved prickles. Leaves simple; petiole 2.5–4 cm, yellowish tomentose, with intermixed short glandular hairs and sparse, curved prickles; stipules caducous, 5–8 mm, palmately lobed, lobes linear, with soft hairs and intermixed short glandular hairs; blade broadly ovate to orbicular-ovate, 7–11 × 6–8 cm, palmately 5-veined, lateral veins 4 or 5 pairs, thickly leathery or subleathery, abaxially densely yellowish tomentose, intermixed villous along veins, adaxially sparsely villous, with intermixed short glandular hairs, glandular hairs deciduous in age, base cordate, margin undivided or undulate, unevenly sharply serrate, teeth abruptly pointed, to 1–2 mm, apex acute to shortly acuminate or obtuse. Inflorescences terminal, pyramidal cymose panicles with spreading branches, to 20 cm, many flowered; rachis and pedicels yellowish villous, with intermixed short glandular hairs; bracts 4–6 mm, with soft hairs and intermixed short

glandular hairs, apex lobed; lobes linear. Pedicel 1–2 cm. Flowers not more than 1 cm in diam. Calyx abaxially densely yellowish tomentose, with intermixed short glandular hairs; tube pelviform; sepals erect after anthesis, lanceolate, 6–10 mm, margin entire, apex acuminate. Petals elliptic, small, much shorter than sepals, glabrous, base clawed, apex acute. Stamens numerous, slightly shorter than or nearly as long as petals; filaments linear. Pistils 10–16, slightly longer than or nearly as long as stamens, glabrous. Aggregate fruit purplish red, less than 1 cm in diam., glabrous, with few drupelets. Fl. Apr–May, fr. Jun–Jul.

• Broad-leaved evergreen forest margins, moist places along roadsides, thickets on sunny slopes; 1700–2000 m. S Yunnan.

- 1a. Leaf blade subleathery, apex acute to shortly acuminate; cymose panicles 15–20 cm; sepals lanceolate 102a. var. *luchunensis*
- 1b. Leaf blade thickly leathery, apex acute or obtuse; cymose panicles less than 10 cm; sepals ovate 102b. var. *coriaceus*

102a. *Rubus luchunensis* var. *luchunensis*

绿春悬钩子(原变种) *lu chun xuan gou zi* (*yuan bian zhong*)

Leaf blade subleathery, apex acute to shortly acuminate. Cymose panicles 15–20 cm. Sepals lanceolate.

• Broad-leaved evergreen forest margins; ca. 1700 m. S Yunnan (Lüchun Xian).

102b. *Rubus luchunensis* var. *coriaceus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 456. 1982.

硬叶绿春悬钩子 *ying ye lu chun xuan gou zi*

Leaf blade thickly leathery, apex acute or obtuse. Cymose panicles less than 10 cm. Sepals ovate.

• Moist places along roadsides, thickets on sunny slopes; below 2000 m. S Yunnan (Jinping Xian).

103. *Rubus tephrodes* Hance, J. Bot. 12: 260. 1874.

灰白毛莓 *hui bai mao mei*

Shrubs scandent, to 3–4 m tall. Branchlets brown or purplish brown, densely gray tomentose, with sparse, curved prickles, ± with unequal long glandular hairs and bristles 1–3(–5) mm or without bristles. Leaves simple; petiole 1–3 cm, tomentose, with sparse, minute prickles or glandular hairs, bristly; stipules caducous, free, 5–8 mm, margin lacinate or pectinately parted, tomentose-villous; blade suborbicular, 5–11 × 5–10 cm, palmately 5-veined, lateral veins 3 or 4 pairs, abaxially densely gray tomentose, with sparse, small prickles and bristles along midvein, adaxially pilose or with sparse, glandular hairs, base cordate, margin 5–7-lobed, irregularly serrate, apex acute or obtuse. Inflorescences terminal, cymose panicles, 10–16 cm, many flowered; rachis and pedicels tomentose-villous, with sparse, glandular hairs and bristles; bracts 5–7 mm, pectinately lobed; lobes linear, tomentose-villous. Pedicel 4–10 mm. Flowers ca. 1 cm in diam. Calyx densely gray tomentose, usually without glandular hairs and bristles; sepals ovate, 4–7 × 3–5 mm, margin entire, apex acute. Petals white, suborbicular to oblong, slightly shorter than or nearly as long as sepals, pilose, base

shortly clawed. Stamens many, ca. as long as petals; filaments slightly broadened toward base. Pistils 30–50, longer than stamens; style and ovary glabrous. Aggregate fruit purplish black, globose, 1–1.5 cm in diam., glabrous, with many drupelets; pyrenes rugose. Fl. Jun–Aug, fr. Aug–Oct. *2n* = 28*.

• Mountainous regions and summits, foothills, slopes, roadsides, thickets, montane valleys; below 1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Taiwan, Zhejiang.

The name *Rubus megalothyrsus* needs to be lectotypified in order to place the name into the synonymy of either *R. tephrodes* var. *tephrodes* or var. *ampliflorus*.

- 1a. Plants without glandular hairs and bristles or sometimes only partly sparsely stipitate glandular or bristly 103d. var. *ampliflorus*
- 1b. Plants with glandular hairs or bristly.
 - 2a. Plants only with glandular hairs 1–1.5 mm, without bristles 103c. var. *holadenus*
 - 2b. Plants with glandular hairs and bristles.
 - 3a. Plants ± with short glandular hairs less than 3 mm and bristles 1–3 mm 103a. var. *tephrodes*
 - 3b. Plants with dense long glandular hairs and bristles to 5 mm 103b. var. *setosissimus*

103a. *Rubus tephrodes* var. *tephrodes*

灰白毛莓(原变种) *hui bai mao mei* (*yuan bian zhong*)

Rubus megalothyrsus Cardot, p.p. (excluding specimen “Lienchow River, Kwangtung,” Ford 74); *R. paniculatus* Smith var. *brevifolius* Kuntze.

Plants ± with short glandular hairs and bristles 1–3 mm.

• Slopes, roadsides, thickets; below 1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Taiwan.

103b. *Rubus tephrodes* var. *setosissimus* Handel-Mazzetti, Symb. Sin. 7: 492. 1933.

长腺灰白毛莓 *chang xian hui bai mao mei*

Rubus farinaceus Cardot.

Plants with long dense glandular hairs and bristles to 5 mm.

• Mountain summits, foothills, montane valleys; below 1500 m. Guangdong, Guizhou, Hunan, Jiangxi.

103c. *Rubus tephrodes* var. *holadenus* (H. Lévêillé) L. T. Lu, Acta Phytotax. Sin. 38: 281. 2000.

硬腺灰白毛莓 *ying xian hui bai mao mei*

Rubus holadenus H. Lévêillé, Repert. Spec. Nov. Regni Veg. 12: 536. 1913.

Plants only with glandular hairs 1–1.5 mm, without bristles.

• Slopes; below 1500 m. Guizhou.

103d. *Rubus tephrodes* var. *ampliflorus* (H. Léveillé & Vaniot) Handel-Mazzetti, Symb. Sin. 7: 492. 1933.

无腺灰白毛莓 wu xian hui bai mao mei

Rubus ampliflorus H. Léveillé & Vaniot, Bull. Soc. Bot. France 51: 218. 1904; *R. megalothyrsus* Cardot, p.p. (excluding specimen “Lienchow River, Kwangtung,” Ford 73); *R. schindleri* Focke; *R. tephrodes* var. *eglandulosus* Cheng; *R. tephrodes* var. *schindleri* (Focke) Handel-Mazzetti.

Plants without glandular hairs and bristles, rarely only partly sparsely stipitate glandular or bristly.

• Mountainous regions; low elevations. Guangdong, Guangxi, Guizhou, Hunan, Jiangsu, Jiangxi, Zhejiang.

104. *Rubus lobophyllus* Y. K. Shih ex F. P. Metcalf, Lingnan Sci. J. 19: 29. 1940.

角裂悬钩子 jiao lie xuan gou zi

Shrubs scandent, to 3 m tall. Branchlets grayish brown, terete, soft hairy, glabrescent, with sparse, curved prickles. Leaves simple; petiole 3–7 cm, densely villous, with sparse, curved minute prickles; stipules free, 1–1.4 cm, pilose, pinnately or palmately lobed; lobes lanceolate or linear; blade ovate to narrowly ovate, 8–14 × 5–12 cm, lateral veins 4 or 5 pairs, abaxially densely gray to yellowish gray tomentose and villous along veins, adaxially glabrous except villous along veins, base cordate, margin distinctly lobed, terminal lobe triangular-lanceolate, much larger and longer than lateral triangular ones, irregularly abruptly sharply serrate, apex acuminate. Inflorescences terminal or axillary, terminal ones narrow cymose panicles or subracemes, axillary ones subcorymbose or flowers several in a cluster; rachis and pedicels yellowish villous; bracts 0.8–1.2 cm, villous, pinnately or palmately lobed; lobes linear or lanceolate. Pedicel 1–1.5 cm. Flowers 6–8 mm in diam. Calyx abaxially densely yellowish villous and intermixed tomentose; sepals ovate, 6–8 × 3–5 mm, apex acute, outer sepals palmately or pinnately lacinate; lobes linear, erect in fruit. Petals white, suborbicular or obovate, slightly longer than or nearly as long as sepals. Stamens numerous, in 2 whorls; filaments linear, glabrous. Pistils many, much longer than stamens; ovary glabrous. Aggregate fruit red, subglobose, 7–9 mm in diam., glabrous, enclosed in calyx; pyrenes rugose. Fl. May–Jul, fr. Aug–Sep.

• Montane valleys, shrubby hillsides, forests on shaded slopes, ravines; 500–2100 m. Guizhou, Guangdong, Guangxi, Hunan, Yunnan.

105. *Rubus assamensis* Focke, Abh. Naturwiss. Vereine Bremen 4: 197. 1874.

西南悬钩子 xi nan xuan gou zi

Rubus bahanensis Handel-Mazzetti; *R. qinglongensis* Q. H. Chen & T. L. Xu; *R. sepalanthus* Focke.

Shrubs climbing. Branchlets brownish to purplish brown, terete, yellowish gray villous, with curved minute prickles. Leaves simple; petiole 5–10 mm, gray or yellowish gray villous; stipules caducous, free, broadly obovate or flabellate, 0.9–1.1 cm, palmately lacinate lobed, lobes linear to linear-lan-

ceolate, villous; blade oblong, ovate-oblong, or elliptic, 6–11 × 3.5–6 cm, lateral veins 5 or 6 pairs, abaxially densely gray or yellowish gray tomentose and villous along veins, adaxially villous, more densely so along veins, base rounded, rarely subtruncate, margin unevenly serrate, serrations apiculate, sometimes divided basally, apex acuminate. Inflorescences terminal or axillary, cymose panicles, 10–20 cm, many flowered; rachis and pedicels gray or yellowish gray villous, occasionally with sparse, minute glandular hairs; bracts obovate or subflabellate, 6–9 mm, villous, deeply lobed; lobes linear or lanceolate. Pedicel 7–11 mm. Calyx densely gray or yellowish gray tomentose and villous; sepals erect in fruit, ovate, 4–6 × 3–4 mm, apex long acuminate. Petals usually absent. Stamens many, somewhat shorter than or nearly as long as sepals; filaments linear. Pistils 10–15(–20), shorter than stamens, often glabrous. Aggregate fruit red when immature, black at maturity, subglobose, ca. 8 mm in diam., with several drupelets; pyrenes slightly rugose. Fl. Jun–Jul, fr. Aug–Sep.

Mixed forests, forest margins; 1400–3000 m. Guangxi, Guizhou, Sichuan, Xizang, Yunnan [NE India, NE Myanmar].

106. *Rubus tinifolius* C. Y. Wu ex T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 454. 1982.

截叶悬钩子 jie ye xuan gou zi

Shrubs erect or scandent, to 2 m tall. Branchlets grayish brown or reddish brown, densely yellowish tomentose-villous, with sparse, curved minute prickles. Leaves simple; petiole 2–4 cm, densely yellowish tomentose-villous, with sparse, curved minute prickles; stipules free, broadly obovate, 0.8–1.4 × 0.8–1.4 cm, villous, palmately lobed, lobes lanceolate; blade broadly triangular-ovate, 7–14 × 4.5–11 cm, lateral veins 4 or 5 pairs, abaxially densely gray or yellowish tomentose and intermixed villous along veins, adaxially villous along veins, base truncate, margin undivided, rarely shallowly undulate, irregularly serrate, apex acuminate. Inflorescences terminal or axillary, narrow panicles or subracemes, axillary ones subcorymbose or flowers few in clusters; rachis and pedicels yellowish tomentose-villous; bracts broadly obovate, 7–13 × 6–12 mm, villous, palmately lobed; lobes lanceolate. Pedicel ca. 1 cm. Flowers ca. 1 cm in diam. Calyx abaxially densely yellowish villous, intermixed tomentose; sepals ovate, 5–7 × 3–5 mm, apex acute, outer sepals often divided apically; lobes linear or lanceolate, inner sepals entire, erect in fruit. Petals white, suborbicular, base shortly clawed. Stamens many; filaments linear, glabrous. Pistils much longer than stamens; style and ovary glabrous. Aggregate fruit small, enclosed in calyx; pyrenes rugose, alveolate. Fl. May–Jun, fr. Jul–Aug.

• Ravines, roadsides, montane valleys, forests; 1400–2100 m. SE Yunnan.

107. *Rubus chroosepalus* Focke, Hooker’s Icon. Pl., ser. 3, 10: t. 1952. 1891.

毛萼莓 mao e mei

Shrubs scandent, semievergreen. Branchlets brownish or dark brown to blackish brown, soft hairy when young, glabrescent, with sparse, curved prickles. Leaves simple; petiole 4–7 cm, glabrous or hairy, with sparse, slightly curved prickles;

stipules caducous, free, lanceolate, to 1.8 cm, sericeous-villous or arachnoid hairy, undivided or apically lobed; blade suborbicular to broadly ovate, 5–10.5 cm in diam., palmately 5-veined, lateral veins 5 or 6 pairs, raised abaxially, impressed adaxially, thickly papery, abaxially densely gray or yellowish white tomentose or arachnoid hairy, sparsely pilose along veins, adaxially glabrous, base cordate, margin inconspicuously undulate, with uneven sharp teeth, apex shortly acuminate. Inflorescences terminal, cymose panicles, 17–27 cm; rachis and pedicels sericeous-villous or arachnoid hairy; bracts caducous, lanceolate, shorter than stipules, both surfaces sericeous-villous or arachnoid hairy, margin entire or 3-lobed apically. Pedicel 3–7 mm. Flowers 1–1.5 cm in diam. Calyx abaxially densely gray or yellowish white sericeous-villous; tube shallowly cupular; sepals ovate or ovate-lanceolate, 5–7 × 3–4 mm, margin tomentose, entire, apex acuminate. Petals absent. Stamens many, shorter than sepals; filaments subulate. Pistils ca. 15, longer than stamens, glabrous. Aggregate fruit purplish black or black, globose, ca. 1 cm in diam., glabrous; pyrenes rugose. Fl. May–Jun, fr. Jul–Aug.

Thickets on slopes, forest margins; 300–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan [Vietnam].

- 1a. Branchlets pubescent when young, glabrescent; petioles glabrous; leaves abaxially gray or yellowish white tomentose; inflorescences sericeous-villous 107a. var. *chroosepalus*
- 1b. Branchlets, petioles, leaves abaxially and inflorescences densely yellowish arachnoid hairy 107b. var. *araneosus*

107a. *Rubus chroosepalus* var. *chroosepalus*

毛萼莓(原变种) mao e mei (yuan bian zhong)

Rubus chroosepalus var. *omeiensis* Matsuda; *R. mouyou-sensis* H. Léveillé; *R. petaloideus* H. Léveillé.

Branchlets soft hairy when young, glabrescent. Petioles glabrous; leaves gray or yellowish white tomentose abaxially. Inflorescences sericeous-villous.

Thickets on slopes, forest margins; 300–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Yunnan [Vietnam].

107b. *Rubus chroosepalus* var. *araneosus* Q. H. Chen & T. L. Xu, Acta Bot. Yunnan. 15: 363. 1993.

蛛丝毛萼莓 zhu si mao e mei

Branchlets, petioles, leaves abaxially, and inflorescences densely yellowish arachnoid hairy.

- Thickets; below 1000 m. Guizhou (Sishui).

108. *Rubus mallotifolius* C. Y. Wu ex T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 454. 1982.

楸叶悬钩子 qiu ye xuan gou zi

Shrubs scandent. Branchlets purplish brown, soft hairy when young, subglabrescent, with sparse, curved minute prick-

les. Leaves simple; petiole 4–6 cm, soft hairy when young, glabrescent, with sparse, minute prickles; stipules caducous, free; blade triangularly broadly ovate to suborbicular, 9–12 cm, palmately 5-veined, lateral veins 3–5 pairs, prominent abaxially, impressed adaxially, leathery, abaxially densely yellowish gray tomentose, villous along veins, adaxially glabrous, lustrous, base truncate to shallowly cordate, margin unevenly shallowly obtusely serrate, apex acute or abruptly shortly pointed. Inflorescences terminal or axillary, lax narrow cymose panicles, 10–16 cm, axillary inflorescences sometimes racemes; rachis and pedicels yellow sericeous-villous; bracts suborbicular or broadly oblong, densely yellow sericeous-villous, apex palmately or pectinately lobed; lobes lanceolate. Pedicel 4–6 mm. Flowers 7–9 mm in diam. Calyx abaxially densely yellow sericeous-villous; sepals erect after anthesis, broadly ovate or suborbicular, 6–7 × 3–5 mm, margin entire, inner sepals usually with tomentose margin, apex obtuse. Petals white, suborbicular, glabrous. Stamens many; filaments short, broad, complanate. Pistils slightly longer than stamens; style and ovary glabrous. Fruit unknown. Fl. Jun–Jul.

- Montane valleys, dense forests; 1200–2000 m. SE Yunnan.

109. *Rubus fusciorubens* Focke in Sargent, Pl. Wilson. 1: 50. 1911.

黄毛悬钩子 huang mao xuan gou zi

Shrubs deciduous. Branchlets brownish to dark brown, tomentose-villous, gradually glabrescent, with sparse, slightly curved prickles. Leaves simple; petiole 2–4 cm, villous when young, glabrate in age, with sparse, curved small prickles; stipules caducous, free, 5–9 mm, deeply divided to base, lobes linear, villous; blade narrowly ovate, 7–10 × 4–6.5 cm, palmately 5-veined, lateral veins 4 or 5 pairs, thickly papery, abaxially densely gray tomentose, adaxially pilose along veins, base cordate, margin shallowly lobed, thinly sharply serrate, apex acuminate. Inflorescences often terminal, cymose panicles, 10–20 cm; rachis and pedicels yellowish sericeous-villous; bracts 5–7 mm, villous, divided above middle; lobes linear. Pedicel 3–6 mm, with sparse, glandular hairs. Flowers ca. 1 cm in diam. Calyx densely yellowish sericeous-villous, sometimes with sparse, intermixed glandular hairs; sepals ovate, 5–6 × 2.5–4 mm, puberulous, margin entire, apex long acuminate. Petals much shorter than sepals or absent. Stamens many, shorter than sepals; filaments linear. Pistils not more than 20, shorter than stamens; style and ovary glabrous. Aggregate fruit black, subglobose, with few drupelets. Fl. May–Jun, fr. Jul–Aug.

- Mountainous areas; 400–1200 m. Hubei.

110. *Rubus jianensis* L. T. Lu & Boufford, nom. nov.

常绿悬钩子 chang lu xuan gou zi

Replaced synonym: *Rubus sempervirens* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 455. 1982, not Bigelow (1824).

Shrubs evergreen, 1–3 m tall. Branchlets reddish brown, terete, glabrous, with curved prickles. Leaves simple; petiole 5–10 cm, glabrous, with curved prickles; stipules caducous; blade narrowly ovate or broadly ovate-lanceolate, 11–22 × 5.5–11 cm, palmately 5-veined, lateral veins 8–10 pairs, leathery, abax-

ially densely gray or grayish yellow tomentose, slightly villous along veins, adaxially glabrous, base cordate, margin undivided or shallowly undulate, irregularly coarsely sharply serrate, apex acuminate. Inflorescences terminal, cymose panicles; rachis and pedicels yellowish sericeous-villous; bracts similar to stipules, apex deeply lobed; lobes lanceolate, sericeous-villous. Pedicel 1–1.4 cm. Flowers 1–1.4 cm in diam. Calyx abaxially densely yellowish sericeous-villous, usually without glandular hairs; sepals ovate or ovate-lanceolate, margin entire, apex acute to acuminate. Petals absent. Stamens many; filaments linear. Pistils ca. 14–20; ovary glabrous. Aggregate fruit red, semiglobose, 1 cm or less in diam., glabrous, enclosed in calyx; pyrenes reniform, distinctly rugose. Fl. May–Jun, fr. Jul–Aug.

- Slopes, foothills, montane valleys; 700–900 m. C and SW Jiangxi.

111. *Rubus cinclidictyus* Cardot, Notul. Syst. (Paris) 3: 295. 1914.

网纹悬钩子 wang wen xuan gou zi

Shrubs climbing, to 2 m tall, long stoloniferous. Branches grayish brown to dark reddish brown, glabrous, with sparse, somewhat curved prickles or nearly unarmed. Leaves simple; petiole 1–4 cm, shortly petiolate at bases of inflorescences, glabrous, with sparse, slightly curved prickles; stipules caducous, free, oblong or liguliform, 1–1.4 cm, glabrous or subglabrous, apex divided; blade broadly ovate, rarely ovate-oblong, 9–12 × 6–9 cm, palmately veined from base, abaxially densely gray tomentose, adaxially glabrous, base rounded to shallowly cordate, margin irregularly coarsely sharply serrate, apex shortly caudate. Inflorescences terminal, cymose panicles, much branched, pyramidal, to 10–22 cm; rachis and pedicels tomentose; bracts oblong or liguliform, rarely ovate, 1–1.2 cm, tomentose, apex divided. Pedicel 0.7–1.5 cm. Flowers 6–8 mm in diam. Calyx purple, abaxially densely gray tomentose; tube shorter, shallowly pelviform; sepals erect or reflexed after anthesis, ovate or ovate-lanceolate, 4–6(–7) × 2–3 mm, margin entire, rarely with 2 or 3 teeth, apex acuminate. Petals usually absent. Stamens many, in 1 whorl, shorter than sepals; filaments linear, glabrous. Pistils slightly shorter than stamens, glabrous. Aggregate fruit black at maturity, subglobose, less than 1 cm in diam., glabrous. Fl. Jun–Jul, fr. Aug–Sep.

- Slopes, forests, forest margins, river banks; 1200–3300 m. Sichuan, Yunnan.

112. *Rubus xanthoneurus* Focke, Bot. Jahrb. Syst. 29: 392. 1900.

黄脉莓 huang mai mei

Shrubs climbing, to 3 m tall. Branchlets grayish brown, gray or yellowish gray tomentose, gradually glabrescent, with sparse, minute prickles. Leaves simple; petiole (1–)2–3 cm, tomentose, with sparse, minute prickles; stipules free, ovate to ovate-lanceolate, 7–9(–25) mm, soft hairy, margin and apex deeply lacinate, lobes linear; blades narrowly ovate to ovate-lanceolate, 7–12 × 4–7 cm, lateral veins 7 or 8 pairs, brownish yellow, prominently raised abaxially, abaxially densely gray or yellowish white tomentose, adaxially villous along veins, base truncate to shallowly cordate, margin often lobed, with irregular, rough, sharp teeth, apex acuminate. Inflorescences termi-

nal and axillary, cymose panicles, 12–24 cm; rachis and pedicels tomentose; bracts lanceolate or ovate-lanceolate, 5–7(–25) mm, apex and margin deeply lobed; lobes linear, soft hairy. Pedicel to 1.2 cm. Flowers less than 1 cm in diam. Calyx abaxially tomentose, gradually glabrescent; tube pelviform; sepals ovate, 6–7 × 3–5 mm, apex acuminate, outer sepals shallowly lobed, margin scarious, persistently tomentose. Petals white, obovate, 3–4 × 2.5–3.5 mm, shorter than sepals, puberulous, base clawed. Stamens many, nearly as long as petals; filaments linear. Pistils 10–35, slightly longer than stamens, glabrous. Aggregate fruit dark red, subglobose, glabrous; pyrenes rugulose. Fl. Jun–Jul, fr. Aug–Sep.

Forests, mountainous areas, montane valleys, ravines, roadsides, fallow fields; 500–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Yunnan [Thailand].

- 1a. Petioles 2–3 cm; stipules and bracts less than 1 cm; pedicel and abaxial surface of calyx without glandular hairs 112a. var. *xanthoneurus*
- 1b. Petioles 1–2.5 cm; stipules and bracts 1–2.5 cm; pedicel and abaxial surface of calyx with glandular hairs or not.
 - 2a. Pedicel and abaxial surface of calyx with glandular hairs 112b. var. *glandulosus*
 - 2b. Pedicel and abaxial surface of calyx without glandular hairs 112c. var. *brevipetiolatus*

112a. *Rubus xanthoneurus* var. *xanthoneurus*

黄脉莓(原变种) huang mai mei (yuan bian zhong)

Rubus dielsianus Focke; *R. gentilianus* H. Léveillé & Vaniot; *R. lambertianus* Seringe subsp. *xanthoneurus* (Focke) Focke; *R. lambertianus* var. *xanthoneurus* Focke; *R. spinipes* Hemsley.

Petiole 2–3 cm; stipules and bracts less than 1 cm. Pedicel and abaxial surface of calyx without glandular hairs.

Forests on slopes, ravines, roadsides, fallow fields; 1300–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Yunnan [Thailand].

112b. *Rubus xanthoneurus* var. *glandulosus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 455. 1982.

腺毛黄脉莓 xian mao huang mai mei

Petiole 1–2.5 cm; stipules and bracts 1–2.5 cm. Pedicel and abaxial surface of calyx with glandular hairs.

- Forests, mountainous areas, roadsides; 800–1100 m. Guangxi, Guizhou.

112c. *Rubus xanthoneurus* var. *brevipetiolatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 455. 1982.

短柄黄脉莓 duan bing huang mai mei

Petiole ca. 1 cm; stipules and bracts longer than petioles. Pedicel and abaxial surface of calyx without glandular hairs.

- Montane valleys, mixed forests; 500–1500 m. Guizhou.

113. *Rubus paniculatus* Smith in Rees, Cycl. 30: *Rubus* no. 41. 1819.

圆锥悬钩子 yuan zhui xuan gou zi

Shrubs scandent, to 3 m tall. Branchlets brownish to reddish brown, terete, yellowish gray tomentose-villous, gradually glabrescent, with sparse, minute prickles. Leaves simple; petiole 2–4 cm, yellowish gray or gray tomentose-villous, usually unarmed; stipules oblong or ovate-lanceolate, to 8–11 mm, villous, margin lacinate lobed above middle, lobes linear; blade ovate to narrowly ovate, 9–15 × 6–10 cm, lateral veins 5–7 pairs, abaxially densely yellowish gray to gray tomentose, villous along veins or glabrescent, adaxially villous, more densely so along veins, base cordate, margin undulate or inconspicuously lobed, irregularly coarsely serrate to doubly serrate, apex acuminate. Inflorescences terminal or axillary, terminal ones cymose panicles, laxly spreading, 10–24 cm, axillary inflorescences smaller, subracemes; rachis and pedicels yellowish gray or gray tomentose-villous; bracts elliptic or oblong to lanceolate, 7–9 mm, villous, apex lobed or not divided. Pedicel to 1.5 cm. Flowers to 1.8 cm in diam. Calyx abaxially tomentose and villous; sepals ovate to lanceolate, 5–7 × 2–4 mm, apex acute to caudate-acuminate, outer sepals lobed, inner sepals entire. Petals white to yellowish white, oblong, 6–8 mm in diam. Stamens many, shorter than petals; filaments linear, glabrous. Pistils longer than stamens, glabrous. Aggregate fruit dark red to blackish purple, globose, glabrous; pyrenes distinctly rugose. Fl. Jun–Aug, fr. Sep–Oct.

Forests, ravines, stream sides; 1500–3200 m. Xizang, Yunnan [Bhutan, N India, Kashmir, Nepal, Sikkim].

- 1a. Leaves abaxially persistently tomentose, margin coarsely serrate 113a. var. *paniculatus*
- 1b. Leaves abaxially tomentose when young, glabrescent in age, margin sharply serrate 113b. var. *glabrescens*

113a. *Rubus paniculatus* var. *paniculatus*

圆锥悬钩子(原变种) yuan zhui xuan gou zi (yuan bian zhong)

Rubus paniculatus f. *tiliaceus* (Smith) H. Hara; *R. tiliaceus* Smith.

Leaves abaxially persistently tomentose, margin coarsely serrate.

Mixed forests on slopes, ravines, stream sides; 1500–3200 m. Xizang, Yunnan [Bhutan, N India, Kashmir, Nepal, Sikkim].

113b. *Rubus paniculatus* var. *glabrescens* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 456. 1982.

脱毛圆锥悬钩子 tuo mao yuan zhui xuan gou zi

Leaves abaxially tomentose when young, glabrescent in age, margin sharply serrate.

- Forests; ca. 1700 m. NW Yunnan.

114. *Rubus neoviburnifolius* L. T. Lu & Boufford, **nom. nov.**

莢蒾叶悬钩子 jia mi ye xuan gou zi

Replaced synonym: *Rubus viburnifolius* Focke, Biblioth. Bot. 17(Heft 72): 75. 1910, not Franchet (1895), nor (Greene) Rydberg (1913); *R. evadens* Focke; *R. nanopetalus* Cardot; *R. viburnifolius* Focke var. *apetalus* Y. Gu & W. L. Li.

Shrubs climbing. Branches brownish to dark brown, terete, robust, gray to yellowish gray tomentose, with sparse, somewhat curved prickles. Leaves simple; petiole 1–2.5 cm, gray to grayish yellow tomentose-villous, with sparse, minute prickles; stipules caducous, lanceolate, 5–7 mm, deeply lobed, lobes linear, villous; blade broadly ovate to suborbicular, rarely narrowly ovate, 6–11 × 5–9.5 cm, lateral veins usually 5 pairs, abaxially gray to yellowish gray tomentose and villous along veins, adaxially pilose, more densely so along veins, base truncate to subcordate, margin undulate or inconspicuously 3-lobed, irregularly abruptly pointed-serrate, apex acute or shortly pointed. Inflorescences terminal or axillary, terminal ones cymose panicles, short, 7–14 cm, compact, many flowered, axillary ones subracemes, shorter, sometimes flowers few in clusters; rachis and pedicels densely gray to grayish yellow tomentose-villous; bracts unequal in length, those in basal part of inflorescence 5–8 mm, parted nearly to base; lobes linear or lanceolate, villous, those in apical part of inflorescence smaller, linear-lanceolate, 3-divided. Pedicel 0.8–1.5 cm. Flowers 8–10 mm in diam. Calyx yellowish tomentose and villous; sepals ovate-lanceolate, 5–8 × 3–5 mm, often undivided. Petals white, spatulate or elliptic, smaller than sepals, glabrous, base clawed. Stamens many, somewhat longer than petals; filaments linear. Pistils fewer than stamens, slightly longer than or ca. as long as stamens, glabrous. Aggregate fruit red, 6–8 mm in diam., glabrous, with few drupelets; pyrenes rugose. Fl. late spring–summer, fr. summer–autumn.

- Dry slopes, mixed forests; 1200–3000 m. S Yunnan.

115. *Rubus nagasawanus* Koidzumi, Acta Phytotax. Geobot. 8: 108. 1939.

高砂悬钩子 gao sha xuan gou zi

Rubus alceifolius Poir. var. *emigratus* Koidzumi (1913), not Focke (1904); *R. formosensis* Matsumura (1901), not Kuntze (1879); *R. polyanthus* H. L. Li; *R. tephrodes* Hance var. *setosissimus* Koidzumi (1939), not Handel-Mazzetti (1933).

Shrubs scrambling. Branches robust, grayish soft hairy and tomentose, with reddish glandular hairs 2–3 mm and few prickles; prickles ca. 2 mm, curved, base dilated; petiole 1–2 cm, tomentose, with minute prickles and glandular hairs; stipules free, 8–10 mm, margin lacerate to pinnatifid; lobes linear, with soft hairs and intermixed sparse, glandular hairs; blade suborbicular or broadly ovate, 4–6 × 4.5–7 cm, 5-veined, veins prominent abaxially, slightly impressed adaxially, abaxially gray or grayish yellow tomentose, adaxially dark and slightly hirsute especially along veins, base broadly to deeply cordate, margin 5-lobed, unevenly sharply serrate, apex acute or obtuse. Inflorescences terminal, cymose panicles, much branched, 8–15(–20) cm, many flowered; rachis and pedicels densely tomentose; bracts 5–8 mm, margin lacerate to pinnatifid; lobes linear to linear-lanceolate, puberulous, with few glandular hairs. Pedicel 1–2 cm. Flowers ca. 1 cm in diam. Calyx yellowish tomentose, with sparse, intermixed glandular hairs; tube

cupular, ca. 3 mm, unarmed; sepals triangular-ovate, 6–7 × 3–4 mm, apex acute to acuminate, usually undivided. Petals white, spatulate-orbicular to obovate, 3–4 × 2–3 mm, pubescent, base shortly clawed. Stamens many; filaments 3–4 mm, glabrous. Pistils 4–5 mm, glabrous. Aggregate fruit subglobose, 7–9 mm in diam., glabrous, enclosed in calyx; pyrenes 2–3 mm, slightly foveolate. Fl. summer, fr. autumn. $2n = 28^*$.

Thickets; 700–2500 m. E Taiwan [Indonesia (Java, Sumatra), Philippines].

116. *Rubus alceifolius* Poirlet in Lamarck, Encycl. Meth. 6: 247. 1804.

粗叶悬钩子 *cu ye xuan gou zi*

Rubus alceifolius var. *diversilobatus* (Merrill & Chun) T. T. Yu & L. T. Lu; *R. bullatifolius* Merrill; *R. fimbriiferus* Focke; *R. fimbriiferus* var. *diversilobatus* Merrill & Chun; *R. gilvus* Focke; *R. hainanensis* Focke; *R. laciniatostipulatus* Hayata ex Koidzumi; *R. monguillonii* H. Léveillé & Vaniot; *R. multibracteatus* H. Léveillé & Vaniot var. *demangei* H. Léveillé.

Shrubs scandent, to 5 m tall, with arching or climbing branches. Branchlets brown or reddish brown, densely spreading straight tomentose-villous, with sparse, recurved prickles to 5 mm; petiole 3–4.5 cm, yellowish gray to rust colored tomentose-villous, with sparse, minute prickles; stipules oblong to orbicular, 1–1.5(–2) cm, margin deeply digitately or pinnately divided, lobes linear or linear-lanceolate, hairy; blade sub-orbicular or broadly ovate, 6–16 × 5–14 cm, usually palmately 5-veined, thinly leathery, abaxially yellowish gray to rust colored tomentose, villous along veins, adaxially sparsely villous and distinctly bullate between veins, base cordate with basal incision to 3 or 4 cm deep, margin shallowly 5–7-lobed; lobes apically obtuse or acute, unevenly coarsely serrate. Inflorescences terminal, narrow cymose panicles or subracemes, 6–11 cm, sometimes flowers few in axillary clusters, rarely flowers solitary; rachis and pedicels tomentose-villous, with minute recurved prickles; bracts 1–1.4 cm, pinnatifid to pinnatipartite; lobes linear or lanceolate. Pedicel 5–10(–15) mm. Flowers 1–1.6 cm in diam. Calyx abaxially tomentose-villous; tube cupular; sepals broadly ovate to triangular-ovate, 6–9 × 5–8 mm, apex and margin of outer sepals palmately or pinnately lacinate, rarely undivided, inner sepals entire, shortly pointed, abaxially tomentose, intermixed villous. Petals white, suborbicular to broadly obovate, 5–9 × 4–9 mm, base clawed. Stamens many, shorter than petals; filaments to 5 mm, broad, complanate; anthers with few long hairs. Pistils numerous, longer than stamens; ovary and style glabrous. Aggregate fruit red, subglobose, to 1.8 cm in diam.; pyrenes rugose. Fl. Jul–Sep. fr. Oct–Nov. $2n = 42^*$.

Sunny slopes, mixed forests in valleys, boggy thickets, roadsides, rock crevices; 500–2000 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hunan, Jiangsu, Jiangxi, Taiwan, Yunnan, Zhejiang [Cambodia, Indonesia, Japan, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam].

The fruit are juicy and edible. The roots and leaves are used medicinally.

117. *Rubus platysepalus* Handel-Mazzetti, Symb. Sin. 7: 493. 1933.

武冈悬钩子 *wu gang xuan gou zi*

Rubus platysepalus var. *gracilior* Handel-Mazzetti.

Shrubs, to 2 m tall. Branchlets brown or reddish brown, terete, yellowish villous, with sparse, broad-based, recurved prickles. Leaves simple; petiole 3–4.5 cm, yellowish villous, with sparse, recurved minute prickles; stipules caducous, free, to 1 cm, villous, pinnatipartite or palmatipartite nearly to base, lobes linear or lanceolate; blade broadly ovate, 6–10 × 5–8.5 cm, palmately 5-veined, papery, abaxially yellowish gray tomentose, villous along brown to rust colored veins, with sparse, minute prickles along midvein, adaxially appressed strigose-pilose, base deeply cordate, margin 5–7-lobed; lobes apically acute or obtuse, terminal lobe longer than lateral lobes, irregularly coarsely serrate. Inflorescences terminal or axillary, terminal ones cymose panicles, 10–20 cm or more, loosely flowered; axillary inflorescences subracemes, shorter; rachis and pedicels yellowish villous, with sparse, curved minute prickles; bracts 7–9 mm, palmatipartite or pinnatipartite; lobes linear or linear-lanceolate, villous. Pedicel 5–8 mm. Flowers 8–10 mm in diam. Calyx abaxially yellowish villous; tube 4–5 mm; sepals broadly ovate or broadly triangular-ovate, 5–8 × 3–5 mm, apex shortly acuminate, outer sepals apically lacinate, inner sepals entire, abaxially with tomentose margin. Petals white, broadly obovate, 4–5.5 mm and ca. as broad, pubescent, base clawed, apex obtuse. Stamens many, slightly shorter than or nearly as long as petals; filaments linear, dilated toward base, glabrous or with few long hairs at apex of anthers. Pistils numerous, longer than stamens; ovary whitish pubescent; styles glabrous. Fruit unknown. Fl. Jun–Aug.

• Thickets, roadsides; low elevations. Guangxi, W Hunan (Wu-gang Xian).

118. *Rubus arachnoideus* Y. C. Liu & F. Y. Lu, Quart. J. Chin. Forest. 9: 129. 1976.

灰叶悬钩子 *hui ye xuan gou zi*

Rubus nagasawanus Koidzumi var. *arachnoideus* (Y. C. Liu & F. Y. Lu) S. S. Ying.

Subshrubs. Branchlets densely grayish appressed tomentose, with few small prickles. Leaves simple; petiole 1.5–2 cm, grayish tomentose; stipules 4–6 mm, much lacerate, grayish tomentose; blade ovate to broadly ovate, 5–7 × 4–6 cm, palmately 5-veined, veins raised abaxially, slightly impressed adaxially, abaxially densely grayish appressed tomentose, adaxially dark brownish, glabrous or slightly pubescent along veins, base broadly cordate, margin unevenly dentate, 3–5-lobed, terminal lobe 3–4 × 3–3.5 cm, lateral lobes smaller, apex obtuse or acute. Inflorescences terminal, cymose panicles, much branched, to 17 × 13 cm; rachis and pedicels grayish tomentose. Pedicel 0.8–2 cm, bracts linear or linear-lanceolate, slightly lacerate, grayish tomentose. Calyx cupular, 5–6 mm in diam., abaxially grayish tomentose; sepals triangular or triangular-ovate, 4–6 × 2–3 mm, apex acute. Petals white, broadly obovate or obovate-spatulate, 4–5 × 3–4 mm, both surfaces sparsely pubescent, base shortly clawed; torus densely villous. Stamens many; filaments free or connate at base, ca. 3 mm, glabrous. Pistils glabrous; styles 3–4 mm. Fruit not seen. Fl. Jul–Sep(–Dec).

• Broad-leaved forests; (300–)1500–1800 m. E Taiwan.

No specimens have been seen by the present authors. Specimens under this name at HAST have been annotated by Naohiro Naruhashi as *Rubus tephrodes* (Ching-I Peng, pers. comm.).

119. *Rubus yuliensis* Y. C. Liu & F. Y. Lu, Quart. J. Chin. Forest. 9(2): 135. 1976.

玉里悬钩子 *yu li xuan gou zi*

Shrubs. Branchlets pilose, densely prickly; prickles to 4 mm, slender, somewhat curved. Leaves simple; petiole 5–8 cm, densely hirsute and prickly; stipules ovate to ovate-oblong, 6–12 mm, pinnatifid or deeply lacinate; lobes linear, 7–8 mm, abaxially sparsely hirsute, adaxially glabrous; blade broadly cordate-orbicular, 5–8 × 4.5–9 cm, thinly leathery, 5-veined, veins prominent abaxially, slightly impressed to flat adaxially, abaxially yellowish brown, tomentose, with intermixed long hairs, adaxially nearly glabrous except hirsute along veins, base broadly cordate, margin unevenly serrate, shallowly 5-lobed, terminal lobe 1.7–3.5 × 1.5–3.5 cm, longer than lateral lobes, apex obtuse to shortly acute. Inflorescences subracemes, short, 3–6-flowered; rachis and pedicels densely hirsute, prickly; bracts orbicular-ovate, lacinate, abaxially puberulent, adaxially glabrous. Pedicel ca. 5 mm. Calyx cupular, abaxially densely tomentose and hirsute; sepals long ovate, 5–8 mm, margin entire, apex with 1–3 bristles. Petals orbicular, ca. 5 mm, glabrous. Stamens many; filaments glabrous. Pistils glabrous, styles ca. 7 mm. Fruit unknown. Fl. Jun–Jul(–Oct).

- 1000–1400 m. E Taiwan.

No specimens have been seen by the present authors. Specimens under this name at HAST have been annotated by Naohiro Naruhashi as *Rubus rufus* (Ching-I Peng, pers. comm.).

120. *Rubus chrysobotrys* Handel-Mazzetti, Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl. 60: 183. 1923.

黄穗悬钩子 *huang sui xuan gou zi*

Shrubs 2–3 m tall. Branchlets brownish to dark brown, terete, densely yellowish villous, with sparse, curved small prickles. Leaves simple; petiole 3.5–7 cm, densely yellowish villous, with sparse, curved minute prickles; stipules caducous, free, brown, 1–1.7 cm, villous, pinnatifid nearly to midvein, lobes linear; blade broadly ovate, 7–15 × 6–12 cm, palmately 5-veined, lateral veins 2 or 3 pairs, abaxially densely yellow tomentose, with intermixed long hairs along veins, glabrescent, with only sparse long hairs along veins in age, adaxially villous, base cordate, margin undivided, 5-divided, or somewhat undulate, irregularly coarsely sharply doubly serrate, apex abruptly long pointed or shortly acuminate. Inflorescences terminal or axillary, narrow cymose panicles or subracemes, terminal ones 12–26 cm, axillary ones shorter; rachis and pedicels densely yellow villous, with sparse, minute prickles; bracts 0.8–1.5(–2.3) cm, deeply lobed; lobes lanceolate or linear-lanceolate, villous. Pedicel 5–10 mm. Flowers 1–1.5 cm in diam. Calyx abaxially densely yellow villous, intermixed tomentose; sepals often erect in fruit, lanceolate, 1–1.2 cm × 3–6 mm, apex shortly caudate, outer sepals apically shallowly 2- or 3-lacinate. Petals white, suborbicular or obovate, 8–11 × 4–6 mm, base long clawed. Stamens many, slightly shorter than petals; filaments slightly

broad at base. Pistils numerous, longer than stamens, glabrous. Aggregate fruit semiglobose, 8–10 mm in diam., glabrous, enclosed in calyx; pyrenes rugulose. Fl. Jun–Jul, fr. Aug–Sep.

- Mixed forests on slopes, ravines, mountainous regions; 1700–2500 m. W Yunnan.

1a. Leaves undivided or sometimes undulate; bracts 8–15 mm 120a. var. *chrysobotrys*

1b. Leaves often undulately 5-divided; bracts to 23 mm 120b. var. *lobophyllus*

120a. *Rubus chrysobotrys* var. *chrysobotrys*

黄穗悬钩子(原变种) *huang sui xuan gou zi* (yuan bian zhong)

Leaves undivided or sometimes undulate. Bracts 0.8–1.5 cm.

- Mixed forests on slopes, ravines; 1700–2500 m. NW Yunnan.

120b. *Rubus chrysobotrys* var. *lobophyllus* Handel-Mazzetti, Symb. Sin. 7: 495. 1933.

裂叶黄穗悬钩子 *lie ye huang sui xuan gou zi*

Leaves often undulately 5-divided. Bracts to 2.3 cm.

- Mountainous regions; 2000–2400 m. SW Yunnan.

121. *Rubus rufus* Focke, Biblioth. Bot. 17(Heft 72): 108. 1910.

棕红悬钩子 *zong hong xuan gou zi*

Shrubs scandent, to 3 m tall. Branchlets brownish to reddish brown, cylindrical, with soft hairs, brownish bristles, and sparse, needle-like prickles. Leaves simple; petiole 7–11 cm, brownish, with soft hairs, brownish soft bristles, and slightly needle-like prickles; stipules 1.5–2 cm, palmately 5-veined, pectinately or palmately lobed; lobes pinnately divided again into linear or linear-lanceolate lobules, soft hairy, bristly; blade suborbicular, 0.9–1.5 cm in diam., abaxially brownish tomentose, with intermixed reddish brown long hairs and sparse, needle-like prickles along veins, adaxially villous only along veins, base cordate, margin 5-lobed; lobes triangular-lanceolate or oblong-lanceolate to narrowly elliptic-lanceolate, apex acute, terminal lobe longest, lobes near base shorter, triangular, irregularly sharply serrate. Inflorescences terminal, narrow panicles or subracemes, 6–8(–10) cm, few flowered, or flowers in clusters in leaf axils; rachis and pedicels with dense soft hairs, brownish bristles, and sparse, needle-like prickles; bracts to 1.5 cm, palmatifid; lobes linear or linear-lanceolate, soft hairy, bristly. Pedicel 0.7–1(–2.5) cm. Flowers ca. 1 cm in diam. or more. Calyx abaxially brownish tomentose and bristly; tube shallowly cupular; sepals erect in fruit, broadly ovate or ovate-lanceolate, 0.8–1.2 cm × 5–7 mm, apex caudate, outer sepals apically shallowly lacinate, inner sepals entire. Petals white, broadly elliptic or suborbicular, 5–7 mm in diam., glabrous, base shortly clawed, apex somewhat undulate or erose. Stamens many, longer than or nearly as long as petals; filaments linear or with slightly broadened bases. Pistils 30–40, longer than stamens; style and ovary glabrous. Aggregate fruit orange-red, with few drupelets, glabrous, enclosed in calyx; pyrenes distinctly rugulose. Fl. Jun–Aug, fr. Sep–Oct. $2n = 28^*$.

Forests, thickets on slopes, valleys, ravines, near water courses; 900–2500 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan, Zhejiang [Thailand, Vietnam].

- 1a. Leaves deeply divided, lobes oblong-lanceolate or narrowly elliptic-lanceolate 121c. var. *palmatifidus*
- 1b. Leaves shallowly 5-divided, lobes triangular-lanceolate or triangular.
 - 2a. Pedicel 0.7–1 cm; flowers ca. 1 cm in diam. 121a. var. *rufus*
 - 2b. Pedicel 1.5–2.5 cm; flowers more than 1 cm in diam. 121b. var. *longipedicellatus*

121a. *Rubus rufus* var. *rufus*

棕红悬钩子(原变种) zong hong xuan gou zi (yuan bian zhong)

Leaves shallowly 5-divided, lobes triangular-lanceolate or triangular. Pedicel 7–10 mm. Flowers ca. 1 cm in diam.

Dense forests, thickets on slopes, valleys; 1000–2500 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Yunnan [Thailand, Vietnam].

121b. *Rubus rufus* var. *longipedicellatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 457. 1982.

长梗棕红悬钩子 chang geng zong hong xuan gou zi

Leaves shallowly 5-divided, lobes triangular-lanceolate or triangular. Pedicel 1.5–2.5 cm. Flowers more than 1 cm in diam.

- Forests; below 2800 m. Yunnan.

121c. *Rubus rufus* var. *palmatifidus* Cardot, Notul. Syst. (Paris) 3: 304. 1914.

掌裂棕红悬钩子 zhang lie zong hong xuan gou zi

Leaves deeply lobed; lobes oblong-lanceolate or narrowly elliptic-lanceolate. Pedicel 7–10 mm. Flowers more than 1 cm in diam.

- Ravines in dense forests, near water courses; 900–1100 m. S Guizhou.

122. *Rubus lasiotrichos* Focke, Biblioth. Bot. 17(Heft 72): 109. 1910.

多毛悬钩子 duo mao xuan gou zi

Shrubs scandent. Branchlets brownish to reddish brown, terete, with soft hairs, bristles, and curved prickles. Leaves simple; petiole 6–8(–10) cm, with soft hairs, brownish bristles, and sparse, curved prickles; stipules caducous, free, brown, 1–1.2 × 0.7–1 cm, apex pectinately lobed, lobes lanceolate, soft hairy, bristly; blade suborbicular, 9–14 cm in diam., palmately 5-veined, abaxially densely brownish tomentose, with intermixed long hairs and sparse, curved small prickles along veins, adaxially villous along veins, base cordate, margin 5-lobed; lobes broadly triangular to triangular-lanceolate, terminal lobe larger, apex acute to acuminate, irregularly sharply serrate. Inflorescences few flowered, clusters in leaf axils, or terminal and short subracemes, to 6–9 cm; rachis and pedicels with dense soft hairs,

brownish bristles, and sparse, minute prickles; bracts to 1.2 cm, apex lobed; lobes lanceolate, soft hairy, bristly. Pedicel 5–10 mm. Flowers 1.2–1.7 cm in diam. Calyx abaxially densely brownish tomentose and bristly; sepals narrowly lanceolate to lanceolate or ovate-lanceolate, 6–10 × 4–7 mm, apex acute or shortly acuminate to caudate, outer sepals often lacinate above middle; lobes linear, inner sepals entire. Petals white, suborbicular or broadly elliptic, slightly shorter than or nearly as long as sepals, glabrous, base shortly clawed. Stamens many, somewhat shorter than petals; filaments linear. Pistils slightly longer than stamens; style and ovary glabrous. Aggregate fruit red, subglobose, glabrous, with many drupelets, enclosed in calyx; pyrenes prominently rugulose. Fl. Jul–Aug, fr. Sep–Oct.

Dry slopes, rocky mountains, sparse forests, thickets; 1800–2700 m. S Guizhou, Sichuan, Yunnan [Thailand, Vietnam].

- 1a. Sepals lanceolate to ovate-lanceolate, apex acute to shortly acuminate 122a. var. *lasiotrichos*
- 1b. Sepals narrowly lanceolate, apex acuminate to caudate 122b. var. *blinii*

122a. *Rubus lasiotrichos* var. *lasiotrichos*

多毛悬钩子(原变种) duo mao xuan gou zi (yuan bian zhong)

Rubus rufus Focke var. *hederifolius* Cardot; *R. hederifolius* (Cardot) Thuan.

Sepals lanceolate to ovate-lanceolate, apex acute to shortly acuminate.

Dry slopes, rocky mountains, sparse forests; 1800–2700 m. Sichuan, Yunnan [Thailand, Vietnam].

122b. *Rubus lasiotrichos* var. *blinii* (H. Léveillé) L. T. Lu, Acta Phytotax. Sin. 38: 281. 2000.

狭萼多毛悬钩子 xia e duo mao xuan gou zi

Rubus blinii H. Léveillé, Repert. Spec. Nov. Regni Veg. 7: 258. 1909.

Sepals narrowly lanceolate, apex acuminate to caudate.

- Thickets. S Guizhou.

123. *Rubus pluribracteatus* L. T. Lu & Boufford, **nom. nov.**

大乌泡 da wu pao

Replaced synonym: *Rubus multibracteatus* H. Léveillé & Vaniot, Bull. Soc. Étud. Sci. Angers 11: 99. 1902, not Boulay & Pierret ex Rouy & Camus (1900).

Shrubs to 3 m tall. Branchlets brownish to purplish brown, terete, stout, yellow tomentose and with sparse, curved small prickles. Leaves simple; petiole 3–6 cm, densely yellow tomentose, with sparse, minute prickles; stipules broadly elliptic to broadly obovate, 1–1.8 cm, apex pectinately lobed; lobes undivided, lanceolate or linear-lanceolate, tomentose-villous; blade suborbicular, 7–16 cm in diam., 5-veined, veins prominent abaxially, abaxially densely yellowish gray or yellow tomentose, villous along veins, adaxially soft hairy, densely bullate, base cordate, margin 7–9-lobed, terminal lobe obtuse or subtruncate, inconspicuously 3-lobed, unevenly coarsely serrate, apex ob-

tuse or acute. Inflorescences terminal and axillary, terminal ones narrow cymose panicles or subracemes, 7–14 cm, axillary ones racemes or flowers few in clusters in leaf axils; rachis and pedicels densely yellow or yellowish white sericeous-villous; bracts similar to stipules in shape, 1–1.5 cm, palmately lacinate; lobes lanceolate. Pedicel 1–1.5 cm, rarely longer. Flowers 1.5–2.5 cm in diam. Calyx abaxially densely yellow or yellowish white sericeous-villous; tube broadly pelviform; sepals erect in fruit, broadly ovate, 0.9–1.5(–2.4) cm × 4–7 mm, margin sometimes slightly tomentose, apex acuminate; outer sepals larger, palmately to pinnately divided, rarely undivided, inner sepals narrower, not or occasionally lobed. Petals white, obovate or spatulate, 0.8–1.4 cm × 5–8 mm, glabrous, base clawed. Stamens many; filaments broad, complanate; anthers with few long hairs. Pistils numerous, longer than stamens; ovary glabrous. Aggregate fruit red, globose, to 2 cm in diam.; pyrenes prominently rugose. Fl. Mar–Jun, fr. Aug–Sep.

Slopes, river valleys, roadsides, forests, forest margins; 300–2700 m. Guangdong, Guangxi, Guizhou, Yunnan [Cambodia, Laos, Thailand, Vietnam].

- 1a. Sepals to 1.5 cm, palmately to pinnately divided, lobes usually undivided 123a. var. *pluribracteatus*
- 1b. Sepals to 2.4 cm, palmatipartite above middle, lanceolate lobes divided again 123b. var. *lobatisepalus*

123a. *Rubus pluribracteatus* var. *pluribracteatus*

大乌泡(原变种) da wu pao (yuan bian zhong)

Rubus andropogon H. Léveillé; *R. clincephalus* Focke; *R. major* Focke; *R. mallodes* Focke.

Sepals to 1.5 cm, palmately to pinnately lobed; lobes usually undivided.

Slopes, river valleys, roadsides, forests; 300–2700 m. Guangdong, Guangxi, Guizhou, Yunnan [Cambodia, Laos, Thailand, Vietnam].

123b. *Rubus pluribracteatus* var. *lobatisepalus* (T. T. Yu & L. T. Lu) L. T. Lu & Boufford, **comb. nov.**

裂萼大乌泡 lie e da wu pao

Basionym: *Rubus multibracteatus* H. Léveillé & Vaniot var. *lobatisepalus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 458. 1982.

Sepals to 2.4 cm, palmatipartite above middle; lobes lanceolate, divided again.

- Forest margins; below 2500 m. W Yunnan.

124. *Rubus reticulatus* Wallich ex J. D. Hooker, Fl. Brit. India 2: 331. 1878.

网脉悬钩子 wang mai xuan gou zi

Shrubs scandent, to 1 cm tall. Branchlets brown, gray to yellowish gray tomentose, with soft hairs and sparse, curved minute prickles, rarely unarmed. Leaves simple; petiole 4–9 cm, gray to yellowish gray tomentose, with soft hairs and sparse, minute prickles; stipules subflabellate, pectinately lob-

ed; lobes divided again, with lanceolate lobules, tomentose, soft hairy; blade broadly ovate to suborbicular, 12–20 × 10–18 cm, palmately 5-veined, lateral veins 5–7 pairs, prominent abaxially, abaxially densely yellowish gray tomentose, with long hairs along veins, adaxially pilose, densely so along veins, base cordate, margin distinctly 5-lobed, lobes apically acute or ± obtuse, unevenly densely serrate. Inflorescences terminal and axillary, terminal ones narrow cymose panicles or subracemes, axillary ones subracemes or flowers in clusters in leaf axils; rachis and pedicels densely gray or yellowish brown tomentose and villous; proximal bracts subflabellate, those on pedicel elliptic, margin entire or apically divided, thinly tomentose, soft hairy. Pedicel 1.5–3(–4) cm. Flowers 1–1.5 cm in diam. Calyx densely tomentose and villous; sepals broadly ovate, 4.5–5 mm, about as broad as long, margin entire or slightly lobed, apex acuminate. Petals white or yellowish white, obovate to suborbicular, ca. 5 mm, about as broad as long. Stamens many, glabrous; filaments linear. Pistils numerous; style and ovary glabrous. Aggregate fruit red, globose, 1–1.5 cm in diam. Fl. Jul–Aug, fr. Sep–Oct.

Broad-leaved evergreen forests in montane valleys, ravines, thickets on slopes; 600–2100 m. SE Xizang [NW India, Nepal, Sikkim].

125. *Rubus setchuenensis* Bureau & Franchet, J. Bot. (Morot) 5: 46. 1891.

川莓 chuan mei

Rubus cavaleriei H. Léveillé & Vaniot; *R. clemens* Focke; *R. lyi* H. Léveillé; *R. omeiensis* Rolfe; *R. pacatus* Focke; *R. pacatus* var. *alypus* Focke; *R. setchuenensis* var. *omeiensis* (Rolfe) Handel-Mazzetti; *R. singulifolius* Focke.

Shrubs 2–5 m tall. Branchlets yellowish brown when young, brown or reddish brown in age, terete, densely yellowish tomentose-villous, gradually glabrescent, unarmed. Leaves simple; petiole 5–7 cm, yellowish tomentose-villous, often unarmed; stipules caducous, free, ovate or ovate-lanceolate, rarely narrowly ovate, 7–11 mm and nearly as broad, tomentose-villous, apex palmately lacinate; blade suborbicular or broadly ovate, 7–15 cm in diam., palmately 5-veined, lateral veins 2 or 3 pairs, raised abaxially, abaxially densely gray tomentose, sometimes hairs gradually deciduous, adaxially scabrous, glabrous or soft hairy along veins, base cordate, margin 5–7-lobed; lobes shallowly divided again, apex obtuse, rarely acute, unevenly shallowly obtusely dentate. Inflorescences terminal or axillary, narrow cymose panicles, 8–14 cm, to 20 cm in fruit, axillary inflorescences smaller, sometimes flowers few in clusters in leaf axils; rachis and pedicels densely yellowish tomentose-villous; bracts similar to stipules in shape, 5–9 × 3–5 mm, tomentose-villous, apex palmate-lacinate. Pedicel ca. 1 cm. Flowers 1–1.5 cm in diam. Calyx abaxially yellowish tomentose, intermixed soft hairy; sepals erect in fruit, rarely reflexed, ovate-lanceolate, margin entire or outer sepals shallowly lacinate apically, apex caudate. Petals purplish red, obovate or suborbicular, 4–6 mm in diam., much shorter than sepals, glabrous, base clawed. Stamens many, shorter than petals; filaments linear, glabrous. Pistils longer than stamens; style and ovary glabrous. Aggregate fruit black, semiglobose, ca. 1 cm in diam., glabrous, often enclosed in persistent calyx; pyrenes small, smooth. Fl. Jul–Aug, fr. Sep–Oct. 2n = 28*.

• Slopes, roadsides, forest margins, thickets; 500–3000 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan.

This species often forms dense, impenetrable thickets on deforested slopes.

126. *Rubus faberi* Focke, *Biblioth. Bot.* 17(Heft 72): 53. 1910.

峨眉悬钩子 *e mei xuan gou zi*

Shrubs. Branchlets brown to purplish brown, terete, densely tomentose-villous, usually unarmed. Leaves simple; petiole 4–9 cm, tomentose, unarmed or with few small prickles; stipules caducous, free; blade broadly ovate, rarely suborbicular, 10–18 × 8–17 cm, palmately 5-veined, lateral veins 3 or 4 pairs, prominent abaxially, leathery, abaxially densely yellowish tomentose, soft hairy along veins, adaxially scabrous, glabrous, base cordate, margin 7–11-lobed; lobes triangular, margin irregularly sharply serrate, apex acute. Inflorescences terminal and axillary, cymose panicles, axillary ones smaller; rachis and pedicels densely yellowish tomentose-villous; bracts caducous, narrowly obovate, tomentose-villous, palmatipartite above middle, lobes lanceolate. Pedicel ca. 1 cm. Flowers 1–1.5 cm in diam. Calyx abaxially densely yellowish tomentose and soft hairy; sepals erect after anthesis, broadly ovate, apex acute, margins of outer sepals often pinnately lacinate; lobes linear. Petals white, narrowly obovate, slightly longer than or nearly as long as sepals, glabrous, base clawed. Stamens many; filaments broader toward base, glabrous. Pistils glabrous. Aggregate fruit red, subglobose, 0.8–1.2 cm in diam., glabrous, enclosed in persistent calyx; pyrenes conspicuously rugulose. Fl. Jun–Jul, fr. Aug–Sep.

• Mountains; low to medium elevations. W Sichuan.

127. *Rubus formosensis* Kuntze, *Meth. Sp.-Besch. Rubus*, 73. 1879.

台湾悬钩子 *tai wan xuan gou zi*

Rubus formosanus Maximowicz ex Focke; *R. nantoensis* Hayata; *R. randaiensis* Hayata; *R. rubibracteatus* F. P. Metcalf; *R. rugosissimus* Hayata.

Shrubs erect or somewhat scrambling. Branchlets terete, densely yellowish brown tomentose-villous, unarmed or with sparse, curved minute prickles. Leaves simple; petiole 3–5 mm, densely yellowish brown tomentose villous, usually unarmed; stipules free, brownish, broadly ovate to oblong, 1–1.5(–2) × 0.6–1(–1.5) cm, margin entire to pinnatipartite or palmatipartite; lobes linear or linear-lanceolate, slightly tomentose-villous; blade broadly ovate or suborbicular, 6–12 × 7–13 cm, 5-veined, reticulate veins raised and prominent abaxially, impressed adaxially, abaxially yellowish gray tomentose, soft hairy along veins, adaxially rugose, soft hairy when young, base cordate, margin 3–5-lobed; lobes ovate-triangular, terminal one largest, margin unevenly coarsely serrate, apex acute, rarely obtuse. Inflorescences terminal, short subracemes, 3–5 cm, several flowered, or flowers solitary in leaf axils; rachis and pedicels densely yellow brown tomentose-villous; bracts reddish brown, broadly ovate to oblong, 8–11(–15) × 6–9(–12) mm, often palmatipartite or pinnatipartite; lobes linear or linear-lanceolate, slightly hairy. Pedicel 3–4 mm, rarely longer. Flowers ca. 1.5 cm in diam. or slightly longer. Calyx abaxially densely yellow-

ish brown villous and tomentose; tube cupular; sepals triangular to ovate, 6–9 × 4–6 mm, margin entire or outer sepals apically lobed or with few teeth, apex acute to shortly acuminate. Petals white, broadly ovate or suborbicular, 5–8 × 4–7 mm, abaxially glabrous or with few hairs, base clawed, margin sometimes erose. Stamens many, shorter than sepals; filaments 3–4 mm, linear, with few long hairs at apex of anthers. Pistils shorter than stamens; ovary with few hairs. Aggregate fruit red, globose or broadly ovoid, 8–10 mm in diam., glabrous. Fl. Jun–Jul, fr. Aug–Sep. $2n = 28^*$.

• Dry places, rocks, stream sides, sparse forests in valleys; low to high elevations. Guangdong, Guangxi, Taiwan.

128. *Rubus pinnatisepalus* Hemsley, *J. Linn. Soc., Bot.* 29. 305. 1892.

羽萼悬钩子 *yu e xuan gou zi*

Shrubs lianoid, to 2 m tall, stoloniferous. Branchlets brown to purplish brown, tomentose-villous, with curved minute prickles, sometimes with glandular hairs. Leaves simple; petiole 3–7 cm, tomentose-villous, with minute prickles; stipules broadly flabellate, 1–1.5(–2) cm, membranous, pectinately or palmately parted nearly to base; lobes lanceolate or linear, villous; blade orbicular to broadly ovate, 7–14 cm in diam., 5-veined, veins distinctly raised abaxially, slightly impressed adaxially, papery, abaxially densely gray tomentose and villous, with minute needle-like prickles along veins, adaxially prominently rugose, sparsely villous, base cordate, margin 5–7-lobed; lobes irregularly coarsely serrate to doubly serrate, apex obtuse or acute. Inflorescences terminal and axillary, short subracemes, 3–5 cm, 1- or few flowered, or flowers several in clusters in leaf axils; rachis and pedicels gray or yellowish tomentose-villous; bracts narrower than stipules, 1–1.5 cm, villous, deeply divided similar to stipules; lobes linear to lanceolate. Pedicel 7–10(–15) mm. Flowers ca. 1.5 cm in diam. Calyx gray or yellowish tomentose and villous; sepals narrowly ovate or ovate-lanceolate, unequal in length, longer sepals to 1.5 cm, shorter sepals 6–8 mm, apex acuminate; outer sepals pinnatipartite, lobes lanceolate, inner sepals entire, occasionally with minute glandular hairs. Petals white, broadly obovate or suborbicular, 5–7 mm in diam., shorter than sepals, base broadly clawed. Stamens many, shorter than petals; filaments broadened, flattened, soft hairy. Pistils many, slightly shorter than or nearly as long as stamens; ovary glabrous or slightly soft hairy. Aggregate fruit red, subglobose, ca. 1 cm in diam., glabrous. Fl. Jun–Jul, fr. Sep–Oct.

• Stream sides, roadsides, mixed forests, moist slopes, thickets in ravines; 1500–3100 m. Guizhou, Sichuan, Taiwan, Yunnan.

- 1a. Branchlets, petioles, and abaxial surface of calyx often without glandular hairs 128a. var. *pinnatisepalus*
- 1b. Branchlets, petioles, and abaxial surface of calyx with dense, unequal glandular hairs 128b. var. *glandulosus*

128a. *Rubus pinnatisepalus* var. *pinnatisepalus*

羽萼悬钩子(原变种) *yu e xuan gou zi* (*yuan bian zhong*)

Rubus acuaris Focke; *R. calycacanthus* H. Léveillé var.

buergerifolius H. Léveillé; *R. darrisii* H. Léveillé; *R. laciniato-stipulatus* Hayata ex Koidzumi.

Branchlets, petioles, and abaxial surface of calyx usually without glandular hairs.

• Stream sides, roadsides, mixed forests; below 3000 m. Guizhou, Sichuan, Taiwan, Yunnan.

128b. *Rubus pinnatisepalus* var. *glandulosus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 458. 1982.

密腺羽萼悬钩子 mi xian yu e xuan gou zi

Branchlets, petioles, and abaxial surface of calyx with dense, unequal long glandular hairs.

• Moist slopes, thickets in ravines; 1500–3100 m. Sichuan, Yunnan.

129. *Rubus humanensis* Handel-Mazzetti, Symb. Sin. 7: 497. 1933.

湖南悬钩子 hu nan xuan gou zi

Rubus buergeri Miquel var. *viridifolius* Handel-Mazzetti.

Shrubs climbing, 0.3–2 m tall. Branchlets slender, densely thinly pubescent, with sparse, curved minute prickles. Leaves simple; petiole 6–9 cm, densely thinly pubescent, with sparse, curved minute prickles; stipules free, brown, to 1 cm, stipules caducous or partly persistent, on sterile branchlets to 1.8 cm, nearly palmately or pinnately lobed, lobes linear, thinly pubescent; blade suborbicular or broadly ovate, 8–13 cm in diam., palmately 5-veined, lateral veins 2 or 3 pairs, raised abaxially, abaxially tomentose, intermixed thinly pubescent, hairs gradually deciduous, adaxially thinly pubescent when young, both surfaces subglabrescent, base deeply cordate, margin 5–7-lobed; lobes unevenly sharply serrate, apex acute, rarely obtuse. Inflorescences terminal, short subracemes, or several flowers in leaf axils; rachis and pedicels densely gray thinly pubescent; bracts similar to stipules, but smaller. Pedicel 5–10 mm. Flowers 7–10 mm in diam. Calyx abaxially densely gray to yellowish gray pubescent and tomentose; sepals erect after anthesis, broadly ovate, 6–8 × 4–7 mm, apex acute to shortly acuminate; outer sepals larger, pinnately laciniate, lobes linear-lanceolate, inner sepals smaller, usually undivided. Petals white, obovate, glabrous. Stamens shorter; filaments linear, glabrous. Pistils nearly as long as stamens, glabrous. Aggregate fruit yellowish red, semiglobose, glabrous, enclosed in persistent calyx; pyrenes rugulose. Fl. Jul–Aug, fr. Sep–Oct.

• Montane valleys, forests, grasslands; 300–2500 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Zhejiang.

Further study is required to determine the identity of *Rubus pseudoacer* Makino var. *flexuosus* Y. C. Liu & F. Y. Lu (Quart. J. Chin. Forest. 9(2): 133. 1976; *R. pseudoacer* subsp. *flexuosus* (T. S. Liu & F. Y. Lu) H. Ohashi & C. F. Hsieh), described from Taiwan, which might be synonymous with *R. humanensis*.

130. *Rubus buergeri* Miquel, Ann. Mus. Bot. Lugduno-Batavi 3: 36. 1867.

寒莓 han mei

Rubus bodinieri H. Léveillé & Vaniot; *R. buergeri* var. *pseudobuergeri* (Sasaki) Y. C. Liu & Yang; *R. pseudobuergeri* Sasaki; *R. shimadae* Hayata.

Shrubs erect to creeping. Stems often rooting at nodes; stolons to 2 m, brownish to reddish brown, stolons and flowering branchlets densely tomentose-villous, unarmed or with sparse, minute prickles. Leaves simple; petiole 4–9 cm, densely tomentose-villous, sometimes with sparse prickles; stipules caducous, free, 7–10 mm, palmatipartite or pinnatipartite, lobes linear or linear-lanceolate, soft hairy; blade ovate to suborbicular, 5–11 cm in diam., palmately 5-veined, lateral veins 2 or 3 pairs, prominently raised abaxially, abaxially densely tomentose, with soft hairs along veins when young, hairs deciduous in age, adaxially slightly soft hairy or only hairy along veins, base cordate, margin 5–7-lobed, lobes unevenly sharply serrate, apex obtuse, rarely acute. Inflorescences terminal or axillary, short subracemes, 4–6 cm, few flowered, or flowers several in clusters in leaf axils; rachis and pedicels densely tomentose-villous, with sparse prickles or not; bracts 7–9 mm, palmatipartite or pinnatipartite; lobes linear, villous. Pedicel 5–9 mm. Flowers 6–10 mm in diam. Calyx abaxially yellowish villous and tomentose; sepals erect in fruit, rarely reflexed, lanceolate or ovate-lanceolate, 5–9 × 3–5 mm, apex acuminate; outer sepals often lobed apically, inner sepals entire. Petals white, obovate, nearly as long as or slightly longer than sepals, glabrous, apex erose. Stamens many, shorter than petals; filaments linear, glabrous. Pistils glabrous, longer than stamens. Aggregate fruit purplish black, subglobose, 6–10 mm in diam., glabrous; pyrenes coarsely rugose. Fl. Jul–Aug, fr. Sep–Oct. $2n = 42^*$, 56^* .

Broad-leaved forests, mixed forests in mountainous regions; low to medium elevations. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Korea].

131. *Rubus penduliflorus* C. Y. Wu ex T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 458. 1982.

河口悬钩子 he kou xuan gou zi

Shrubs erect or climbing, to 3 m tall. Branchlets brown or reddish brown, yellow sericeous-villous, gradually glabrescent, with sparse, curved minute prickles. Leaves simple; petiole 2–3 cm, densely yellow sericeous-villous, with sparse, curved prickles; stipules caducous, broadly ovate to oblong, 6–8 mm, abaxially yellow sericeous-villous, laciniate, lobes lanceolate; blade narrowly ovate, rarely elliptic, 10–13 × 6–8 cm, lateral veins 8–10 pairs, raised abaxially, abaxially densely rusty yellow tomentose, with long silky rusty yellow hairs along veins, adaxially glabrous, base rounded, margin undivided, sparsely shallowly sharply serrate, apex acuminate. Inflorescences terminal and axillary, terminal ones cymose panicles, loose, 10–18 cm, many flowered, axillary ones subracemes, shorter; rachis and pedicels rusty yellow sericeous-villous, with sparse, minute prickles; bracts broadly ovate to oblong, 5–7 mm, yellow sericeous-villous, margin laciniate; lobes lanceolate. Pedicel not more than 1 cm. Flowers 1–1.4 cm in diam. Calyx abaxially densely rusty yellow sericeous-villous; sepals erect after anthesis, narrowly ovate to ovate-lanceolate, 6–8 × 4–5 mm, apex acute, outer sepals divided, inner sepals entire, margin tomentose. Petals white, suborbicular to broadly obovate, shorter than

sepals, base shortly clawed. Stamens many; filaments linear; anthers villous. Pistils numerous, longer than stamens, glabrous. Fruit unknown. Fl. Jun–Jul.

• Slopes, sunny valleys, roadsides, thickets, waste places; low elevations. S Yunnan.

132. *Rubus malipoensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 459. 1982.

麻栗坡悬钩子 ma li po xuan gou zi

Shrubs to 2 m tall. Branchlets dark brown to purplish brown, sparsely pubescent when young, glabrescent, with sparse, curved small prickles. Leaves simple; petiole 2.5–4 cm, sparsely pubescent, with minute prickles; stipules caducous, free, narrowly obovate, yellowish villous, apex palmatipartite, lobes lanceolate or linear-lanceolate; blade ovate, 6–11 × 3–6 cm, lateral veins 4 or 5 pairs, raised abaxially, slightly impressed adaxially, abaxially densely rusty yellow tomentose, with long hairs along veins, adaxially glabrous, base cuneate to rounded, margin undivided, sharply serrulate, apex caudate. Inflorescences terminal and axillary, short subracemes, to 8 cm, few flowered, sometimes flowers several in clusters or flowers solitary in leaf axils; rachis and pedicels yellowish villous; bracts narrowly obovate or broadly obovate, palmatipartite apically; lobes lanceolate or linear-lanceolate. Pedicel 1–1.5 cm. Flowers ca. 1 cm in diam. Calyx abaxially yellow-villous; sepals erect in fruit, lanceolate, 7–8 × 3–4 mm, margin entire or outer sepals lacinate, tomentose, apex acuminate. Petals suborbicular, much shorter than sepals, glabrous, base shortly clawed. Stamens slightly shorter than or nearly as long as petals; filaments broad, complanate. Pistils 10–20 or slightly more, glabrous; styles much longer than stamens. Aggregate fruit small, with few drupelets, enclosed in persistent calyx; pyrenes prominently rugose. Fl. Jul–Sep. fr. Oct–Dec.

• Foothills, rocky mountains, forest clearings; 1100–1500 m. SE Yunnan.

133. *Rubus fuscifolius* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 459. 1982.

锈叶悬钩子 xiu ye xuan gou zi

Shrubs more than 1 m tall. Branchlets brownish to dark brown, terete, densely rust colored tomentose, with sparse, minute prickles. Leaves simple; petiole 4–6.5 cm, densely rust-brown tomentose, with sparse, minute prickles; stipules free, oblong-lanceolate, to 1.5 cm, densely rust-brown tomentose, margin pinnately lacinate; lobes linear or linear-lanceolate; blade broadly ovate, 12–20 × 8–16 cm, thick, lateral veins 4 or 5 pairs, prominently raised abaxially, impressed adaxially, abaxially rust-brown tomentose, adaxially so only along veins, base cordate, margin unevenly sharply doubly serrate, apex acuminate. Inflorescences terminal or axillary, cymose-subpaniculate, compact, many flowered, terminal ones 5–10 cm, axillary ones 4–6 cm; rachis, pedicels, and abaxial surface of calyx densely rust-brown tomentose; bracts 1.3–1.5 cm, tomentose, margin lacinate or undivided. Pedicel ca. 1 cm. Flowers 7–10 mm in diam. Sepals erect after anthesis, ovate to ovate-lanceolate, 5–8 mm, apex acute to acuminate; outer sepals usually divided apically, inner sepals entire. Petals broadly

obovate or suborbicular, shorter than sepals, glabrous, base shortly clawed, apex premorse. Stamens often short, rarely nearly as long as petals; filaments linear. Pistils numerous, longer than stamens; ovary glabrous. Fruit unknown. Fl. Jul–Aug.

• Forest margins; 1300–2000 m. NW and S Yunnan.

134. *Rubus shihae* F. P. Metcalf, Lingnan Sci. J. 19: 31. 1940.

桂滇悬钩子 gui dian xuan gou zi

Rubus liboensis T. L. Xu.

Shrubs scandent, to 5 m tall. Branchlets brown or reddish brown, terete, soft hairy when young, glabrescent, with sparse, curved minute prickles. Leaves simple; petiole 2–4 cm, villous when young, glabrescent, with sparse, minute prickles; stipules caducous, free, oblong or ovate-lanceolate, 6–9 mm, yellow tomentose-villous, apex palmately lobed, lobes lanceolate; blade ovate to broadly ovate, rarely suborbicular, 8–11 × 5–9 cm, lateral veins 4–6 pairs, raised abaxially, abaxially densely rusty yellow tomentose, with long hairs along veins, adaxially glabrous, base truncate to shallowly cordate, margin undulate or slightly lobed, irregularly coarsely abruptly pointed-serrate, apex acute to shortly acuminate. Inflorescences terminal and axillary, short subracemes, loose, few flowered, sometimes flowers several in clusters in leaf axils or solitary; rachis and pedicels densely yellow tomentose-villous; bracts broadly ovate to oblong, 5–8 mm, yellow tomentose-villous, apex palmately lobed; lobes lanceolate. Pedicel 3–7 mm. Flowers 6–9 mm in diam. Calyx abaxially densely yellow sericeous-villous; sepals erect in fruit, lanceolate, 5–8 × 2.5–4 mm, margin tomentose, apex acuminate; outer sepals apically often lobed, inner sepals entire. Petals suborbicular or obovate, 4–6 × 3.5–5 mm, shorter than sepals, puberulous, base shortly clawed, apex incised. Stamens many, shorter than petals; filaments broader toward base. Pistils longer than stamens; ovary and style glabrous. Aggregate fruit red, glabrous, with few drupelets, enclosed in persistent calyx; pyrenes shallowly rugose. Fl. Jun–Jul, fr. Aug–Sep.

• Forests, hills, montane valleys; below 900 m. W Guangxi, S Guizhou, Yunnan.

135. *Rubus reflexus* Ker Gawler, Bot. Reg. 6: 461. 1820.

锈毛莓 xiu mao mei

Shrubs scandent, to 2 m tall. Branchlets brown to dark reddish brown, rust colored tomentose, with sparse, minute prickles. Leaves simple; petiole 2.5–5 cm, tomentose-villous, with sparse, minute prickles; stipules broadly obovate, 1–1.4(–2.5) × 0.9–1.3 cm, villous, margin pectinately or irregularly palmately lobed, lobes lanceolate or linear-lanceolate; blade narrowly or broadly ovate to suborbicular, 7–14(–20) × 5–11(–19) cm, abaxially rust colored tomentose, with long hairs along veins, adaxially glabrous or sparsely soft hairy along veins, prominently rugose, base cordate, margin 3–5(–7)-lobed or -parted; terminal lobe longer, larger, lanceolate or ovate-lanceolate, much longer than or nearly as long as lateral lobes, margin unevenly coarsely serrate to doubly serrate, apex obtuse or acute. Inflorescences terminal, short subracemes, 5–8 cm, or flowers

several in clusters in leaf axils; rachis and pedicels rusty villous; bracts obovate, 6–12 × 7–11 mm, villous, pectinately or palmately lobed; lobes linear or linear-lanceolate. Pedicel 3–6 mm. Flowers 1–1.5 cm in diam. Calyx abaxially densely rusty villous; sepals ovate-orbicular or ovate-lanceolate to lanceolate, 6–8 × 4–7 mm, outer sepals apically often palmately lobed; lobes lanceolate, inner sepals entire, margin tomentose. Petals white, oblong to suborbicular, nearly as long as sepals, glabrous, base shortly clawed. Stamens shorter than petals; filaments broad, complanate; anthers glabrous or apically hairy. Pistils longer than stamens, glabrous. Aggregate fruit dark red, subglobose, 7–10 mm in diam.; pyrenes rugose. Fl. Jun–Jul, fr. Aug–Sep.

• Mountainous regions, slopes, sparse forests, thickets, valleys, stream sides, moist places, near water courses; 300–1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Taiwan, Yunnan, Zhejiang.

- 1a. Leaf blade narrowly ovate, margin lobed or slightly undulate, terminal lobe much longer than lateral lobes.
- 2a. Leaf blade prominently lobed; stipules and bracts to 1.4 cm; sepals ovate-orbicular 135a. var. *reflexus*
- 2b. Leaf blade slightly undulate or inconspicuously lobed; stipules and bracts to 2.5 cm; sepals lanceolate to ovate-lanceolate 135b. var. *orogenes*
- 1b. Leaf blade broadly ovate to suborbicular, margin prominently lobed to parted, terminal lobe only slightly longer than or nearly as long as lateral lobes.
- 3a. Leaf blade 5–7-parted, segments lanceolate to oblong-lanceolate 135e. var. *lanceolobus*
- 3b. Leaf blade 3–5-lobed.
- 4a. Leaf blade 8–13 × 7–12 cm 135c. var. *hui*
- 4b. Leaf blade 14–20 × 12–19 cm 135d. var. *macrophyllus*

135a. *Rubus reflexus* var. *reflexus*

锈毛莓(原变种) xiu mao mei (yuan bian zhong)

Rubus esquirolii H. Léveillé.

Leaf blade prominently lobed; stipules and bracts to 1.4 cm. Sepals ovate-orbicular.

• Slopes, thickets in valleys, sparse forests; 300–1000 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Yunnan, Zhejiang.

135b. *Rubus reflexus* var. *orogenes* Handel-Mazzetti, Symb. Sin. 7: 496. 1933.

长叶锈毛莓 chang ye xiu mao mei

Rubus irenaeus Focke var. *orogenes* (Handel-Mazzetti) F. P. Metcalf.

Leaf blade slightly undulate or inconspicuously lobed; stipules and bracts to 2.5 cm. Sepals lanceolate to ovate-lanceolate.

• Mountainous regions, forests in valleys; low elevations. Guangxi, Guizhou, Hubei, Hunan, Jiangxi.

135c. *Rubus reflexus* var. *hui* (Diels ex Hu) F. P. Metcalf, Lingnan Sci. J. 11: 6. 1932.

浅裂锈毛莓 qian lie xiu mao mei

Rubus hui Diels ex Hu, Contr. Biol. Lab. Sci. Soc. China 7: 608. 1922; *R. axilliflorens* Cardot; *R. gilvus* Focke.

Leaf blade 8–13 × 7–12 cm, margin 3–5-lobed. 2n = 42*.

• Thickets on slopes, moist places in sparse forests, stream sides in montane valleys; 300–1500 m. Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Taiwan, Yunnan, Zhejiang.

135d. *Rubus reflexus* var. *macrophyllus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 460. 1982.

大叶锈毛莓 da ye xiu mao mei

Leaf blade 14–20 × 12–19 cm, margin 3–5-lobed.

• Montane valleys; below 1300 m. SE Yunnan (Pingbian Xian).

135e. *Rubus reflexus* var. *lanceolobus* F. P. Metcalf, Lingnan Sci. J. 11: 7. 1932.

深裂悬钩子 shen lie xuan gou zi

Leaf blade 5–7-lobed, lobes lanceolate or oblong-lanceolate.

• Valleys, near water courses, sparse forests; low elevations. Fujian, Guangdong, Guangxi, Hunan.

136. *Rubus flagelliflorus* Focke, Bot. Jahrb. Syst. 29: 393. 1900.

攀枝莓 pan zhi mei

Rubus maschalanthus Cardot.

Shrubs scandent or creeping. Branchlets brown or reddish brown, densely gray tomentose when young, glabrescent, with sparse, curved minute prickles. Leaves simple; petiole 3–6 cm, densely gray tomentose when young, glabrescent, with sparse, curved minute prickles; stipules caducous, free, brown, 7–12 mm, yellow tomentose-villous, apex palmately lobed, lobes lanceolate; blade ovate or narrowly ovate, 7–15 × 5–9 cm, palmately 5-veined, lateral veins 4 or 5 pairs, raised abaxially, papery, abaxially densely rusty yellow tomentose, adaxially glabrous, base deeply cordate, margin often undivided or slightly undulate, unevenly obtusely serrate, apex acute to shortly acuminate. Inflorescences short racemes, 2.5–5 cm, few flowered, or flowers several in clusters; rachis and pedicels densely yellow tomentose-villous; bracts brown, 6–11 mm, tomentose-villous, palmately divided apically; lobes lanceolate. Pedicel 1–2 cm. Flowers 1–1.2 cm in diam. Calyx abaxially densely yellow tomentose-villous; tube cupular; sepals reflexed after anthesis, ovate-lanceolate, 5–8 × 3–5 mm, apex shortly acuminate to acuminate; outer sepals broader than inner sepals, margin 2- or 3-lobed, inner sepals with entire margin. Petals white, suborbicular, much shorter than sepals, basally puberulous. Stamens many, glabrous or slightly pilose; filaments somewhat longer than petals, apex subulate; anthers glabrous. Pistils slightly

longer than stamens; styles and ovaries often glabrous. Aggregate fruit black at maturity, semiglobose, 1–1.3 cm in diam., glabrous; pyrenes smooth or slightly rugose. Fl. May–Jun, fr. Jul–Aug.

• Waste places on hills, rock cliffs, slopes, valleys; 900–1500 m. Fujian, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Taiwan (Lan Yu).

137. *Rubus hastifolius* H. Léveillé & Vaniot, Bull. Soc. Bot. France 51: 218. 1904.

戟叶悬钩子 *ji ye xuan gou zi*

Rubus rufolanatus H. T. Chang.

Shrubs evergreen, scandent, to 12 m tall. Branches grayish brown, terete, long flagelliform; branchlets brownish, densely gray tomentose, glabrescent, with sparse, short prickles; petiole 2–5 mm, densely tomentose, unarmed or occasionally with minute prickles; stipules caducous, free, oblong, 6–9 mm, palmatipartite nearly to base, lobes linear-lanceolate, soft hairy; blade oblong-lanceolate or ovate-lanceolate, 6–12 × 2.5–4 cm, lateral veins 5–8 pairs, prominent abaxially, subleathery, abaxially densely reddish brown tomentose, adaxially dark green, glabrous, base deeply cordate, margin usually with 2 distinct lobes near base; lobes serrulate, apex obtuse or acute. Inflorescences terminal or axillary, short racemes or corymbose, 3–5 cm, 3–8-flowered; rachis and pedicels densely reddish brown sericeous-villous; bracts caducous, oblong, 5–8 mm, soft hairy, palmatipartite nearly to base, but bracts apically on inflorescences often shorter, divided into 2 or 3 linear lobes. Pedicel 0.8–1.5 cm. Flowers ca. 1.5 cm in diam. Calyx abaxially densely reddish brown sericeous-villous; tube pelviform; sepals reflexed after anthesis, ovate-lanceolate, 5–8 × 3–6 mm, margin undivided or outer sepals apically shallowly laciniate, apex shortly acuminate or acute. Petals white, obovate, ca. 5 mm, glabrous, base shortly clawed. Stamens many in 2 or 3 whorls, shorter than petals; filaments broad, complanate, glabrous; anthers yellowish, slightly sericeous-villous. Pistils nearly as long as or slightly longer than stamens; styles sparsely sericeous-villous; ovary glabrous. Aggregate fruit red when immature, purplish black at maturity, subglobose, slightly compressed, 1–1.2 cm in diam., glabrous, fleshy; pyrenes shallowly foveolate. Fl. Mar–May, fr. Jun–Jul.

Shaded slopes, ravines, sparse forests, thickets; 300–1500 m. Guangdong, Guizhou, Hunan, Jiangxi, Yunnan [Thailand, Vietnam].

This species is commonly used medicinally in N Guangdong.

138. *Rubus taronensis* C. Y. Wu ex T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 308. 1982.

独龙悬钩子 *du long xuan gou zi*

Shrubs scandent. Branchlets grayish brown or brown, terete, slender, with thin soft hairs, sparse, yellow glands, and small curved prickles. Leaves simple; petiole 1–2 cm, with thin soft hairs, sparse, yellow glands, and minute prickles; stipules caducous, lanceolate, 5–7 mm, margin entire or divided; blade ovate-lanceolate, 8–12 × 3–5 cm, lateral veins 7 or 8 pairs, raised abaxially, impressed adaxially, both surfaces yellow glandular, soft hairy only along veins, base rounded to subtruncate, margin with irregular long pointed sharp serrations, apex long caudate. Inflorescences terminal and axillary, terminal

ones narrow cymose panicles, 8–14 cm, axillary ones subracemes, shorter; rachis and pedicels yellow glandular, thinly soft hairy; bracts lanceolate or linear, margin entire or divided. Pedicel ca. 1 cm. Flowers 6–8 mm in diam. Calyx abaxially subglabrous, yellow glandular; sepals triangular-ovate, 4–6 × 1.5–3 mm, margin entire, apex acuminate to shortly caudate. Petals greenish, oblong, shorter than sepals, apex obtuse. Stamens numerous, shorter than petals; filaments broad, complanate, glabrous. Pistils ca. 15–20, shorter than or nearly as long as stamens; ovary and style glabrous. Fruit unknown. Fl. Jun–Jul.

• Dense forests; ca. 1700 m. NW Yunnan.

139. *Rubus pirifolius* Smith, Pl. Icon. Ined. 3: t. 61. 1791.

梨叶悬钩子 *li ye xuan gou zi*

Shrubs climbing, to 8 m tall. Branches grayish brown to dark purplish brown, terete; branchlets brown or reddish brown, soft hairy, glabrescent, with few complanate curved prickles. Leaves simple; petiole to 1 cm, hairy, with sparse prickles; stipules caducous, free, linear-lanceolate, 7–8 mm, hairy, apex lacinate into 3–5 lobes; blade ovate, ovate-oblong, or elliptic-oblong, 6–11 × 3.5–5.5 cm, venation pinnate, lateral veins 5–8 pairs, prominent abaxially, slightly impressed adaxially, papery, both surfaces nearly glabrous except densely hairy along midvein and lateral veins, hairs deciduous in age, base rounded or shallowly cordate, margin unevenly coarsely serrate, apex acute to acuminate. Inflorescences terminal and axillary, terminal ones cymose panicles, 10–14 cm, axillary ones panicles or subracemes, smaller; rachis and pedicels densely grayish yellow pubescent or subglabrous, unarmed or with few small prickles; bracts early caducous, linear-lanceolate, 6–7 mm, hairy, apex divided into 3 or 4 lobes. Pedicel 4–12 mm. Flowers 1–1.5 cm in diam. Calyx abaxially pubescent or subglabrous; tube shallowly cupular; sepals triangular-lanceolate or ovate-lanceolate, 6–8 × 2–3.5 mm, margin entire or apically 2- or 3-laciniate. Petals white, elliptic to obovate, 3–5(–7) mm, shorter than sepals, glabrous. Stamens many, slightly longer than petals; filaments linear. Pistils 5–10(–17); ovary often with many long hairs abaxially, rarely glabrous; styles to 6(–8) mm, glabrous, rarely with some hairs basally. Aggregate fruit red, 1–1.5 cm in diam., with several drupelets, usually glabrous; drupelets 4–6 × 3–5 mm; pyrenes rugose. Fl. Apr–Jul, fr. Aug–Oct. $2n = 42^*$.

Mountainous regions, sheltered sites on mountains, forests, forest margins, stream sides; below 2100 m. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Sichuan, Taiwan, Yunnan, Zhejiang [Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, Vietnam].

This species is used medicinally.

- 1a. Leaf base shallowly cordate; inflorescences and abaxial surface of calyx subglabrous or sparsely hairy 139d. var. *cordatus*
- 1b. Leaf base rounded; inflorescences and abaxial surface of calyx densely hairy.
 - 2a. Leaf blade adaxially and sepals abaxially tomentose 139c. var. *tomentosus*
 - 2b. Leaf blade hairy adaxially; sepals abaxially densely hairy.
 - 3a. Leaf blade hairy only along

- veins adaxially, glabrate
in age 139a. var. *pirifolius*
- 3b. Leaf blade densely hairy
adaxially, especially more
densely so along veins 139b. var. *permollis*

139a. *Rubus pirifolius* var. *pirifolius*

梨叶悬钩子(原变种) li ye xuan gou zi (yuan bian zhong)

Rubus brevipetalus Elmer; *R. floribundopaniculatus* Hayata; *R. parvipetalus* Odashima; *R. philippinensis* Focke ex Elmer; *R. rotundifolius* Reinwardt ex Miquel.

Leaf base rounded; blade hairy only along veins adaxially, glabrate in age. Inflorescences and abaxial surface of calyx densely hairy.

Sheltered sites on mountains, forests, forest margins; low to medium elevations. Fujian, Guangdong, Guangxi, Guizhou, Sichuan, Taiwan, Yunnan [Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, Vietnam].

139b. *Rubus pirifolius* var. *permollis* Merrill, *Lingnan Sci. J.* 11: 44. 1932.

柔毛梨叶悬钩子 rou mao li ye xuan gou zi

Leaf base rounded; blade densely hairy adaxially, especially more densely so along veins. Inflorescences and abaxial surface of calyx densely hairy.

- Stream sides in montane valley forests. Guangxi, Hainan.

139c. *Rubus pirifolius* var. *tomentosus* Kuntze ex Franchet, *Nouv. Arch. Mus. Hist. Nat.*, ser. 2, 8: 219. 1885.

绒毛梨叶悬钩子 rong mao li ye xuan gou zi

Leaf base rounded; blade adaxially and sepals abaxially tomentose. Inflorescences densely hairy.

- C Sichuan (Baoping Xian).

139d. *Rubus pirifolius* var. *cordatus* T. T. Yu & L. T. Lu, *Acta Phytotax. Sin.* 22: 308. 1982.

心状梨叶悬钩子 xin zhuang li ye xuan gou zi

Leaf base shallowly cordate. Inflorescences and abaxial surface of calyx subglabrous or sparsely hairy.

- Forest margins, mountainous regions; 1500–2100 m. SE Yunnan.

140. *Rubus acuminatus* Smith in Rees, *Cycl.* 30: *Rubus* no. 43. 1819.

尖叶悬钩子 jian ye xuan gou zi

Shrubs scandent, to 8 m tall. Branchlets brown or reddish brown, slightly angled, thinly pubescent, glabrescent, with sparse, minute prickles. Leaves simple; petiole 1–2 cm, slightly puberulous, with sparse, minute prickles; stipules usually caducous, free, linear or lanceolate, 4–6 cm, margin entire or toothed; blade ovate-oblong or lanceolate, 7–11 × 3–4 cm, lateral veins 6–8 pairs, slightly raised abaxially, both surfaces glabrous or sparsely pubescent only along veins abaxially, base rounded, margin irregularly serrate, apex caudate. Inflorescences terminal or axillary, terminal ones narrow cymose panicles (8–)10–

15 cm, axillary ones subracemes, sometimes subcorymbose, less than 8 cm; rachis and pedicels usually glabrous, occasionally sparsely pubescent; bracts linear or lanceolate, 3–5 mm, margin entire or dentate. Pedicel 1–2 cm. Flowers ca. 1 cm in diam. Calyx abaxially glabrous; tube shallowly cupular; sepals erect in fruit, ovate, 4–6 × 2–4 mm, inner sepals tomentose marginally, margin undivided, apex shortly acuminate. Petals white, broadly elliptic or oblong, 4–5 × 2–3 mm, glabrous, base shortly clawed. Stamens many; filaments slightly broadened basally, shorter than petals. Pistils ca. 10–20, shorter than stamens; ovary glabrous. Aggregate fruit red, glabrous, with few larger drupelets, enclosed in persistent calyx; pyrenes rugose. Fl. Jul–Sep, fr. Oct–Nov. $2n = 28$.

Thickets, bamboo thickets, sparsely forested slopes, stream sides, roadsides; 1000–3000 m. Guizhou, Yunnan [Bhutan, India, Nepal, Sikkim, Vietnam].

- 1a. Pedicel and abaxial surface of calyx usually glabrous; leaf margin sharply serrulate 140a. var. *acuminatus*
- 1b. Pedicel and abaxial surface of calyx puberulous; leaf margin coarsely serrate 140b. var. *puberulus*

140a. *Rubus acuminatus* var. *acuminatus*

尖叶悬钩子(原变种) jian ye xuan gou zi (yuan bian zhong)

Rubus betulinus D. Don.

Pedicel and abaxial surface of calyx often glabrous. Leaf margin sharply serrulate.

Bamboo thickets, stream sides, roadsides; below 3000 m. Yunnan [Bhutan, India, Nepal, Sikkim, Vietnam].

140b. *Rubus acuminatus* var. *puberulus* T. T. Yu & L. T. Lu, *Acta Phytotax. Sin.* 20: 308. 1982.

柔毛尖叶悬钩子 rou mao jian ye xuan gou zi

Pedicel and abaxial surface of calyx puberulous. Leaf margin coarsely serrate.

- Thickets, sparsely forested slopes; 1000–1500 m. Guizhou.

141. *Rubus brevipetiolatus* T. T. Yu & L. T. Lu, *Acta Phytotax. Sin.* 20: 453. 1982.

短柄悬钩子 duan bing xuan gou zi

Shrubs. Branchlets brownish to dark brown, terete, pubescent, glabrescent, with sparse, curved minute prickles. Leaves simple; petiole 7–10 mm, pubescent, with sparse, curved minute prickles; stipules free, brown, oblong-lanceolate or elliptic-lanceolate, 1–1.4 cm × 3–5 mm, margin entire or sparsely shallowly serrate; blade oblong-lanceolate, 7–13 × 2–3 cm, lateral veins 8–11 pairs, prominent abaxially, abaxially sparsely pubescent only along veins, with remote curved minute prickles along midvein, adaxially glabrous except pubescent along midvein, base rounded, margin coarsely sharply serrate, apex acuminate. Inflorescences terminal or axillary, narrow cymose panicles, few flowered, axillary ones shorter, or flowers few in clusters; rachis and pedicels pubescent, with sparse, curved minute prickles; bracts similar to stipules but sometimes apically lobed; lobes linear to lanceolate, apex acuminate. Pedi-

cel 5–8 mm. Flowers 7–9 mm in diam. Calyx abaxially pubescent; sepals ovate-lanceolate, margin tomentose, apex acuminate; outer sepals often lacinate at apex, lobes lanceolate or linear, inner sepals entire. Petals elliptic or spatulate, shorter than sepals, base narrowly long clawed. Stamens many, unequal in length; filaments linear. Pistils ca. 10–15, nearly as long as stamens; style and ovary glabrous. Fl. summer, fr. unknown.

- Thickets; low elevations. Guangxi.

142. *Rubus yunanicus* Kuntze, Meth. Sp.-Besch. *Rubus*, 71. 1879.

云南悬钩子 *yun nan xuan gou zi*

Shrubs. Branchlets purplish brown, terete, glabrous, with sparse, curved prickles. Leaves simple; petiole 1–2 cm, thinly pubescent, with remote, curved minute prickles; stipules early caducous, 6–8 mm, pubescent, margin lacinate, lobes linear or lanceolate; blade elliptic or oblong, 6–12 × 3–7 cm, lateral veins 7 or 8 pairs, slightly raised abaxially, glabrous except veins on both surfaces pubescent, base subtruncate to slightly cordate, margin unevenly coarsely obtusely dentate, apex shortly acuminate. Inflorescences terminal or axillary, terminal ones narrow cymose panicles, 10–14 cm, many flowered, axillary ones subracemes, shorter; rachis and pedicels thinly pubescent; bracts caducous, lanceolate, 5–7 mm, pubescent, apex lacinate, lobes linear or lanceolate. Pedicel ca. 1 cm. Flowers 7–10 mm in diam. Calyx abaxially thinly pubescent; sepals ovate or triangular-ovate, 2.5–3.5 × 2–3 mm, margin tomentose, undivided, apex obtuse, rarely acute. Petals obovate or oblong, 3–4 × 2.5–3.5 mm, thinly pubescent basally, base clawed. Stamens many, nearly as long as or slightly shorter than petals; filaments linear, broader toward base. Pistils ca. 10–15, longer than stamens; style and ovary glabrous. Fruit unknown.

- Mountainous regions; low elevations. NW Yunnan.

143. *Rubus poliophyllus* Kuntze, Meth. Sp.-Besch. *Rubus*, 68. 1879.

毛叶悬钩子 *mao ye xuan gou zi*

Shrubs scandent, 2–5 m tall. Branchlets brownish to purplish brown, yellowish sericeous-villous, glabrescent, with remote complanate curved prickles. Leaves simple; petiole 0.4–1 cm, longer on old branches, yellowish sericeous-villous when young, glabrate in age; stipules free, 8–10 mm, pinnate-lacinate; lobes lanceolate or linear, sericeous-villous; blade oblong, ovate-oblong, or elliptic, 8–14 × 4–6.5 cm, lateral veins 7 or 8 pairs, veins brown, raised abaxially, impressed adaxially, thick, abaxially yellowish sericeous-villous, glabrescent, adaxially sericeous-villous only along veins, base subtruncate to shallowly cordate, margin with unequal sharp teeth, apex acuminate. Inflorescences terminal and axillary, cymose panicles, 12–25(–27) cm, many flowered, axillary ones shorter, racemose; rachis and pedicels densely yellowish sericeous-villous; bracts 5–9 mm, margin lacinate above middle, lobes linear to lanceolate, sericeous-villous. Pedicel (0.3–)1–2 cm. Flowers 0.7–1.5 cm in diam. Calyx abaxially densely yellowish sericeous-villous; tube shallowly cupular; sepals 5 or 6, ovate or ovate-lanceolate, 4–6 × 3–5 mm, margin tomentose and entire, apex

acuminate to caudate. Petals white, ovate to elliptic, 4–5 mm, puberulent, apex acute. Stamens numerous, slightly shorter than or nearly as long as petals; filaments linear, basally pubescent. Pistils 20–25(–42), somewhat longer than stamens, glabrous. Aggregate fruit red, subglobose, 8–10 mm in diam., glabrous, with few drupelets, persistent sepals green; pyrenes coarsely rugose. Fl. Mar–Apr, fr. Apr–Jun.

Sunny slopes, sparse mixed forests, roadsides; 600–1500 m. Yunnan [Sikkim].

Rubus poliophyllus is treated as a synonym of *R. paniculatus* Smith in Fl. Bhutan 1(3): 562. 1987.

- 1a. Petiole ca. 10 mm; pedicel 10–20 mm; flowers ca. 15 mm in diam.; pistils 20–25 143a. var. *poliophyllus*
- 1b. Petiole 4–6 mm; pedicel 3–7 mm; flowers 7–10 mm in diam.; pistils 25–42 143b. var. *ximengensis*

143a. *Rubus poliophyllus* var. *poliophyllus*

毛叶悬钩子(原变种) *mao ye xuan zou zi* (yuan bian zhong)

Rubus distentus Focke.

Petiole ca. 1 cm. Pedicel 1–2 cm. Flowers ca. 1.5 cm in diam. Pistils 20–25.

Sunny slopes, sparse mixed forests; 600–1500 m. Yunnan [Sikkim].

143b. *Rubus poliophyllus* var. *ximengensis* Y. Y. Qian, Acta Phytotax. Sin. 39: 466. 2001.

西盟悬钩子 *xi meng xuan gou zi*

Petiole 4–6 mm. Pedicel 3–7 mm. Flowers 7–10 mm in diam. Pistils 25–42.

- Forests on roadsides; ca. 1200 m. SW Yunnan (Ximeng Xian).

144. *Rubus forrestianus* Handel-Mazzetti, Symb. Sin. 7: 490. 1933.

贡山蓬蘽 *gong shan peng lei*

Shrubs lianoid, to 2 m tall. Branchlets brownish, terete, densely pubescent and glandular, with curved minute prickles. Leaves simple; petiole 2–3.5 cm, densely pubescent and glandular, with sparse, curved minute prickles; stipules caducous, free, to 1 cm, deeply lobed, lobes linear to linear-lanceolate, with short hairs and glands; blade broadly ovate or oblong-ovate, 5–12 × 4–9 cm, both surfaces sparsely pubescent and densely glandular, abaxially with sparse, curved small prickles along midvein, base cordate, margin 3–5-lobed or slightly undulate, densely sharply serrate, apex shortly acuminate. Inflorescences terminal and axillary, terminal ones cymose panicles, 7–12 cm, axillary ones subracemes, sometimes flowers several in clusters in leaf axils; rachis and pedicels densely pubescent and glandular; bracts 6–8 mm, lobed; lobes linear to linear-lanceolate, pubescent, glandular. Pedicel 4–8 mm. Flowers 6–8 mm in diam. Calyx tube shallowly campanulate; sepals triangular-lanceolate or ovate-lanceolate, 5–7 × 2–3 mm, margin entire, apex caudate. Petals white, spatulate or rhombic-elliptic,

4–6 × 3–4 mm, both surfaces pubescent, base broadly shortly clawed, apex obtuse to ± acute. Stamens many, slightly shorter than petals; filaments broad, complanate. Pistils few, slightly shorter than or ca. as long as stamens; style and ovary usually glabrous. Aggregate fruit red, subglobose, 5–7 mm when immature, glabrous, with few drupelets; pyrenes 1.5–2 mm, rugulose. Fl. May–Jun, fr. Jul–Aug.

- River valleys; 1000–2000 m. W Yunnan.

145. *Rubus laxus* Focke, Biblioth. Bot. 17(Heft 72): 68. 1910.

疏松悬钩子 *shu song xuan gou zi*

Shrubs climbing. Branchlets brownish to purplish black, tomentose-villous, nearly unarmed or with sparse, curved minute prickles. Leaves simple; petiole 3–5 cm, tomentose-villous, with sparse, minute prickles; stipules caducous, narrower, margin deeply lacinate, lobes linear, hairy; blade narrowly ovate, 7–11 × 4–7 cm, lateral veins 6 or 7 pairs, abaxially densely pilose, adaxially less densely so, base cordate, margin undivided or 3–5-lobed, irregularly thinly serrate, apex acute to shortly acuminate. Inflorescences usually terminal, cymose panicles, lax, to 20 cm; rachis and pedicels tomentose-villous; bracts caducous, margin lacinate, lobes lanceolate or linear, hairy. Pedicel 1–2 cm. Flowers ca. 1 cm in diam. Calyx abaxially tomentose-villous; sepals ovate or ovate-triangular, 4–6 mm and nearly as broad, apex acute to shortly acuminate; outer sepals pinnately lacinate, lobes linear to lanceolate, inner sepals usually entire. Petals white, obovate to elliptic, slightly longer than sepals, base slightly pubescent and shortly clawed. Stamens many, slightly shorter than petals; filaments linear, hairy in basal part. Pistils to 50, somewhat shorter than stamens; ovary glabrous. Aggregate fruit small, enclosed in persistent calyx. Fl. Jul–Aug, fr. Sep–Oct.

- Montane valleys, slopes, sparse forests; 800–1800 m. Yunnan.

146. *Rubus lambertianus* Seringe in Candolle, Prodr. 2: 567. 1825.

高粱泡 *gao liang pao*

Shrubs lianoid, semideciduous, to 3 m tall. Branchlets brown or reddish brown, terete, thinly pubescent or subglabrous, with sparse, curved minute prickles. Leaves simple; petiole 2–4(–5) cm, thinly pubescent or subglabrous, with sparse, minute prickles; stipules caducous, free, to 1 cm, lacinate-parted nearly to base, lobes linear to lanceolate, thinly pubescent or subglabrous; blade broadly ovate, rarely oblong-ovate, 5–10(–12) × 4–8 cm, 5-veined, abaxially pilose, more densely so along veins, rarely glabrous, with sparse, minute prickles along midvein, adaxially pilose or hairy only along veins, base cordate, margin distinctly 3–5-lobed or undulate, serrulate, apex acuminate. Inflorescences terminal or axillary, terminal ones usually cymose panicles, 10–15 cm, axillary ones often subracemes, shorter, sometimes flowers few in clusters in leaf axils; rachis and pedicels thinly pubescent, subglabrous, or glabrous; bracts 6–9 mm, margin lacinate lobed; lobes linear, puberulous. Pedicel 5–10 mm. Flowers 7–9 mm in diam. Calyx abaxially thinly pubescent; sepals ovate-lanceolate or triangular-lanceolate, 5–8 × 2.5–4 mm, margin entire, apex acuminate,

margin of inner sepals gray tomentose. Petals white, obovate, glabrous, slightly shorter than or nearly as long as sepals, base clawed. Stamens many, somewhat shorter than petals; filaments broad, complanate. Pistils ca. 15–20, slightly shorter than or ca. as long as stamens, glabrous. Aggregate fruit red at maturity, subglobose, 6–8 mm in diam., glabrous, with many drupelets; pyrenes small, ca. 2 mm, prominently rugose. Fl. Jul–Aug, fr. Sep–Nov. $2n = 28$.

Slopes, roadsides, montane valleys, stony ravines, grasslands, thickets, sparse forests, forest margins, moist places; 200–2500 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Thailand].

Rubus urophyllus Y. C. Liu & F. Y. Lu (Quart. J. Chin. Forest. 9(2): 133. 1976) was treated in Fl. Taiwan as an uncertain species that might be only varietally distinct from *R. lambertianus*.

- 1a. Leaf blade and inflorescences thinly pilose.
 - 2a. Branchlets, petioles, inflorescences, and abaxial surface of calyx without glandular hairs and bristles 146a. var. *lambertianus*
 - 2b. Branchlets, petioles, inflorescences, and abaxial surface of calyx with glandular hairs or bristles 146b. var. *paykouangensis*
- 1b. Leaf blade glabrous or slightly pilose only along veins adaxially; inflorescences glabrous or subglabrous.
 - 3a. Inflorescences without glandular hairs 146c. var. *glaber*
 - 3b. Inflorescences wholly or partly, or abaxial surface of calyx with minute glandular hairs 146d. var. *glandulosus*

146a. *Rubus lambertianus* var. *lambertianus*

高粱泡(原变种) *gao liang pao* (yuan bian zhong)

Rubus ochlanthus Hance; *R. pycnanthus* Focke.

Leaf blade and inflorescences thinly pubescent. Branchlets, petioles, inflorescences, and abaxial surface of calyx without glandular hairs and bristles.

Slopes, roadsides, montane valleys, grasslands, thickets, forest margins; low to medium elevations. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hainan, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Taiwan, Yunnan, Zhejiang [Japan].

146b. *Rubus lambertianus* var. *paykouangensis* (H. Léveillé) Handel-Mazzetti, Symb. Sin. 7: 489. 1933.

毛叶高粱泡 *mao ye gao liang pao*

Rubus paykouangensis H. Léveillé, Repert. Spec. Nov. Regni Veg. 4: 333. 1907; *R. viscidus* Focke.

Leaf blade and inflorescences thinly pubescent. Branchlets, petioles, inflorescences, and abaxial surface of calyx with glandular hairs or with intermixed bristles.

Thickets on slopes; 300–2200 m. Guangxi, Guizhou, Hunan, Yunnan [Thailand].

146c. *Rubus lambertianus* var. *glaber* Hemsley, J. Linn. Soc., Bot. 23: 233. 1887.

光滑高粱泡 *guang hua gao liang pao*

Rubus ampelinus Focke; *R. hakonensis* Franchet & Savatier; *R. lambertianus* subsp. *hakonensis* (Franchet & Savatier) Focke; *R. lambertianus* var. *hakonensis* (Franchet & Savatier) Rehder.

Leaf blade glabrous or slightly pilose only along veins adaxially. Inflorescences glabrous or subglabrous, without glandular hairs.

Slopes, stony ravines, forest margins; 200–2500 m. Gansu, Guizhou, Hubei, Jiangxi, Shaanxi, Sichuan, Yunnan, Zhejiang [Japan].

146d. *Rubus lambertianus* var. *glandulosus* Cardot, Notul. Syst. (Paris) 3: 293. 1914.

腺毛高粱泡 *xian mao gao liang pao*

Rubus adenothyrsus Cardot; *R. gelatinosus* Sasaki; *R. lambertianus* var. *mekongensis* Handel-Mazzetti; *R. lambertianus* var. *minimiflorus* (H. Léveillé) Cardot; *R. lambertianus* var. *morii* (Hayata) S. S. Ying; *R. minimiflorus* H. Léveillé; *R. morii* Hayata; *R. tiponensis* Hosokawa.

Leaf blade glabrous or slightly pilose only along veins adaxially. Inflorescences wholly or partly glabrous or subglabrous. Abaxial surface of calyx with minute glandular hairs. $2n = 28^*$.

Sparse forests in valleys, moist places in thickets; mostly below 2000 m. Guizhou, Hubei, Sichuan, Taiwan, Yunnan [Japan].

147. *Rubus calycacanthus* H. Léveillé, Repert. Spec. Nov. Regni Veg. 8: 58. 1910.

猬莓 *wei mei*

Rubus echinoides F. P. Metcalf; *R. labbei* H. Léveillé & Vaniot.

Shrubs scandent, 0.5–1.5 cm tall. Branchlets grayish brown or brownish, with soft hairs and curved minute prickles, sometimes with sparse, short glandular hairs. Leaves simple; petiole 2–4 cm, soft villous, with sparse, short glandular hairs; stipules narrower, 0.8–1.2 cm, margin fimbriately to pinnately lobed; lobes linear-lanceolate, soft villous, with sparse, short glandular hairs; blade ovate-orbicular, rarely ovate, 6–9 × 5–7 cm, lateral veins 5 pairs, raised abaxially, slightly impressed adaxially, abaxially soft villous, more densely so along veins, adaxially sparsely soft hairy, base deeply cordate, margin 3–5-lobed, rarely undulate, coarsely serrate, apex triangular-acute, rarely obtuse. Inflorescences terminal or axillary, narrow cymose panicles or subracemes, 6–12 cm, sometimes flowers several in leaf axils or solitary; rachis and pedicels tomentose-villous, with sparse, short glandular hairs; bracts 7–10 mm, fimbriately to pinnately lobed; lobes linear, soft villous, with sparse, short glandular hairs. Pedicel 5–8 mm. Flowers 1–1.5 cm in diam. Calyx abaxially tomentose-villous and with dense, short needle-like prickles; sepals broadly ovate, 6–8 × 3–5(–6) mm, apex acuminate; outer sepals pinnately divided, lobes lanceolate, inner sepals entire or only apically slightly lobed. Petals

white, spatulate-obovate, 7–9 × 5–6 mm, base soft hairy, clawed. Stamens many, shorter than petals; filaments broadened and flattened, villous; anthers glabrous. Pistils numerous, shorter than or nearly as long as stamens; style and ovary glabrous. Aggregate fruit red, subglobose, 1–1.2 cm in diam. Fl. Jun–Aug, fr. Sep–Oct.

• Slopes, montane valleys, dense forests, thickets; 1000–1500 m. Guangxi, Guizhou, Yunnan.

148. *Rubus gongshanensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 457. 1982.

贡山悬钩子 *gong shan xuan gou zi*

Shrubs 1–1.5 m tall, stipitate glandular or not. Branchlets dark brown to purplish brown, slightly angled, pubescent, with minute prickles. Leaves simple; petiole 5–11 cm, pubescent, with minute prickles; stipules and bracts early caducous; blades ovate-orbicular, 10–17 × 15–20 cm, lateral veins 3 or 4 pairs, prominent abaxially, impressed adaxially, both surfaces pubescent, more densely so along veins, base deeply cordate, margin lobed; lobes triangular, margin irregularly coarsely serrate, apex acute. Inflorescences terminal or sometimes axillary, narrow cymose panicles or subracemes, to 18 cm, densely or sparsely flowered, axillary flowers usually several in clusters; rachis and pedicels pubescent, with needle-like prickles or not. Pedicel 1.5–2.5 cm. Calyx abaxially densely gray pubescent, with needle-like prickles or not; tube pelviform or shallowly cupular; sepals erect after anthesis, lanceolate or ovate-lanceolate, 8–10(–12) × 4–5(–6) mm, apex caudate; outer sepals apically shallowly 2- or 3-laciniate, inner sepals entire. Aggregate fruit red, subglobose, 1.4–1.8 cm in diam., glabrous, enclosed in persistent calyx. Fl. summer, fr. Sep–Oct.

• Bamboo thickets on slopes, forested slopes; below 3500 m. NW and SE Yunnan.

- 1a. Plants not stipitate glandular 148c. var. *eglandulosus*
- 1b. Plants stipitate glandular.
 - 2a. Rachis, pedicels, and abaxial surface of calyx pubescent, with needle-like prickles 148a. var. *gongshanensis*
 - 2b. Rachis, pedicels, and abaxial surface of calyx pubescent, without needle-like prickles 148b. var. *qiujiangensis*

148a. *Rubus gongshanensis* var. *gongshanensis*

贡山悬钩子(原变种) *gong shan xuan gou zi* (yuan bian zhong)

Plants stipitate glandular. Rachis, pedicels, and abaxial surface of calyx pubescent, with needle-like prickles.

• Bamboo thickets on slopes; below 3500 m. NW Yunnan.

148b. *Rubus gongshanensis* var. *qiujiangensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 457. 1982.

无刺贡山悬钩子 *wu ci gong shan xuan gou zi*

Plants stipitate glandular. Rachis, pedicels, and abaxial surface of calyx pubescent, without needle-like prickles.

- Forested slopes; below 3500 m. NW Yunnan.

148c. *Rubus gongshanensis* var. *eglandulosus* Y. Gu & W. L. Li, Bull. Bot. Res., Harbin 20: 122. 2000.

无腺贡山悬钩子 *wu xian gong shan xuan gou zi*

Plants not stipitate glandular.

- Slopes; 1800–2000 m. SE Yunnan.

149. *Rubus menglaensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 456. 1982.

勐腊悬钩子 *meng la xuan gou zi*

Shrubs ca. 1 m tall. Branchlets grayish brown or reddish brown, cylindrical, brownish yellow pubescent, soft bristly, with sparse, curved minute prickles and glandular hairs; petiole 2–3 cm, pubescent, soft bristly, with sparse, curved minute prickles and glandular hairs; stipules free, brownish, to 1 cm, pubescent, soft bristly, deeply pinnate-laciniate; lobes linear; blade narrowly ovate or broadly oblong, 7–13 × 5–8 cm, lateral veins 5 or 6 pairs, both surfaces pubescent, soft bristly, with sparse, curved minute prickles along veins, base deeply cordate, margin undivided or somewhat undulate, densely thin sharply serrate, apex acute. Inflorescences terminal or axillary, subracemes or narrow panicles, 6–10 cm, few flowered; rachis and pedicels densely pubescent, sparsely soft bristly, with glandular hairs; bracts less than 1 cm, pubescent, soft bristly, deeply pinnate-laciniate; lobes linear. Pedicel 1–1.5 cm. Flowers 1–1.5 cm in diam. Calyx densely brownish yellow soft bristly, pubescent, with sparse, intermixed glandular hairs; tube pelviform; sepals ovate-lanceolate, 6–8 × 3–5 mm, apex caudate; outer sepals apically often shallowly laciniate. Petals suborbicular, 5–6 mm in diam., shorter than sepals, adaxially puberulous, base shortly clawed, margin crenate. Stamens many, shorter than petals; filaments broad, complanate, glabrous. Pistils ca. 40 or slightly more, longer than stamens; ovary pubescent. Aggregate fruit red, subglobose. Fl. May–Jul, fr. Aug–Sep.

- Disturbed places on mountains; 500–600 m. S Yunnan.

150. *Rubus ichangensis* Hemsley & Kuntze, J. Linn. Soc., Bot. 23: 231. 1887.

宜昌悬钩子 *yi chang xuan gou zi*

Rubus eugenius Focke; *R. ichangensis* var. *latifolius* Car-dot; *R. papyrus* H. Léveillé.

Shrubs scandent, deciduous or semievergreen, to 3 m tall. Branchlets greenish to greenish brown, terete, glabrous or subglabrous, with glandular hairs when young, glabrescent, with sparse, curved short prickles. Leaves simple; petiole 2–4 cm, glabrous, usually with sparse, glandular hairs and short prickles; stipules caducous, subulate or linear-lanceolate, 4–8 mm, glabrous, with sparse, short glandular hairs marginally, margin entire or only apically shallowly laciniate; blade ovate-lanceolate, 8–15 × 3–6 cm, subleathery, both surfaces glabrous, abaxially with sparse, small prickles along midvein, base deeply cordate, with broad basal incision, margin shallowly undulate or lobulate near base, sparsely serrulate, apex acuminate. Inflorescences terminal and axillary, terminal ones narrow cymose panicles, 15–25 cm, axillary ones subracemes, shorter; rachis

and pedicels sparsely pubescent, with glandular hairs, sometimes intermixed with small prickles; bracts subulate to linear-lanceolate, 4–6 mm, margin entire or apically laciniate, with sparse, glandular hairs. Pedicel 3–6 mm. Flowers 6–8 mm in diam. Calyx abaxially sparsely pubescent, with glandular hairs; sepals ovate, 3–5 × 2–3 mm, margin sometimes gray pubescent, apex acute to shortly acuminate. Petals white, elliptic, shorter than or nearly as long as sepals. Stamens many, shorter than petals; filaments somewhat broadened and flattened. Pistils 12–30, slightly shorter than or ca. as long as stamens, glabrous. Aggregate fruit red, subglobose, 6–8 mm in diam., glabrous; pyrenes rugulose. Fl. Jul–Aug, fr. Sep–Oct. $2n = 28^*$.

- Slopes, fallow fields, dense forests in valleys, thickets; 800–2500 m. Anhui, Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Shaanxi, Sichuan, Yunnan.

The fruit are sweet and edible, the roots are used in medicine, and tannin is extracted from the roots and stems.

151. *Rubus latoauriculatus* F. P. Metcalf, Lingnan Sci. J. 19: 27. 1940.

耳叶悬钩子 *er ye xuan gou zi*

Shrubs to 2 m tall. Branchlets dark purplish brown when young, later grayish brown, terete, with sparse, curved prickles. Leaves simple; petiole 1–2 cm, glabrous or slightly pubescent along groove, with sparse, minute prickles; stipules caducous, free, oblong-lanceolate or ovate-lanceolate, 7–9 mm, glabrous, palmatifid, lobes linear; blade lanceolate or oblong-lanceolate, 8–14 × 1.8–3.5 cm, lateral veins 7–10 pairs, prominent adaxially, abaxially glabrous, with sparse, curved small prickles along midvein, adaxially glabrous except slightly hairy along veins, base cordate-auriculate, basal incision narrow, margin thinly sharply serrate, apex acuminate. Inflorescences terminal, narrow cymose panicles, 7–11 cm; rachis and pedicels glabrous; bracts oblong-lanceolate or ovate-lanceolate, 5–8 mm, glabrous, palmatifid; lobes linear. Pedicel 5–10 mm. Flowers 6–8 mm in diam. Calyx abaxially glabrous except sparsely stipitate glandular; sepals erect in fruit, lanceolate or ovate-lanceolate, 6–10 mm, glabrous, margin entire or lobed, sometimes inner sepals with gray tomentose margin, apex caudate. Petals suborbicular, basally pubescent adaxially, apex abruptly pointed. Stamens many; filaments short, slender. Pistils glabrous. Aggregate fruit red, less than 1 cm in diam., glabrous; pyrenes rugose. Fl. Jun–Jul, fr. Jul–Sep.

- Montane valleys, mountain summits, near water courses, dense forests; below 1000 m. S Guangxi.

152. *Rubus howii* Merrill & Chun, Sunyatsenia 5: 71. 1940.

裂叶悬钩子 *lie ye xuan gou zi*

Shrubs scandent. Branchlets brown or reddish brown, terete, densely yellowish brown villous, with curved minute prickles. Leaves simple; petiole 1–2 cm, densely yellowish brown villous, with few small prickles; stipules caducous, free, 6–9 mm, deeply lobed, lobes linear, yellowish brown villous; blade oblong to ovate-oblong, 7–14 × 2–5 cm, lateral veins 6–8 pairs, prominent abaxially, impressed adaxially, both surfaces yellowish brown villous along veins, abaxially with sparse, minute prickles along midvein, base cordate, margin irregularly coarse-

ly serrate, with 1 or 2 broadly ovate shallow lobes on each side below middle; lobes unequal, longer ones to 1.5 cm, apex acute to shortly acuminate. Inflorescences terminal, subracemes, 5–8 cm, 1- or few flowered, or flowers several in clusters in leaf axils; rachis, pedicels, and abaxial surface of calyx densely yellowish brown villous, with sparse, needle-like prickles; bracts caducous, 5–8 mm; lobes linear, yellowish brown villous. Pedicel ca. 1 cm. Flowers ca. 1 cm in diam. Sepals ovate-lanceolate to oblong-lanceolate, 6–8 mm, margin entire, apex acuminate, outer sepals gray tomentose marginally. Petals yellowish brown, elliptic, 5–7 × 4–5 mm, base shortly clawed, apex obtuse. Stamens many, shorter than petals; filaments glabrous. Pistils glabrous, longer than stamens. Fruit not seen. Fl. Apr–May.

- Mixed forests; medium elevations. Hainan.

153. *Rubus hypopitys* Focke, Notes Roy. Bot. Gard. Edinburgh 5: 72. 1911.

滇藏悬钩子 *dian zang xuan gou zi*

Subshrubs low, nearly creeping. Branchlets reddish brown, slender, villous when young, glabrescent, with sparse, minute needle-like prickles. Leaves simple; petiole reddish brown, 4–6 cm, sparsely villous, with needle-like prickles; stipules free, greenish brown, to 1 cm, palmatifid; lobes linear, villous; blade suborbicular, 5–10 cm in diam., both surfaces villous, more densely so abaxially, sometimes with sparse, needle-like prickles along veins, base cordate, margin 3–5-lobed; lobes coarsely obtusely serrate, apex obtuse or acute. Inflorescences terminal, short subracemes, few flowered, or flowers solitary in leaf axils; rachis and pedicels densely yellowish villous, with sparse, needle-like prickles; bracts greenish brown, less than 1 cm, palmatifid; lobes linear, villous. Pedicel 1.5–2.5 cm. Flowers 2–3 cm in diam. Calyx abaxially densely yellowish villous and tomentose, or with sparse prickles; sepals erect after anthesis, lanceolate or oblong-lanceolate, 1–1.4 cm × 5–8 mm, apex caudate, outer sepals irregularly lacinate above middle; lobes linear or lanceolate. Petals white or reddish, narrowly obovate, 0.9–1.3 cm × 7–10 mm, base slightly villous, shortly clawed. Stamens many, shorter than petals; filaments broader toward base. Pistils nearly as long as stamens, glabrous. Aggregate fruit red, subglobose, to 1 cm in diam., glabrous; pyrenes shallowly rugose. Fl. Jun–Jul, fr. Aug–Sep.

- Foothills, coniferous forests on slopes, thickets, forest margins; 2000–3000 m. S Xizang, W Yunnan.

- 1a. Plants without glandular hairs; leaf lobes obtuse 153a. var. *hypopitys*
- 1b. Plants with glandular hairs; leaf lobes acute 153b. var. *hanmiensis*

153a. *Rubus hypopitys* var. *hypopitys*

滇藏悬钩子(原变种) *dian zang xuan gou zi* (*yuan bian zhong*)

Rubus subumbellatus Cardot.

Plants without glandular hairs. Leaf lobes obtuse apically.

- Foothills, coniferous forests on slopes, thickets; 2000–3000 m. S Xizang, W Yunnan.

153b. *Rubus hypopitys* var. *hanmiensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 458. 1982.

汉密悬钩子 *han mi xuan gou zi*

Plants with glandular hairs. Leaf lobes acute apically.

- Forest margins; ca. 2200 m. SE Xizang.

154. *Rubus yiwuanus* W. P. Fang, Acta Phytotax. Sin. 2: 85. 1952.

奕武悬钩子 *yi wu xuan gou zi*

Shrubs 2–3 m tall. Branchlets brownish to reddish brown, gray tomentose initially, finally glabrous, unarmed. Leaves simple; petiole 2–3.5 cm, brown, gray tomentose when young, glabrate in age, unarmed; stipules caducous, free, brown, oblong-lanceolate, 2–4(–5) × 0.5–0.8 cm, tomentose when young, glabrescent, margin sharply serrate apically, or rarely lacinate; blade elliptic or ovate-elliptic, rarely suborbicular, 10–17 × 5–10 cm, palmately 5-veined, lateral veins 2–4 pairs, prominently raised abaxially, impressed adaxially, abaxially densely gray or yellowish gray tomentose, adaxially dark green, glabrous, base broadly cuneate to rounded, margin irregularly narrowly lobed above middle; lobes unevenly sharply serrate, apex caudate. Inflorescences terminal or axillary, terminal ones narrow cymose panicles, to 8 cm, axillary ones subracemes, to 2–3 cm, or flowers several in clusters in leaf axils; rachis and pedicels densely gray tomentose; bracts caducous, oblong-lanceolate, (1–)1.5–2(–3) cm, tomentose when young, later glabrate, margin lacinate apically, or entire. Pedicel 5–9 mm. Flowers ca. 1 cm in diam. Calyx abaxially densely gray tomentose; tube campanulate; sepals triangular or ovate-lanceolate, 6–9 × 3–5 mm, apex acute or shortly acuminate; outer sepals apically divided or serrate, inner sepals entire. Petals white, obovate, 7–9 × 3–4 mm, base clawed and slightly soft hairy, apex acute. Stamens many, shorter than petals; filaments short, broad, complanate. Pistils 30–50, longer than stamens, glabrous. Aggregate fruit reddish brown, subglobose, 7–9 mm in diam., glabrous. Fl. Jun–Jul, fr. Aug–Sep.

- Forest margins by river- and stream sides, shaded valleys; 1000–2200 m. C Sichuan (Emei Shan).

155. *Rubus stipulosus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 460. 1982.

巨托悬钩子 *ju tuo xuan gou zi*

Shrubs climbing. Branchlets dark brown, pubescent, with sparse, short prickles. Leaves simple; petiole 4–8 cm, pubescent, with minute prickles; stipules free, leaflike, broadly ovate or broadly narrowly ovate, 1.5–2 × 1–1.5 cm, palmately 5-veined, abaxially pubescent, margin lobed or serrate; blade suborbicular or broadly ovate, abaxially densely yellowish brown tomentose and pubescent along veins, adaxially glabrous or pubescent only along veins, base cordate, margin irregularly shallowly serrate, teeth abruptly pointed, 5–7-lobed; lobes triangular, terminal one largest, apex acute. Inflorescences terminal, subracemes, few flowered, or flowers in clusters in leaf axils, rarely flowers solitary; rachis and pedicels densely villous; bracts brown, broadly ovate or narrowly ovate, 1–1.8 × 0.9–1.6 cm, soft hairy, margin lobed or serrate above middle.

Pedicle 5–7 mm. Flowers 1–1.5 cm in diam. Calyx to 2 cm, abaxially densely villous; sepals ovate-lanceolate, apex acuminate, outer sepals usually lacinate apically; lobes lanceolate. Petals broadly ovate or suborbicular, glabrous, base shortly clawed, margin undulate or erose, apex abruptly pointed. Stamens many, much shorter than petals; filaments slightly broadened basally. Pistils 50–70 or more, much longer than stamens, glabrous. Fruit unknown. Fl. May–Jun.

• Rocky slopes, shaded places in forests; ca. 1200 m. EC Guangxi (Dayao Shan).

156. *Rubus irenaeus* Focke, Bot. Jahrb. Syst. 29: 394. 1900.

灰毛泡 hui mao pao

Shrubs 0.5–2 m tall, evergreen. Branchlets brownish, reddish brown, or grayish brown, densely gray tomentose-villous; flowering branches arising from rhizomes, sometimes with small prickles. Leaves alternate, simple; petiole 5–10 cm, densely tomentose-villous, unarmed or with sparse, small prickles; stipules leaflike, brownish, oblong, 2–3 × 1–2 cm, tomentose-villous, broader and incised-lacinate near apex; lobes lanceolate; blade suborbicular, 8–14 cm in diam., palmately 5-veined, veins yellowish brown and prominently raised abaxially, impressed adaxially, subleathery, abaxially densely gray or yellowish gray tomentose, with long hairs along veins, adaxially glabrous, base deeply cordate, margin undulate or lobed; lobes unevenly coarsely sharply serrate, apex obtuse or acute. Inflorescences terminal, corymbs or subracemes, (3–)4–6 cm, few flowered, sometimes flowers several in clusters or flowers solitary in leaf axils; rachis and pedicels densely tomentose-villous; bracts oblong, 1.5–2.5 × 1–1.5 cm, tomentose, margin or apex incised-lacinate. Pedicel 1–1.5 cm. Flowers 1.5–2 cm in diam. Calyx abaxially densely tomentose-villous; sepals reflexed in fruit, broadly ovate, 6–10 × (4–)5–7 mm, apex shortly acuminate; outer sepals with margin and apex lacinate; lobes linear-lanceolate, inner sepals entire. Petals white, suborbicular, 7–11 mm in diam., slightly longer than sepals, base clawed. Stamens many, shorter than petals; filaments linear, with slightly broad bases; anthers villous. Pistils 30–60, longer than stamens, glabrous. Aggregate fruit red, globose, 1–1.5 cm in diam., glabrous; pyrenes reticulate. Fl. May–Jun, fr. Aug–Sep.

• Forests, slopes, forest understories with rich humus; 500–1500 m. Chongqing, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang.

The fresh fruit are used for jam, candy, drinks, and wine. The roots and young plants are used in traditional Chinese medicine.

- 1a. Branchlets unarmed or with sparse, minute prickles; leaf margin undulate or inconspicuously lobed, lobes obtuse, rarely acute 156a. var. *irenaeus*
- 1b. Branchlets with more dense, minute prickles; leaf margin distinctly 3–5-lobed, lobes acute 156b. var. *innoxius*

156a. *Rubus irenaeus* var. *irenaeus*

灰毛泡(原变种) hui mao pao (yuan bian zhong)

Rubus jaminii H. Léveillé & Vaniot.

Branchlets unarmed or with sparse, minute prickles. Leaf margin undulate or inconspicuously lobed; lobes obtuse, rarely acute.

• Forested slopes, forest understories with rich humus; 500–1300 m. Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Sichuan, Yunnan, Zhejiang.

156b. *Rubus irenaeus* var. *innoxius* (Focke) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 37: 182. 1985.

尖裂灰毛泡 jian lie hui mao pao

Rubus innoxius Focke, Bot. Jahrb. Syst. 29: 395. 1900.

Branchlets with more dense, minute prickles. Leaf margin distinctly 3–5-lobed; lobes acute.

• Sandy slopes, forests; below 1500 m. Chongqing (Jinfo Shan).

157. *Rubus pacificus* Hance, J. Bot. 12: 259. 1874.

太平莓 tai ping mei

Shrubs 40–100 cm tall, evergreen. Branchlets brown or reddish brown, terete, slender, slightly arching, soft hairy, glabrate in age, with sparse, minute prickles. Leaves simple; petiole 4–8 cm, villous when young, glabrescent, with sparse, minute prickles; stipules brownish, oblong, to 2.5 cm, villous, broader and incised-lacinate near apex, lobes lanceolate; blade broadly ovate to narrowly ovate, 8–16 × 5–13 cm, palmately 5-veined, lateral veins 2 or 3 pairs, brownish, distinctly raised abaxially, impressed adaxially, leathery, abaxially densely gray tomentose, adaxially glabrous, base cordate, margin inconspicuously lobed, irregularly abruptly pointed sharply serrate, apex acuminate. Inflorescences terminal, short racemes or corymbose, 3–6-flowered, or flowers solitary in leaf axils; rachis and pedicels densely soft hairy; bracts oblong, to 1.8 cm, villous, apex lobed; lobes lanceolate. Pedicel 1–3 cm. Flowers 1.5–2 cm in diam. Calyx abaxially soft hairy; sepals reflexed in fruit, rarely erect, ovate to ovate-lanceolate, 0.9–1.4 cm × 5–8 mm, apex acuminate; outer sepals apically lacinate, inner sepals entire. Petals white, suborbicular, slightly longer than or nearly as long as sepals, base shortly clawed, apex slightly incised. Stamens shorter than petals; filaments broad, flat; anthers villous. Pistils numerous, somewhat longer than stamens. Aggregate fruit red, globose, 1.2–1.6 cm in diam., glabrous; pyrenes rugose. Fl. Jun–Jul, fr. Aug–Sep.

• Roadsides, mixed forests, mountainous areas; 300–1000 m. Anhui, Fujian, Hubei, Hunan, Jiangsu, Jiangxi, Zhejiang.

158. *Rubus crassifolius* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 460. 1982.

厚叶悬钩子 hou ye xuan gou zi

Shrubs scrambling or scandent, to 0.5 m tall. Branchlets dark brown, terete, densely yellowish brown sericeous-villous, unarmed. Leaves simple; petiole 2–3.5 cm, yellowish brown sericeous-villous; stipules free, brownish, suborbicular or broadly ovate, (1–)1.5–2 cm and ca. as broad, sparsely sericeous-villous, margin lacinate, lobes lanceolate; blade suborbicular, 3–7 cm in diam., palmately 5-veined, veins brownish, lateral veins 2 or 3 pairs, prominently raised abaxially, impressed adaxially, thickly leathery, abaxially densely sericeous-villous,

adaxially prominently rugulose, sparsely sericeous-villous, base cordate, margin somewhat undulate or 3–5-lobed; lobes shallowly obtusely serrate, apex obtuse, rarely acute. Inflorescences terminal or axillary, 1-flowered, rarely flowers in clusters of 2 or 3; bracts brownish, suborbicular or broadly ovate, smaller than stipules, with sparse, long silky hairs, margin lacinate; lobes lanceolate. Pedicel ca. 1 cm, yellowish brown sericeous-villous. Flowers 1.5–2 cm in diam. Calyx to 1.5 cm, abaxially yellowish brown sericeous-villous; sepals leaflike, ovate, outer sepals broader, deeply divided or deeply incised-serrate nearly above middle, inner sepals narrower, entire or sparsely serrate, apex acute. Petals broadly ovate, base shortly clawed, margin undulate, apex obtuse or emarginate. Stamens numerous, in 2 or 3 whorls, unequal in length, shorter than petals; filaments linear, slender. Pistils shorter than stamens; style and ovary glabrous. Aggregate fruit red, subglobose, glabrous, with many drupelets, enclosed in leaflike persistent calyx; pyrenes rugose. Fl. Jun–Jul, fr. Aug–Sep.

• Grasslands on mountain summits, margins of dense forests, rock crevices; 1600–2000 m. Guangdong, Guangxi, Hunan, Jiangxi.

159. *Rubus wangii* F. P. Metcalf, Lingnan Sci. J. 19: 35. 1940.

大苞悬钩子 da bao xuan gou zi

Shrubs scandent, to 5 m tall. Branchlets brownish to grayish brown, terete, initially gray tomentose, glabrescent, with sparse, curved minute prickles. Leaves alternate, simple; petiole 3–5 cm, grayish yellow tomentose, with sparse, curved minute prickles; stipules free, leaflike, brown, broadly to narrowly ovate, 2–3 × 1.5–2 cm, thinly tomentose when young, margin entire or sparsely shallowly thin serrate; blade suborbicular, 11–15 cm in diam., palmately 5-veined, veins prominent abaxially, both surfaces glabrous except soft hairy along veins, base cordate, margin lobed; lobes unevenly sharply serrate, apex acute or obtuse. Inflorescences terminal and axillary, terminal ones narrow panicles, 10–15 cm, many flowered, axillary ones subracemes, shorter; rachis and pedicels grayish yellow tomentose, subglabrescent; bracts in basal part of inflorescence broader, broadly ovate or elliptic, 2–2.8 × 1.5–2 cm, those in apical part of inflorescences narrower, elliptic to broadly linear, 1–1.5 × 0.6–1 cm, thinly tomentose, margin entire, shallowly serrate, or lobed apically. Pedicel 0.8–1.5 cm. Flowers ca. 1 cm in diam. Calyx to 1.4 cm, abaxially densely gray tomentose; sepals usually reflexed in fruit, ovate-lanceolate, 5–8 × 2.5–3.5 mm, margin entire, apex acute to shortly acuminate. Petals white, obovate, shorter than sepals. Stamens many, shorter than petals; filaments broad, complanate, glabrous. Pistils 25–50, slightly longer than stamens, glabrous. Aggregate fruit red, subglobose, not more than 1 cm in diam., glabrous; pyrenes rugulose. Fl. Jun–Jul, fr. Aug–Oct.

• Sunny rocky slopes, montane valleys, sparse forests; 900–1500 m. Guangdong, Guangxi.

160. *Rubus playfairianus* Hemsley ex Focke, Biblioth. Bot. 17(Heft 72): 45. 1910.

五叶鸡爪茶 wu ye ji zhao cha

Rubus cochinchinensis Trattinnick var. *stenophyllus* Franchet; *R. playfairianus* var. *stenophyllus* (Franchet) Cardot.

Shrubs climbing or scrambling, deciduous or semievergreen. Branchlets dark brown to blackish brown, initially tomentose, glabrescent, with sparse, curved minute prickles. Leaves palmately compound, 3–5-foliolate; petiole 2–4 cm, tomentose-villous, with sparse, curved small prickles, terminal leaflet sometimes very shortly petiolulate, lateral leaflets subsessile; stipules caducous, free, oblong, 8–11 mm, tomentose-villous, palmatipartite, lobes lanceolate or linear; blade of leaflets elliptic-lanceolate to oblong-lanceolate, 5–12 × 1–3 cm, terminal leaflet much larger than lateral leaflets, abaxially densely gray or yellowish gray appressed tomentose, adaxially glabrous, base cuneate, margin unevenly sharply serrate, lateral leaflets sometimes 2-lobed basally, apex acuminate. Inflorescences terminal or axillary, racemes, 6–9 cm, to 15 cm in fruit; rachis and pedicels gray or yellowish gray tomentose-villous, with few small prickles; bracts oblong, 6–9 mm, tomentose-villous, palmatipartite; lobes linear to lanceolate. Pedicel 1–2 cm. Flowers 1–1.5 cm in diam. Calyx abaxially densely yellowish gray to gray tomentose-villous; sepals ovate-lanceolate to triangular-lanceolate, 6–10 × 4–6 mm, margin entire, apex acuminate to caudate. Petals ovate, 6–8 × 4–6 mm, apex acute. Stamens many, slightly shorter than petals, soft hairy when young, glabrate in age; filaments not inflated. Pistils ca. 60, slightly longer than or nearly as long as stamens, villous. Aggregate fruit red when immature, black at maturity, subglobose, villous, with many drupelets; pyrenes prominently rugose. Fl. Apr–May, fr. Jun–Jul.

• Slopes, roadsides, stream sides, thickets; 300–2400 m. Guizhou, Hubei, Shaanxi, Sichuan, Yunnan.

161. *Rubus bambusarum* Focke, Hooker's Icon. Pl., ser. 3, 10: sub t. 1952. 1891.

竹叶鸡爪茶 zhu ye ji zhao cha

Rubus henryi Hemsley & Kuntze var. *bambusarum* (Focke) Rehder.

Shrubs scandent, evergreen. Branchlets reddish brown to grayish brown, terete, with slightly curved prickles, tomentose-villous when young, glabrescent, glabrous in age. Leaves palmately compound, 3–5-foliolate; petiole 2.5–5.5 cm, tomentose at first, gradually glabrescent, finally glabrous, leaflets subsessile; stipules early caducous, elliptic or ovate-lanceolate, 1–1.5 cm × 3–5 mm, submembranous, soft hairy, margin usually entire, apex acute to shortly acuminate; blade of leaflets narrowly lanceolate or narrowly elliptic, 7–13 × 1–3 cm; midvein brownish, raised abaxially, leathery, abaxially densely gray or yellowish gray tomentose, adaxially glabrous, base broadly cuneate, margin sparsely inconspicuously serrulate, apex acuminate. Inflorescences terminal or axillary, subracemes, 8–12 × 4–7 cm; rachis and pedicels gray or yellowish gray villous, with sparse, minute prickles, sometimes with intermixed glandular hairs; bracts ovate-lanceolate, 0.8–1.2 cm × 2–4 mm, membranous, soft hairy, margin entire or apically serrate. Pedicel to 1 cm. Calyx densely sericeous-villous; tube campanulate; sepals often reflexed in fruit, ovate-lanceolate or triangular-lanceolate, 7–10 × 3–5 mm, margin entire, apex acuminate to caudate. Flowers 1–2 cm in diam. Petals purplish red to reddish, obovate or broadly elliptic, 5–7 × 4–6 mm, basally puberulous. Stamens many, soft hairy. Pistils 25–40, slightly longer than stamens;

styles villous. Aggregate fruit red to reddish black, subglobose, with persistent villous styles. Fl. May–Jun, fr. Jul–Aug.

• Clearings on hills, forests; 1000–3000 m. Guizhou, Hubei, Shaanxi, Sichuan.

The young leaves are used for tea.

162. *Rubus henryi* Hemsley & Kuntze, J. Linn. Soc., Bot. 23: 231. 1887.

鸡爪茶 *ji zhao cha*

Shrubs climbing, to 6 m tall, evergreen. Branchlets brown or reddish brown, densely tomentose at first, subglabrescent, with sparse, slightly curved small prickles. Leaves simple; petiole 3–6 cm, slender, tomentose; stipules oblong or oblong-lanceolate, free, 1–1.8 cm × 3–7 mm, membranous, villous, margin entire or apically with 2 or 3 teeth, apex acuminate; blade 8–15 × 7–14 cm, leathery, abaxially densely gray or yellowish gray tomentose, sometimes with sparse, minute prickles on raised veins, adaxially lucid-green, glabrous, base broadly cuneate to subrounded or cordate, palmately 3–5-lobed; lobes lanceolate or narrowly oblong to ovate-lanceolate, 7–11 × 1.5–2.5 cm, margin with sparse, coarse or thin sharp serrations, apex acuminate. Inflorescences terminal or axillary, racemes, 7–12 cm, 9–20-flowered; rachis and pedicels densely gray or yellowish white tomentose and villous, with few minute needle-like prickles; bracts oblong or oblong-lanceolate, 1–1.5 cm × 4–7 mm, membranous, villous, margin entire or apically with few teeth, apex acuminate. Pedicel 5–10 mm. Calyx ca. 1.5 cm, gray or yellowish white tomentose and villous, sometimes with intermixed glandular hairs; sepals reflexed after anthesis, narrowly triangular, 6–10 × 3–5 mm, margin entire, apex acuminate to caudate. Petals reddish, narrowly ovate, 7–9 × 3–6 mm, both surfaces pilose, base shortly clawed, margin erose or minutely crenate, apex obtuse. Stamens many, nearly as long as petals, villous. Pistils slightly longer than stamens, villous. Aggregate fruit black, subglobose, 1.3–1.5 cm in diam.; persistent styles reddish, villous; pyrenes somewhat reticulate. Fl. May–Jun, fr. Jul–Aug.

• Slopes, mountainous areas, valleys, forests, thickets; below 2500 m. Guizhou, Hubei, Hunan, Sichuan.

The young leaves are used for tea.

- 1a. Leaf blades palmately 3–5-parted to 2/3 or more, lobes narrower, longer, lanceolate or narrowly oblong, base narrower, broadly cuneate to subrounded, rarely subcordate, margin with thin sharp serrations; calyx sometimes with glandular hairs abaxially 162a. var. *henryi*
- 1b. Leaf blades palmately 3–5-parted to 1/3–1/2, lobes broader, shorter, ovate-lanceolate, base broader, subcuneate to cordate, margin with coarse sharp serrations; calyx without glandular hairs abaxially 162b. var. *sozostylus*

162a. *Rubus henryi* var. *henryi*

鸡爪茶(原变种) *ji zhao cha* (*yuan bian zhong*)

Leaf blades palmately 3–5-parted to 2/3 or more, lobes

narrower, longer, lanceolate or narrowly oblong, base narrower, broadly cuneate to subrounded, rarely subcordate, margin with thin sharp serrations. Calyx abaxially sometimes with glandular hairs.

• Slopes, montane forests; below 2000 m. Hubei, Hunan.

162b. *Rubus henryi* var. *sozostylus* (Focke) T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 37: 185. 1985.

大叶鸡爪茶 *da ye ji zhao cha*

Rubus sozostylus Focke, Hooker's Icon. Pl., ser. 3, 10: sub t. 1952. 1891; *R. fargesii* Franchet; *R. sozostylus* var. *fargesii* (Franchet) Cardot.

Leaf blades palmately 3–5-parted to 1/3–1/2, lobes broader, shorter, ovate-lanceolate, base broader, subcuneate to cordate, margin with coarse sharp serrations. Calyx abaxially without glandular hairs.

• Mountainous areas, valleys, sparse forests, thickets; below 2500 m. Guizhou, Hubei, Hunan, Sichuan.

163. *Rubus huangpingensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 461. 1982.

黄平悬钩子 *huang ping xuan gou zi*

Shrubs climbing. Branchlets dark brown, tomentose at first, gradually glabrescent, finally glabrous, with sparse, curved minute prickles. Leaves simple; petiole 3–4 cm, tomentose, sometimes glabrescent; stipules free, oblong or oblong-lanceolate, 1–1.6 cm × 4–6 mm, membranous, glabrous or sparsely puberulous, usually lobed or with few teeth apically; blade 7–11 cm and ca. as broad, subleathery, abaxially densely pale rust colored tomentose, adaxially glabrous, base truncate to cordate, palmately 3-parted to 2/3; lobes elliptic or oblong, 3.5–8 × 2–4 cm, veins raised abaxially, slightly impressed adaxially, margin with uneven coarse sharp serrations, apex acuminate. Inflorescences terminal, racemes; rachis and pedicels densely pubescent, with sparse, intermixed stipitate glands and with small needle-like prickles; bracts oblong or oblong-lanceolate, smaller than stipules, glabrous or slightly puberulous, margin entire or slightly lobed or with few teeth, apex acuminate. Pedicel 1–1.4 cm. Calyx densely pubescent, with sparse, glandular hairs; sepals reflexed, rarely erect in fruit, narrowly triangular or triangular-lanceolate, margin entire, apex shortly acuminate. Stamens many; filaments linear, basally broad and flat. Pistils numerous, longer than stamens; style and ovary villous. Aggregate fruit red, compressed globose, 1–1.4 cm in diam.; persistent styles villous; pyrenes slightly reticulate. Fl. May–Jun, fr. Jul–Aug.

• Thickets at mountain summits. S. Guizhou.

164. *Rubus dunnii* F. P. Metcalf, Lingnan Sci. J. 19: 22. 1940.

闽粤悬钩子 *min yue xuan gou zi*

Shrubs scandent. Branchlets brown or grayish brown, terete, initially yellowish brown tomentose, glabrescent, with sparse, curved minute prickles. Leaves simple; petiole 1–2 cm, tomentose when young, glabrate in age, with sparse, short prickles; stipules caducous, ovate-lanceolate to narrowly elliptic

tic, 6–9 mm, tomentose, apex acuminate; blades broadly ovate, 5–10 × 3–6 cm, lateral veins 7–9 pairs, prominent abaxially, leathery, abaxially densely yellowish brown to rust colored tomentose, adaxially green brown, glabrous, base cordate, margin shallowly obtusely coarsely serrate, apex acuminate. Inflorescences terminal or axillary, racemes, 4–8 cm, few flowered; rachis, pedicels, and calyx yellowish white tomentose-villous, with sparse, needle-like prickles, with intermixed glandular hairs 1.5–2.5 cm; bracts narrowly elliptic or narrowly ovate-lanceolate, abaxially tomentose-villous, with intermixed glandular hairs, adaxially sparsely hairy, margin entire or lobed, apex acuminate. Pedicel 2–4 cm. Sepals erect after anthesis, lanceolate, 7–11 × 3–5(–7) mm, margin entire or 2-lobed, apex acuminate. Petals obovate, 7–10 × 4–6 mm, base tomentose, clawed, apex obtuse. Stamens many, shorter than petals; filaments broad, complanate, glabrous. Pistils much longer than stamens. Aggregate fruit red, subglobose, to 1.5 cm in diam., glabrous; pyrenes smooth or slightly rugose. Fl. Mar–Apr, fr. Jun–Jul.

- Slopes, roadsides, rocks, thickets. Fujian, Guangdong.

- 1a. Leaf blades tomentose abaxially, not glabrescent 164a. var. *dunnii*
- 1b. Leaf blades tomentose abaxially when young, glabrescent 164b. var. *glabrescens*

164a. *Rubus dunnii* var. *dunnii*

闽粤悬钩子(原变种) min yue xuan gou zi (yuan bian zhong)

Leaf blades tomentose abaxially, not glabrescent.

- Slopes, roadsides, rocks. Fujian, Guangdong.

164b. *Rubus dunnii* var. *glabrescens* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 461. 1982.

光叶闽粤悬钩子 guang ye min yue xuan gou zi

Leaf blades tomentose abaxially when young, gradually glabrescent.

- Thickets. S Fujian (Zhangzhou Shi).

165. *Rubus swinhoei* Hance, Ann. Sci. Nat. Bot., ser. 5, 5: 211. 1866.

木莓 mu mei

Rubus adenanthus Finet & Franchet; *R. adenotrichopodus* Hayata; *R. hupehensis* Oliver; *R. swinhoei* var. *hupehensis* (Oliver) F. P. Metcalf.

Shrubs scandent, 1–4 m tall, deciduous or semievergreen. Branchlets brown to purplish brown, terete, slender, shortly gray tomentose at first, glabrescent, with few to many curved prickles 1–3 mm. Leaves simple; petiole 5–10(–15) mm, gray tomentose, sometimes with curved minute prickles; stipules caducous, ovate-oblong to ovate-lanceolate, 5–8 × 3–4 mm, membranous, slightly hairy, margin entire or serrate apically; blade ovate to oblong-lanceolate, 5–11 × 2.5–5 cm, veins raised abaxially, slightly impressed adaxially, papery, abaxially gray tomentose, or subglabrous, hairs usually persistent on sterile branchlets, flowering and fruiting branchlets glabrate, with sparse, curved small prickles along midvein, adaxially glabrous except pubescent along midvein, base rounded or truncate to

shallowly cordate, margin unevenly serrate to doubly serrate, rarely incised, apex acuminate. Inflorescences terminal, short racemes, 5–8 cm, (1- or)5–7-flowered, or flowers several in clusters; rachis and pedicels tomentose-villous, with sparse, needle-like prickles, with intermixed purplish brown glandular hairs 1–3 mm; bracts caducous, ovate-lanceolate or lanceolate, 4–6 mm, sparsely villous, margin entire or serrate apically. Pedicel 1–3 cm. Flowers 1–1.5 cm in diam. Calyx abaxially gray tomentose-villous, with intermixed purplish brown glandular hairs 1–3 mm; sepals reflexed in fruit, ovate to triangular-ovate, 5–8 × 2.5–4.5 mm, margin entire, apex acute to shortly acuminate. Petals white, broadly obovate to suborbicular, 5–7 × 4–6 mm, both surfaces thinly pubescent, base shortly clawed, apex obtuse, undulate. Stamens many; filaments inflated basally, glabrous. Pistils much longer than stamens; style and ovary glabrous. Aggregate fruit purplish black at maturity, globose, 1–1.5 cm in diam., with many drupelets, glabrous; pyrenes distinctly rugose. Fl. May–Jun, fr. Jul–Aug. $2n = 28^*$.

Mixed forests, thickets, slopes, valleys, stream sides; 300–1500 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Sichuan, Taiwan, Zhejiang [Japan (Ryukyu Islands)].

166. *Rubus doyonensis* Handel-Mazzetti, Symb. Sin. 7: 487. 1933.

白薔 bai ru

Shrubs scandent. Branchlets brownish to dark reddish brown, initially grayish yellow tomentose, glabrescent, with sparse, curved minute prickles; flowering branchlets shortly stipitate glandular. Leaves simple; petiole 1–2 cm, grayish yellow tomentose-villous, glabrescent, with shortly stipitate glands; stipules oblong-lanceolate, 1–1.5 cm × 3–5 mm, membranous, pubescent, margin entire, apex acute or obtuse; blade ovate or broadly ovate to ovate-lanceolate, 6–9 × 4–6 cm; lateral veins 7–9 pairs, slightly raised abaxially, abaxially usually persistently densely gray tomentose, adaxially glabrous except slightly pubescent along midvein, base rounded or truncate to shallowly cordate, margin shallowly undulate, rarely inconspicuously lobed, with irregular minute sharp serrations, apex shortly acuminate to caudate. Inflorescences terminal, rarely axillary, narrow racemes, 6–10 cm, 6–15(–20) flowered; rachis and pedicels tomentose-villous, with shortly stalked glands 1–2 mm; bracts oblong-lanceolate, 0.8–1.4 cm × 3–4 mm, membranous, pubescent, margin entire, apex ± obtuse. Pedicel 1–1.5 cm. Calyx abaxially tomentose-villous, stipitate glandular; sepals often reflexed in fruit, lanceolate or triangular-lanceolate, 1–1.2 cm, margin entire, apex shortly caudate. Petals white, obovate or orbicular, nearly as long as sepals, slightly pubescent, base clawed. Stamens many, shorter than petals; filaments linear or with broad flat base, glabrous or slightly soft hairy only on anthers. Pistils many, slightly longer than stamens; style and ovary glabrous. Aggregate fruit black at maturity, subglobose, ca. 1.5 cm in diam.; pyrenes reticulate. Fl. May–Jul, fr. Aug–Sep.

- Mixed forests, valleys, ravines; 2000–3200 m. N Yunnan.

The seeds are widely used medicinally in Yunnan.

167. *Rubus hanceanus* Kuntze, Meth. Sp.-Besch. *Rubus*, 72. 1879.

华南悬钩子 hua nan xuan gou zi

Rubus fordii Hance; *R. hirtiflorus* Cardot; *R. prandianus* Handel-Mazzetti.

Shrubs lianoid or scandent, ca. 1 m tall. Branchlets brown or reddish brown, terete, densely gray tomentose, glabrescent, with sparse, curved minute prickles or stipitate glands. Leaves simple; petiole 1–2 cm, gray tomentose at first, gradually glabrescent, with sparse, minute prickles; stipules early caducous, free, oblong or elliptic, villous, stipitate glandular, margin entire or apically lacinate; blade broadly ovate, 6–11 × 4–8 cm; veins 5–7 pairs, prominent abaxially, somewhat impressed adaxially, not leathery, abaxially densely gray or yellowish gray tomentose, adaxially dark brown, glabrous except soft hairy along veins, base cordate, margin lobed, unevenly sharply serrate, apex acuminate. Inflorescences terminal, racemes, 6–9 cm, loosely few flowered; rachis and pedicels tomentose-villous, with stipitate glands 2–4 mm and sparse, needle-like prickles; bracts caducous, oblong or elliptic, 5–8 mm, membranous, villous, with sparse, intermixed stipitate glandular hairs, margin entire or apically lobed. Pedicel 1.5–2.5 cm. Flowers 1–1.5 cm in diam. Calyx abaxially densely tomentose-villous, with purplish brown long stalked glands and needle-like prickles; sepals erect, rarely reflexed in fruit, broadly ovate, 1–1.2 cm × 4–6 mm, margin entire, apex caudate. Petals broadly elliptic, 8–11 × 5–7 mm, soft hairy, base shortly clawed, apex obtuse. Stamens many, shorter than petals; filaments short, broad, complanate; anthers slightly villous. Pistils much longer than stamens; style and ovary glabrous. Aggregate fruit black, subglobose, 1–1.5 cm in diam., glabrous; drupelets subreniform or semiglobose; pyrenes somewhat rugose. Fl. Mar–May, fr. Jun–Jul.

• Sparse mixed forests in valleys, bamboo thickets, shaded rocky places; low elevations. Fujian, Guangdong, Guangxi, Hunan.

168. *Rubus gressittii* F. P. Metcalf, Lingnan Sci. J. 19: 25. 1940.

江西悬钩子 *jiang xi xuan gou zi*

Shrubs scandent, 1–3 m tall. Branchlets brownish to reddish brown, slender, gray or yellowish white tomentose when young, finally glabrate, with sparse, slightly curved small prickles. Leaves simple; petiole 1–1.5 cm, tomentose-villous; stipules caducous, lanceolate or ovate-lanceolate, 7–11 mm, soft hairy; blade lanceolate to elliptic-lanceolate, 5–9 × 2.5–4 cm, veins prominent abaxially, slightly impressed adaxially, abaxially densely rusty tomentose, adaxially glabrous, base rounded to truncate, rarely shallowly cordate, margin shallowly obtusely serrate, apex shortly acuminate. Inflorescences terminal or axillary, racemes, 4–8 cm, 4–9-flowered; rachis and pedicels yellowish tomentose-villous, shortly stipitate glandular, with sparse, needle-like prickles; bracts lanceolate to ovate-lanceolate, 5–8 mm, puberulous, without stipitate glands. Pedicel to 2.5 cm. Flowers 0.8–1.2 cm in diam. Calyx densely pale rusty tomentose, sparsely shortly stipitate glandular; sepals erect, rarely reflexed in fruit, ovate to triangular-ovate, 4–7 × 2–4 mm, margin entire, apex acute. Petals white, tinged yellow, ovate or suborbicular, 5–6 × 4.5–5.5 mm, both surfaces thinly pubescent basally, base shortly clawed, apex obtuse. Stamens many, shorter than petals; filaments broad, flat, glabrous. Pistils numerous, longer than stamens; style and ovary glabrous. Aggregate fruit dark red, globose, 8–10 mm in diam, glabrous,

with many drupelets; pyrenes distinctly rugose. Fl. Apr–May, fr. Jun–Jul.

• Thickets on slopes, forest margins, roadsides, grasslands; 500–1200 m. Guangdong, Hunan, Jiangxi.

169. *Rubus lichuanensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 462. 1982.

黎川悬钩子 *li chuan xuan gou zi*

Shrubs climbing, ca. 2 m tall. Branchlets dark brown; young shoots rust colored tomentose, glabrate in age, with sparse, curved prickles. Leaves simple; petiole 1.5–2 cm, rusty tomentose, glabrescent; stipules early caducous, lanceolate to oblong-lanceolate, tomentose-villous; blade ovate to ovate-lanceolate, 5–8 × 3–4 cm, abaxially densely rusty tomentose, adaxially pilose, base cordate, margin lobed or undulate, irregularly obtusely coarsely serrate to doubly serrate, apex acuminate. Inflorescences terminal or axillary, racemes, few flowered; rachis and pedicels rusty tomentose-villous, with short glandular hairs, with sparse, needle-like prickles; bracts caducous, lanceolate to oblong-lanceolate, smaller than stipules, tomentose-villous. Pedicel 2–3 cm. Flowers more than 1 cm in diam. Calyx abaxially densely rusty tomentose-villous; sepals erect, rarely reflexed in fruit, narrowly ovate to triangular-ovate, margin entire, apex acute. Stamens many; filaments broad, flat, glabrous. Pistils numerous. Aggregate fruit black, subglobose, 1–1.6 cm in diam., glabrous, with many drupelets; pyrenes prominently rugose. Fl. Apr–May, fr. Jun–Jul.

• Bamboo forests. E Jiangxi (Lichuan Xian).

170. *Rubus refractus* H. Léveillé, Repert. Spec. Nov. Regni Veg. 4: 332. 1907.

曲萼悬钩子 *qu e xuan gou zi*

Rubus refractus var. *latifolius* Cardot; *R. rocheri* H. Léveillé.

Shrubs scandent, to 3 m tall. Branchlets brown to blackish brown, villous, glabrescent, with curved minute prickles. Leaves simple; petiole 1.5–3 cm, gray or yellowish gray villous, with sparse, slightly curved prickles; stipules obovate, 7–10 × 5–7 mm, membranous, gray or yellowish gray villous, palmatipartite nearly to base; lobes linear to linear-lanceolate; blade narrowly ovate, 6–11 × 3–3.5 cm, abaxially densely gray or yellowish gray tomentose, with intermixed long hairs along veins, adaxially sparsely villous, base deeply cordate, margin lobed, often with 2–4 prominent lobes near base, with uneven coarse sharp serrations to doubly serrate, apex shortly acuminate. Inflorescences terminal and axillary, lax racemes; rachis and pedicels densely gray or yellowish gray villous, with sparse, glandular hairs, unarmed or with few needle-like prickles on pedicel; bracts obovate, 6–9 × 4–6 mm, villous, palmatipartite; lobes linear, margin with sparse, glandular hairs. Pedicel 1–2(–3) cm. Flowers 1–1.5(–2) cm in diam. Calyx densely gray to yellowish gray villous, with sparse, glandular hairs; sepals reflexed in fruit, triangular to ovate-triangular, 8–11 × 4–6 mm, margin entire, apex shortly acuminate. Petals white, broadly ovate to broadly elliptic, 7–10 × 5–8 mm, base shortly clawed, apex obtuse. Stamens many, shorter than petals; filaments broad, complanate, glabrous. Pistils numerous, much longer than stamens, glabrous. Fruit unknown. Fl. Mar–Apr.

- Mixed forests; below 2000 m. Guizhou, Yunnan.

171. *Rubus fujianensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 462. 1982.

福建悬钩子 fu jian xuan gou zi

Shrubs scandent, 2–4 m tall. Branchlets dark brown, terete, glabrous. Leaves simple; petiole 1–1.5 cm, initially rust colored tomentose, glabrescent; stipules caducous, oblong-lanceolate to ovate-lanceolate, 1–1.3 cm, appressed pubescent when young, glabrescent, margin usually entire; blade oblong to oblong-lanceolate, 13–17 × 2.5–4.5 cm, lateral veins 8–10 pairs, raised abaxially, slightly impressed adaxially, leathery, abaxially densely yellowish brown tomentose, adaxially glabrous, base rounded to truncate, margin entire basally, with sparse, shallow small serrations on apical 1/2, apex acuminate. Inflorescences terminal or axillary, short racemes; rachis and pedicels densely yellowish brown tomentose-villous and with needle-like prickles; bracts oblong-lanceolate or ovate-lanceolate, yellowish brown tomentose when young, glabrescent, margin usually entire. Pedicel 1.5–2.5 cm. Flowers to 2 cm in diam. Calyx abaxially yellowish brown tomentose-villous, with needle-like prickles; sepals usually erect in fruit, broadly lanceolate, 1–1.4 cm × 5–7 mm, apex shortly acuminate. Aggregate fruit red, subglobose, 1–1.2 cm in diam., glabrous; pyrenes rugose. Fl. Apr–May, fr. Jul.

- Slopes, mixed forests; ca. 1400 m. N Fujian (Chong'an Xian), Zhejiang.

172. *Rubus oblongus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 462. 1982.

长圆悬钩子 chang yuan xuan gou zi

Shrubs climbing. Branchlets grayish brown or brown, yellowish to grayish yellow tomentose, gradually glabrescent, with sparse, curved small prickles. Leaves simple; petiole 0.8–1.5 cm, yellowish or yellowish gray tomentose, glabrate in age, with sparse, curved minute prickles; stipules oblong-lanceolate, ca. 1 cm in diam., tomentose-villous when young, glabrescent, margin entire, rarely apically lobed; blade narrowly oblong or oblong-lanceolate, 10–15 × 1.5–3(–4) cm, lateral veins 8–11 pairs, prominent abaxially, leathery, abaxially densely yellowish tomentose, base broadly cuneate to rounded, margin with sparse, shallow sharp serrations, apex caudate. Inflorescences terminal and axillary, short racemes, axillary ones 3–4 cm, terminal ones longer; rachis and pedicels densely yellowish tomentose; bracts oblong-lanceolate, 5–9 mm, tomentose-villous, margin entire, rarely lobed. Pedicel 1–1.5 cm. Calyx abaxially densely tomentose-villous; sepals ovate-lanceolate or triangular-lanceolate, 6–9 mm, margin entire, apex acuminate to shortly caudate. Petals suborbicular, shorter than sepals, slightly pubescent basally, claws nearly absent. Stamens many; filaments broad, complanate, soft hairy or long hairy only on anthers. Pistils longer than stamens; style and ovary glabrous. Aggregate fruit red at maturity, subglobose, glabrous; pyrenes rugulose. Fl. May–Jun, fr. Jul–Aug.

- Dense forested slopes, thickets; 1700–2100 m. Guizhou, Yunnan.

173. *Rubus liui* Yuen P. Yang & S. Y. Lu, Quart. J. Chin. For. est. 9(2): 111. 1976.

柳氏悬钩子 liu shi xuan gou zi

Rubus ilanensis Y. C. Liu & F. Y. Lu.

Shrubs scandent. Branchlets brownish green, thinly floccose-tomentose at first, glabrescent, with short retrorse prickles. Leaves simple; petiole 1.5–3 cm, tomentose, with few prickles; stipules oblong-lanceolate, to 1 cm, margin villous, usually apically lacinate; blade oblong-lanceolate to lanceolate, 7–11 × 1.5–2.5 cm, lateral veins 7–9 pairs, midvein distinctly raised and abaxially with prickles, impressed adaxially, thickly papery, abaxially yellowish brown tomentose, adaxially dark, glabrous, base rounded, margin finely remotely serrate, apex acuminate. Inflorescences terminal or axillary, racemes, loosely 7–2-flowered; rachis and pedicels tomentose, prickly; bracts oblong-lanceolate, nearly as long as stipules, with few teeth along margin. Pedicel 1–1.9 cm. Calyx abaxially tomentose; tube cupular; sepals narrowly triangular, 3–4 × 2–3 mm, apex cuspidate. Petals pink, rhombic-orbicular to obovate, 2–3 mm, hairy, apex mucronate. Stamens numerous, shorter than petals; filaments sparsely hairy; anthers with few hairs at apex of connectives. Pistils longer than stamens; styles to 8 mm, hairy; ovaries hairy apically. Aggregate fruit reddish to red at maturity, globose, 8–10 mm in diam., with persistent styles; drupelets reniform, hairy apically. Fl. May–Aug, fr. Jun–Sep. $2n = 28^*$.

- Forests; 1400–1600 m. NE Taiwan.

174. *Rubus caudifolius* Wuzhi, Fl. Hupeh. 2: 188. 1979.

尾叶悬钩子 wei ye xuan gou zi

Shrubs scandent. Branchlets densely grayish yellow to gray tomentose, glabrescent, with sparse, short curved prickles. Leaves simple; petiole 1.5–2.5 cm, grayish yellow to gray tomentose; stipules late caducous, oblong-lanceolate, 1–1.5 cm, membranous, tomentose when young, gradually glabrescent, margin entire, rarely lobed apically; blade oblong-lanceolate to ovate-lanceolate, 7–14 × 3–5 cm, veins 5–8 pairs, raised abaxially, slightly impressed adaxially, leathery, abaxially densely rusty tomentellate, adaxially glabrous, base rounded, margin with shallow minute serrations or coarsely serrate on vegetative branchlets, apex caudate. Inflorescences terminal or axillary, racemes, 8–14 cm; rachis and pedicels densely grayish yellow tomentose-villous; bracts caducous, oblong-lanceolate, 1–1.4 cm, tomentose-villous when young, margin entire, rarely lobed. Pedicel 1–1.5 cm. Flowers 1–1.5 cm in diam. Calyx purplish red, abaxially densely grayish yellow tomentose-villous; tube shallowly cupular; sepals triangular-ovate to triangular-lanceolate, margin entire, apex shortly caudate. Petals red, oblong, slightly shorter than sepals, both surfaces puberulous. Stamens many, slightly pubescent or only anthers sparsely villous. Pistils longer than stamens; styles villous. Aggregate fruit red when immature, black at maturity, compressed globose, glabrous; pyrenes rugose. Fl. May–Jun, fr. Jul–Aug.

- Forested slopes, roadsides, thickets; 800–2200 m. Fujian, Guangxi, Guizhou, Hubei, Hunan, Zhejiang.

175. *Rubus hemithyrus* Handel-Mazzetti, Symb. Sin. 7: 488. 1933.

半锥莓 ban zhui mei

Shrubs scandent, 2–3 m tall. Branchlets brown to grayish brown, terete, tomentose-villous when young, gradually glabrescent, with sparse, curved minute prickles. Leaves simple; petiole ca. 1 cm, tomentose-villous, with sparse, curved small prickles; stipules early caducous, free, brown, ovate-lanceolate, 7–8 mm, membranous, tomentose-villous; blade oblong-ovate, 6–12 × 4–6 cm, lateral veins 8–10 pairs, raised and purplish abaxially, slightly impressed adaxially, papery, abaxially densely gray tomentose, adaxially dark green, glabrous or slightly villous along veins, base subtruncate to shallowly cordate, margin with dense coarse abruptly sharp serrations, apex shortly acuminate. Inflorescences terminal and axillary, racemes, 6–10 cm, few flowered, axillary ones shorter, flowers sometimes several in clusters in leaf axils; rachis and pedicels densely tomentose-villous; bracts brown, ovate-lanceolate, 7–10(–12) mm, subglabrous, margin entire or with few teeth apically. Pedicel 1.5–3.5 cm. Calyx abaxially densely tomentose-villous; tube 6–7 mm in diam.; sepals narrowly ovate or ovate-triangular, 8–11 × 4–6 mm, apex of outer sepals shortly acuminate, lacinate, inner sepals mucronate, entire. Petals white, broadly obovate, 7–9 × 5–7 mm, both surfaces thinly pubescent, base clawed, margin undulate. Stamens many; filaments ca. 5 mm, glabrous; anthers few barbed. Pistils many, glabrous; ovary glabrous; styles ca. 7 mm, slender. Aggregate fruit red. Fl. and fr. summer.

- Forests; 1700–3000 m. W Yunnan.

176. *Rubus preptanthus* Focke, *Biblioth. Bot.* 17(Heft 72): 42. 1910.

早花悬钩子 *zao hua xuan gou zi*

Shrubs scandent. Branchlets brownish to grayish brown, gray tomentose when young, gradually glabrescent, with sparse, curved minute prickles or nearly unarmed. Leaves simple; petiole (0.3–)1–2 cm, tomentose, usually unarmed; stipules caducous, lanceolate or linear-lanceolate, 0.8–1.4 cm × 2.5–5 mm, membranous, appressed villous; blade oblong-ovate or broadly ovate-lanceolate to narrowly lanceolate, 6–12 × (1–)3–5.5 cm, lateral veins 6–9 pairs, prominent abaxially, papery, abaxially densely gray to yellowish gray appressed tomentose, adaxially glabrous, base rounded to subtruncate, margin unevenly incised coarsely sharply serrate or sparsely so, rarely doubly serrate, apex acuminate. Inflorescences terminal, racemes, 4–8 cm, several to more than 10-flowered; rachis and pedicels densely gray to yellowish gray tomentose-villous; bracts caducous, lanceolate to linear-lanceolate, 0.8–1.2 cm × 2–4 mm, membranous, villous. Pedicel 7–10 mm. Calyx abaxially densely gray to yellowish gray tomentose-villous; tube pelviform; sepals triangular-ovate to lanceolate, 8–10 × 3–5 mm, margin entire, apex acuminate. Petals white, obovate, 5–7 × 4–6 mm, both surfaces puberulous. Stamens many, shorter than sepals, glabrous or hairy when young, or only anthers slightly villous; filaments inflated at base. Pistils slightly longer than or nearly as long as stamens; ovary glabrous; style glabrous. Aggregate fruit purplish black at maturity, semiglobose, 8–10 mm in diam., glabrous; pyrenes slightly rugose. Fl. May–Jun, fr. Jul–Aug.

- Forests, bamboo forest margins, thickets, gravelly slopes; 1000–3100 m. Sichuan, Yunnan.

- 1a. Leaf blade oblong-ovate or broadly ovate-lanceolate, 3–5.5 cm wide, margin with dense serrations; petiole 10–20 mm 176a. var. *preptanthus*
- 1b. Leaf blade narrowly lanceolate, 1–2 cm wide, margin with sparse serrations; petiole 3–5 mm 176b. var. *mairei*

176a. *Rubus preptanthus* var. *preptanthus*

早花悬钩子(原变种) *zao hua xuan gou zi* (yuan bian zhong)

Leaf blade oblong-ovate or broadly ovate-lanceolate, 3–5.5 cm wide, margin with dense serrations; petiole 1–2 cm.

- Bamboo forest margins, thickets; 1000–2800 m. Sichuan, Yunnan.

176b. *Rubus preptanthus* var. *mairei* (H. Léveillé) T. T. Yu & L. T. Lu, *Fl. Reipubl. Popularis Sin.* 37: 194. 1985.

狭叶早花悬钩子 *xia ye zao hua xuan gou zi*

Rubus mairei H. Léveillé, *Bull. Acad. Int. Géogr. Bot.* 22: 232. 1912, not H. Léveillé (1913).

Leaf blades narrowly lanceolate, 1–2 cm wide, margin with sparse serrations; petiole 3–5 mm.

- Forests, thickets, gravelly slopes; ca. 3100 m. Sichuan, Yunnan.

177. *Rubus malifolius* Focke, *Hooker's Icon. Pl.*, ser. 3, 10: t. 1947. 1891.

棠叶悬钩子 *tang ye xuan gou zi*

Shrubs scandent, 1.5–3.5 m tall. Branchlets brown to purplish brown, soft hairy when young, glabrate in age, with sparse, somewhat curved prickles. Leaves simple; petiole (0.6–)1–1.5 cm, tomentose-villous at first, later glabrate, sometimes with few small needle-like prickles; stipules caducous, brownish, linear-oblong to ovate-lanceolate, 0.8–1.4 cm, membranous, appressed pubescent when young; blade elliptic or oblong-elliptic, 5–12 × 2.5–5 cm, lateral veins 8–10 pairs, prominent abaxially, abaxially gray appressed tomentose, hairs persistent, but deciduous on fruiting branchlets, adaxially glabrous or pilose along veins, base subrounded, margin inconspicuously shallowly serrate or coarsely serrate, apex acuminate, rarely acute. Inflorescences terminal, racemes, 5–10 cm; rachis and pedicel densely tomentose-villous, gradually glabrescent, finally glabrous; bracts caducous, linear-oblong, 7–11 mm, pubescent initially, apex acute to shortly acuminate. Pedicel 1–1.5 cm. Flowers to 2.5 cm in diam. Calyx abaxially densely tomentose-villous; tube pelviform; sepals ovate to triangular-ovate or lanceolate, 8–12(–25) × 3–6 mm, margin entire, apex acuminate. Petals white or white with pink spots, obovate to suborbicular, 0.8–1.2 cm × 7–10 mm, both surfaces thinly pubescent, base shortly clawed. Stamens many; filaments subulate, broadened basally, slightly villous; anthers hirtose. Pistils much longer than stamens; ovary glabrous; styles glabrous, apex clavate. Aggregate fruit purplish black at maturity, compressed globose, glabrous, with many drupelets; pyrenes slightly rugose or somewhat smooth. Fl. May–Jun, fr. Jul–Aug.

- Slopes, ravines, stream sides, montane valleys, forests, thickets;

400–2200 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan.

- 1a. Sepals ovate to triangular-ovate, 8–12(–14) mm 177a. var. *malifolius*
1b. Sepals lanceolate or ovate-lanceolate, to 25 mm 177b. var. *longisepalus*

177a. *Rubus malifolius* var. *malifolius*

棠叶悬钩子(原变种) tang ye xuan gou zi (yuan bian zhong)

Rubus arbor H. Léveillé & Vaniot; *R. limprichtii* Pax & K. Hoffmann.

Sepals ovate to triangular-ovate, 0.8–1.2(–1.4) cm.

• Slopes, ravines, mixed forests, thickets; 400–2200 m. Guangdong, Guangxi, Guizhou, Hubei, Hunan, Sichuan, Yunnan.

177b. *Rubus malifolius* var. *longisepalus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 463. 1982.

长萼棠叶悬钩子 chang e tang ye xuan gou zi

Sepals lanceolate or ovate-lanceolate, to 2.5 cm.

• Stream sides, montane valleys, forests; low elevations. N Guangxi (Longsheng Xian, Rongshui Xian, Xing'an Xian).

178. *Rubus kawakamii* Hayata, J. Coll. Sci. Imp. Univ. Tokyo 30(1): 91. 1911.

桑叶悬钩子 sang ye xuan gou zi

Shrubs erect, to 1.5 m tall. Branchlets brownish to reddish brown, terete, tomentose-villous when young, later glabrate, with few small prickles. Leaves simple; petiole 1–2 cm, slender, tomentose-villous when young, glabrate in age, unarmed or with sparse, small prickles; stipules caducous, oblong, 6–10 × 2–4 mm, soft hairy, margin entire or with a few teeth; blade oblong or ovate-oblong, 6–10 × 2.5–5 cm, lateral veins 7–10 pairs, midvein and veins raised abaxially, slightly impressed adaxially, papery, abaxially slightly tomentose-villous along veins, glabrate in age, adaxially glabrous but hirsute along midvein, base broadly cuneate to subcordate, margin undivided, unevenly sharply serrate, apex long acuminate. Inflorescences terminal, corymbose racemes, 3–6 cm, 5–9-flowered; rachis and pedicels tomentose-villous, with small prickles, with few to many shortly stalked glands; bracts narrowly oblong to ovate, 6–9 × 2–4 mm, soft hairy, margin apically divided or with few teeth along margin. Pedicel 1.5–2.5 cm. Flowers 1–1.5 cm in diam. Calyx campanulate, abaxially tomentose, unarmed or with sparse, minute needle-like prickles, sometimes with shortly stalked glands; sepals erect-spreading after anthesis, triangular-ovate, 5–8 × 2–3 mm, margin usually undivided, apex acute. Petals obovate, 5–7 × 5–6 mm, both surfaces soft hairy, base shortly clawed. Stamens numerous, shorter than petals; filaments linear, broadened and flattened basally. Pistils slightly shorter than or nearly as long as stamens; style and ovary glabrous. Aggregate fruit subglobose, 7–10 mm, glabrous; pyrenes reniform, smooth or somewhat shallowly rugose. Fl. Jun–Jul, fr. Aug–Sep. $2n = 28^*$.

• Mountains; 2000–2800 m. C Taiwan.

179. *Rubus wardii* Merrill, Brittonia 4: 84. 1941.

大花悬钩子 da hua xuan gou zi

Rubus gigantiflorus H. Hara; *R. gigantiflorus* var. *chiliocanthus* Handel-Mazzetti; *R. gigantiflorus* var. *pluvialis* Handel-Mazzetti; *R. hookeri* Focke; *R. macrocarpus* King ex C. B. Clarke (1876), not Bentham (1844), nor Gardner (1847).

Shrubs or subshrubs, prostrate, low, ca. 80 cm tall. Branchlets brown or reddish brown, terete, with soft hairs, glandular hairs, and sparse, needle-like or small curved prickles. Leaves compound, 3-foliolate; petiole 4–6 cm, petiolule of terminal leaflet to 1 cm, lateral leaflets shortly petiolulate, with sparse, soft hairs, intermixed glandular hairs and needle-like prickles; stipules free, brown, 8–10 mm, palmatipartite to middle or base; lobes linear-lanceolate, soft hairy, with glandular hairs; blade of leaflets variable, terminal one rhombic-ovate, 6–10 × 4–6 cm, base cuneate, apex acuminate to caudate, lateral leaflets suborbicular or ovate, ca. 1/2 as long and wide as terminal one or smaller, both surfaces soft hairy along veins, abaxially with minute prickles along veins, base obliquely rounded, margin sometimes lobed, unevenly obtusely serrate, apex acute or obtuse. Inflorescences terminal, 1-flowered, rarely flowers in clusters of 2 or 3; bracts 7–9 mm, palmatipartite; lobes linear to linear-lanceolate, with glandular hairs and soft hairs. Pedicel 3–4 cm, with soft hairs, glandular hairs, and needle-like prickles. Flowers 3–4 cm in diam. Calyx abaxially with sparse, soft hairs, glandular hairs, and needle-like prickles; sepals erect, triangular-ovate, 1.5–2(–2.5) cm × 5–8 mm, apex caudate; outer sepals usually apically lacinate; lobes linear, inner sepals sometimes entire. Petals greenish white, suborbicular or obovate, 7–9 mm in diam., much shorter than sepals. Stamens many, much shorter than petals; anthers oblong. Pistils numerous, densely glomerate; ovary densely tomentose-villous. Aggregate fruit somewhat green at maturity, globose, 1.3–2(–2.5) cm in diam., densely brownish yellow tomentose-villous, outer drupelets dry, inner drupelets fleshy; pyrenes furrowed-rugose. Fl. Jun–Jul, fr. Aug–Sep.

Mixed forests, valleys, rocky slopes; 1800–3000 m. SE Xizang, NW Yunnan [Bhutan, N Myanmar, Sikkim].

180. *Rubus metoensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 18: 498. 1980.

墨脱悬钩子 mo tuo xuan gou zi

Shrubs small. Branchlets arching, reddish brown, terete, with soft hairs and needle-like prickles. Leaves compound, 3-foliolate, sometimes simple at apex of flowering branchlets; petiole 2–3.5 cm, terminal leaflet shortly petiolulate, lateral leaflets subsessile, with soft hairs and needle-like prickles; stipules free, deeply lobed; lobes linear-lanceolate, soft hairy; blade of leaflets 3.5–7 × 2–4.5 cm, lateral veins 5–7 pairs, slightly raised abaxially, terminal one rhombic-ovate, apex shortly acuminate, lateral leaflets ovate or elliptic, apex acute, abaxially pubescent and with needle-like prickles along veins, adaxially sparsely appressed pubescent, base cuneate to rounded, margin unevenly coarsely obtusely serrate. Inflorescences axillary, usually 1-flowered in leaf axils; bracts smaller than stipules, deeply lobed; lobes linear-lanceolate, soft hairy. Pedicel ca. 1 cm, pu-

bescent, with needle-like prickles. Flowers 1–1.5 cm in diam. Calyx purplish brown, abaxially sparsely pubescent; tube abaxially with sparse, needle-like prickles; sepals triangular-lanceolate, apex caudate and with 3 linear lobes, outer sepals sometimes entire. Stamens many; filaments linear or slightly broader basally. Pistils few, shorter than stamens; ovary gray tomentose. Fruit not seen. Fl. Jul–Aug.

- Mixed forests, thickets; ca. 2500 m. SE Xizang (Médog Xian).

181. *Rubus jambosoides* Hance, Ann. Sci. Nat. Bot., ser. 4, 15: 222. 1861.

蒲桃叶悬钩子 pu tao ye xuan gou zi

Shrubs scandent, 1–3 m tall. Branchlets brownish or grayish brown, terete, glabrous, with sparse, curved prickles. Leaves simple; petiole robust, 5–10 mm, glabrous; stipules early caducous, ovate or elliptic, glabrous; blade lanceolate, 8–12 × 1.5–3 cm, veins obscure, lateral veins 6–8 pairs, leathery, both surfaces glabrous, abaxially with sparse, curved prickles along midvein, base rounded or subtruncate, margin subentire or with sparse, smaller teeth, apex caudate. Inflorescences axillary, 1-flowered; bracts ovate or elliptic, glabrous, margin entire. Pedicel 5–10 mm, glabrous. Flowers 1–1.8 cm in diam. Calyx greenish red, abaxially glabrous; sepals triangular-lanceolate, 7–11 mm, outer sepals with gray tomentose margin, apex acuminate. Petals white, oblong, longer than sepals, base clawed,

apex obtuse. Stamens shorter than petals; filaments purplish red, broad, complanate. Pistils 50–70 or slightly more, slightly shorter than or nearly as long as stamens; ovary and base of style densely finely pubescent. Aggregate fruit red, ovoid-globose, ca. 1 cm in diam., densely finely gray pubescent; pyrenes smooth or slightly rugulose. Fl. Feb–Mar, fr. Apr–May.

- Roadsides on mountains, ravines; low elevations. Fujian, Guangdong, Hunan.

182. *Rubus lohfauiensis* F. P. Metcalf, Lingnan Sci. J. 19: 29. 1940.

罗浮山悬钩子 luo fu shan xuan gou zi

Shrubs scandent. Branchlets terete, yellowish tomentose, nearly unarmed. Leaves simple; petiole 2–2.5 cm, tomentose; stipules caducous; blade lanceolate, 9–12 × 3–4 cm, lateral veins 8 or 9 pairs, abaxially whitish tomentose, adaxially remotely papillose-pilose, minutely glandular, base deeply cordate to subauriculate, margin aristate-serrate, apex acuminate. Inflorescences 1-flowered, axillary, or terminal at apex of small reduced branchlets. Pedicel ca. 1 cm, tomentose. Calyx abaxially tomentose; sepals ovate. Petals obovoid to oblong, strigose. Aggregate fruit subglobose, ca. 1 cm in diam., with few large drupelets, glabrous. Fl. and fr. Aug.

- Cliffs. Guangdong (Luofu Shan).

This species is incompletely known.

5. *Rubus* sect. *Dalibardastrum* (Focke) T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 463. 1982.

刺毛莓组 ci mao mei zu

Rubus subgen. *Dalibardastrum* Focke, Biblioth. Bot. 17(Heft 72): 39. 1910.

Shrubs or subshrubs, usually densely bristly, less often with needle-like or small prickles. Leaves simple; stipules persistent or caducous, free, on stem near base of petiole, broad, divided. Flowers bisexual, usually in cymose panicles or short subracemes or several in clusters or solitary. Aggregate fruit adnate to torus, falling from base of torus at maturity, not hollow.

Eleven species (ten endemic) in China.

- 1a. Terminal inflorescences large broad cymose panicles with numerous flowers.
 - 2a. Leaves glabrous abaxially, ovate-lanceolate or elliptic-lanceolate, not divided; flowers with petals 185. *R. wuzhianus*
 - 2b. Leaves tomentose or pubescent abaxially, narrowly ovate or suborbicular; flowers with or without petals.
 - 3a. Leaves narrowly ovate, abaxially tomentose, margin undivided or slightly undulate; flowers usually apetalous 183. *R. jinshoshanensis*
 - 3b. Leaves suborbicular, abaxially pubescent, margin 3–5-lobed, lobes triangular; flowers with petals 184. *R. lobatus*
- 1b. Terminal inflorescences subracemes with few flowers or flowers several in clusters or solitary.
 - 4a. Leaves abaxially tomentose.
 - 5a. Leaves 3–5-lobed, suborbicular or broadly ovate, deciduously tomentose, but hairs persistent abaxially in age; stipules broader, 1–1.5 cm, palmately parted 188. *R. tsangorum*
 - 5b. Leaves undivided or lobed, abaxially persistent tomentose; stipules narrowly ovate to ovate-lanceolate, 1.5–2 cm, margin pinnately laciniate lobed.
 - 6a. Leaves ovate to oblong, bristly on both surfaces, not divided or somewhat undulate, coarsely sharply serrate; stipules tomentose, villous; flowers 2–3 cm in diam. 186. *R. tricolor*
 - 6b. Leaves suborbicular to ovate, bristly only abaxially, margin 3–5-lobed, sharply serrulate; stipules tomentose; flowers 1–2 cm in diam. 187. *R. multisetosus*
 - 4b. Leaves abaxially pubescent or subglabrous.
 - 7a. Flowers solitary or in clusters of 2–4, terminal or axillary; leaves broadly ovate, undivided, rarely lobed; outer sepals usually not lobed.
 - 8a. Plants with stalked glands; leaves acute to acuminate apically, both surfaces glabrous or nearly so; pedicel 2–4 cm; sepals triangular-lanceolate, 0.8–1.4 cm 192. *R. ourosepalus*
 - 8b. Plants without stalked glands; leaves obtuse, rarely acute apically, both surfaces sparsely villous; pedicel 5–10 mm; sepals broadly ovate, 7–8 mm 193. *R. polyodontus*

- 7b. Flowers 4–12 in terminal subracemes or several in clusters; leaves suborbicular or broadly narrowly ovate, lobed; outer sepals usually divided.
- 9a. Leaves broadly narrowly ovate, terminal lobe several × as long as lateral lobes, apically shortly acuminate, rarely acute, lateral lobes obtuse; flowers 1–1.5 cm in diam.; stipules deeply laciniate; sepals narrowly lanceolate; outer sepals 2- or 3-lacinate 191. *R. amphidasys*
- 9b. Leaves orbicular or suborbicular, terminal lobe slightly longer than or as long as lateral lobes, acute, obtuse, or rounded; flowers 1.5–2(–2.5) cm in diam.; stipules palmately parted to middle or nearly to base; sepals narrowly ovate, narrowly ovate-lanceolate, or broadly ovate-lanceolate to oblong-ovate; outer sepals leaflike, lacinate, pinnately divided, or dissected apically.
- 10a. Leaves 3–5-lobed, terminal lobe acute apically, lateral lobes obtuse, rarely acute, margin coarsely serrate; stipules palmatipartite nearly to base; sepals narrowly ovate or narrowly ovate-lanceolate; outer sepals leaflike, lacinate or pinnately divided 189. *R. treutleri*
- 10b. Leaves 5(–7)-lobed, lobes obtuse to rounded apically, margin sharply serrate; stipules palmatipartite to middle or ca. 1/3 their length; sepals broadly ovate-lanceolate to oblong-ovate; outer sepals dissected apically 190. *R. fanjingshanensis*

183. *Rubus jinshoshanensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 463. 1982.

金佛山悬钩子 *jin fo shan xuan gou zi*

Shrubs scandent, 2–5 m tall. Branchlets brownish to dark brown, tomentose, bristly, bristles purplish red, sometimes with intermixed glandular hairs. Leaves simple; petiole 2–3.5 cm, tomentose, bristly, bristles purplish red, or with intermixed glandular hairs; stipules caducous, free, lanceolate or ovate-lanceolate, 7–11 mm, margin lacinate, tomentose, bristly; blade narrowly ovate, 8–12 × 5–9 cm, veins yellowish brown, raised abaxially, adaxially densely yellowish gray tomentose, bristly along midvein, adaxially glabrous or soft hairy only along veins, base cordate, margin unevenly coarsely sharply serrate, undivided or slightly undulate, apex shortly acuminate. Inflorescences terminal or axillary, terminal ones cymose panicles, to 24 cm, many flowered, axillary ones smaller; rachis and pedicels bristly, bristles purplish red, tomentose or with glandular hairs; bracts lanceolate, 5–9 mm, margin shallowly lacinate, tomentose, bristly. Pedicel 5–8 mm. Flowers 1–1.5 cm in diam. Petals usually absent. Sepals lanceolate or ovate-lanceolate, 6–9 × 2–4 mm, both surfaces yellowish gray tomentose, margin entire, apex acuminate. Stamens many, shorter than sepals; filaments linear. Pistils less than 20, slightly shorter than or nearly as long as stamens; ovary glabrous. Fruit unknown. Fl. Jun–Jul.

• Rocky slopes, forest margins; 1600–2100 m. Chongqing (Jinfo Shan), SE Yunnan (Hekou Xian).

184. *Rubus lobatus* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 20: 464. 1982.

五裂悬钩子 *wu lie xuan gou zi*

Shrubs scandent, 1–2 m tall. Branchlets brownish, terete, densely villous, bristly, unevenly glandular hairy, with sparse, small basally broad prickles. Leaves simple; petiole 4–8 cm, with reddish purple glandular hairs, bristly, villous; stipules caducous, free, brown, 1–1.5 cm, villous, with glandular hairs, palmatipartite; lobes lanceolate or linear-lanceolate; blade suborbicular, 10–20 cm in diam. and ca. as long, palmately 5-veined, lateral veins 4 or 5 pairs, both surfaces soft hairy, with reddish brown glandular hairs and bristles along veins, base cordate, margin 3–5-lobed; lobes triangular, terminal lobe slightly larger than lateral lobes, irregularly sharply serrate,

apex acute to shortly acuminate. Inflorescences terminal or axillary, terminal ones cymose panicles, large, to 20 cm, axillary ones narrow panicles or subracemes, shorter; rachis, pedicels, and abaxial surface of calyx with dense reddish brown glandular hairs, bristles and long hairs; bracts 1–1.4 cm, villous, with glandular hairs, palmatipartite; lobes lanceolate or linear-lanceolate. Pedicel 0.8–1.5 cm. Flowers 1–1.5 cm in diam. Sepals erect in fruit, narrowly lanceolate, 1–1.5 cm, margin slightly tomentose, apex caudate, outer sepals often shallowly lacinate; lobes linear. Petals white, broadly obovate, shorter than sepals, base clawed. Stamens many; filaments linear; anthers villous. Ovary glabrous; styles longer than stamens. Aggregate fruit subglobose, red, ca. 1 cm in diam., glabrous, enclosed in calyx; pyrenes slightly rugose. Fl. Jun–Jul, fr. Aug–Sep.

• Roadsides in mountains, valleys, thickets; low to medium elevations. Guangdong, Guangxi.

185. *Rubus wuzhianus* L. T. Lu & Boufford, **nom. nov.**

锯叶悬钩子 *ju ye xuan gou zi*

Replaced synonym: *Rubus serrulatus* Wuzhi, Fl. Hupeh. 2: 192. 1979, not Foerster (1878), nor Lindeberg ex Areschoug (1886); *R. serratifolius* T. T. Yu & L. T. Lu (1985), not P. J. Müller & Lefèvre (1859).

Shrubs scrambling, lianoid. Branchlets purplish brown, terete, with dense purplish red long bristles and stalked glands, with sparse, hooked minute prickles. Leaves simple; petiole 1–2 cm, with dense purplish red long bristles and with sparse, small prickles; stipules caducous, free, brown, oblong, 1–1.8 cm, apex entire or with few teeth; blade ovate-lanceolate or elliptic-lanceolate, 12–17 × 5–9 cm, lateral veins 7–9 pairs, both surfaces glabrous, abaxially with minute hooked prickles along veins, base cordate, margin irregularly coarsely sharply serrate, apex caudate. Inflorescences terminal, lax cymose panicles, large; rachis and pedicels with dense purplish red long bristles and stalked glands; bracts oblong or ovate-lanceolate, 1–1.6 cm, margin entire or serrate. Pedicel 2–4 cm. Flowers 1.2–2 cm in diam. Calyx abaxially densely yellowish tomentose, purplish red bristly, with stalked glands; sepals reflexed after anthesis, ovate-lanceolate, to 1 cm, apex caudate, outer sepals apically 2- or 3-lacinate, inner sepals entire. Petals white, suborbicular or broadly elliptic, thinly pubescent, base barely clawed. Stamens

many; filaments linear or somewhat broader basally; anthers sericeous-villous. Pistils nearly as long as or slightly longer than stamens; ovary soft hairy apically, glabrescent. Aggregate fruit reddish black, subglobose, glabrous; pyrenes coarsely rugose. Fl. May–July, fr. July–Aug.

• Montane thickets, forest margins in valleys; 1000–1500 m. Hubei, Hunan.

186. *Rubus tricolor* Focke, Biblioth. Bot. 17(Heft 72): 40. 1910.

三色莓 san se mei

Shrubs 1–4 m tall, with climbing or creeping branches. Branchlets brown to dark reddish brown, terete, tomentose, yellowish brown bristly or with intermixed glandular hairs. Leaves simple; petiole 1.5–3.5 cm, tomentose, bristly, with glandular hairs; stipules persistent, free, ovate-lanceolate to narrowly oblong, 1–2 cm × 4–8 mm, margin pinnate-laciniate; lobes lanceolate, tomentose, with intermixed long hairs along veins, hairs deciduous, sometimes sparsely bristly; blade ovate to oblong, 6–12 × 3–8 cm, veins raised abaxially, abaxially yellowish gray tomentose, yellowish brown bristly along veins, adaxially dark green, glabrous but sparsely bristly between veins, base subrounded to cordate, margin undivided or slightly undulate, unevenly coarsely sharply serrate, apex shortly acuminate. Inflorescences terminal, short subracemes, 3–5 cm, several flowered or flowers solitary in leaf axils; rachis and pedicels tomentose, purplish red bristly, or with glandular hairs; bracts narrowly ovate or ovate-lanceolate, 0.9–1.6 cm × 4–7 mm, pinnate-laciniate; lobes linear to lanceolate, abaxially tomentose-villous, bristly, initially with glandular hairs. Pedicel 5–10 mm. Flowers 2–3 cm in diam. Calyx abaxially yellowish brown tomentose, bristly; sepals lanceolate, 0.8–1.2 cm × 4–6 mm, margin entire or laciniate, apex acuminate. Petals white, obovate or obovate-oblong, 7–9 × 5–7 mm, base shortly clawed, apex emarginate or shortly pointed. Stamens many, shorter than petals. Pistils longer than stamens, glabrous. Aggregate fruit bright red, subglobose, 1.5–1.7 cm in diam.; pyrenes rugose. Fl. Jun–Jul, fr. Aug–Sep. $2n = 28^*$.

• Slopes, forests, thickets; 1800–3600 m. Sichuan, Yunnan.

187. *Rubus multisetosus* T. T. Yu & L. T. Lu, Fl. Reipubl. Popularis Sin. 37: 201. 1985.

刺毛悬钩子 ci mao xuan gou zi

Rubus polytrichus Franchet (1890), not Progel (1882).

Shrubs low, to 50 cm tall, with creeping branches. Branchlets brown to grayish brown, terete, tomentose, yellowish brown bristly or with intermixed stipitate glands. Leaves simple; petiole 1.5–3 cm, tomentose, bristly, or stipitate glandular; stipules persistent, free, ovate-lanceolate or narrowly ovate, 1–1.6 cm × 5–9 mm, abaxially tomentose, bristly, shallowly pinnate-laciniate; blade ovate to suborbicular, 3–6 × 3–5.5 cm, veins raised abaxially, abaxially densely yellowish white tomentose, yellowish brown bristly along veins, adaxially glabrous, base cordate, margin 3–5-lobed, sharply doubly serrulate, apex acute. Inflorescences terminal, short subracemes, 3–5 cm, several flowered, or flowers solitary in leaf axils; bracts ovate-lanceolate or narrowly ovate, 0.8–1.5 cm × 4–8 mm, tomentose when young,

bristly, laciniate. Pedicel 5–10 mm. Flowers 1–2 cm in diam. Calyx abaxially tomentose, bristly or stipitate glandular; sepals erect at anthesis, later enclosing fruit, lanceolate, 0.9–1.4 cm × 3.5–6 mm, apex acuminate, outer sepals usually laciniate apically, inner sepals entire. Petals white, broadly ovate to oblong, 7–11 × 5–8 mm, abaxially sparsely tomentose, base shortly clawed. Stamens many, shorter than petals; filaments broad, complanate. Pistils slightly shorter than or nearly as long as stamens; ovary glabrous. Aggregate fruit subglobose, glabrous, with many drupelets and persistent styles; pyrenes slightly rugose. Fl. Jun–Jul, fr. Aug–Sep.

• Montane forests and valleys, grasslands, roadsides, near water courses; 2200–3000 m. NW Yunnan.

188. *Rubus tsangorum* Handel-Mazzetti, Symb. Sin. 7: 485. 1933.

东南悬钩子 dong nan xuan gou zi

Shrubs lianoid, low, 0.3–1.5 m tall. Branchlets brownish to dark brown, terete, villous, unevenly with purplish red glandular hairs and bristly, sometimes with sparse, needle-like prickles. Leaves simple; petiole 4–8 cm, villous, with purplish red glandular hairs; stipules free, 1–1.5 cm, palmatipartite; lobes linear or linear-lanceolate, villous, with glandular hairs; blade suborbicular or broadly ovate, 6–14 cm in diam., abaxially thinly tomentose, with intermixed long hairs and sparse, glandular hairs along veins, glabrescent, adaxially villous, with sparse, intermixed glandular hairs along midvein, base deeply cordate, margin distinctly 3–5-lobed, lateral lobes broadly triangular, apex obtuse or acute, terminal lobe slightly larger than lateral lobes, broadly triangular-ovate, margin unevenly coarsely sharply serrate, apex acute or shortly acuminate. Inflorescences terminal or axillary, subracemes, 5–20-flowered, terminal ones 8–13 cm, lateral ones shorter; rachis, pedicels, and abaxial surface of calyx villous and with purplish red glandular hairs; bracts 0.8–1.2 cm, palmatipartite; lobes linear, villous, with glandular hairs. Pedicels unequal in length, longer ones to 2.5 cm, shorter ones 5–6 mm. Flowers 1–2 cm in diam. Calyx tube cupular, ca. 5 mm; sepals erect in fruit, narrowly triangular-lanceolate, 7–12 × 3–5 mm, apex long acuminate and deeply divided into 2 or 3 lanceolate lobes. Petals white, broadly obovate, 6–7 mm, base barely clawed. Stamens ca. 5 mm; filaments linear. Pistils many, much longer than stamens; ovary glabrous. Aggregate fruit red, subglobose, glabrous; pyrenes distinctly rugose. Fl. May–Jul, fr. Aug–Sep.

• Sparse montane forests and thickets; 200–1200 m. Anhui, Fujian, Guangdong, Guangxi, Hunan, Jiangxi, Zhejiang.

189. *Rubus treutleri* J. D. Hooker, Fl. Brit. India 2: 331. 1878.

滇西北悬钩子 dian xi bei xuan gou zi

Rubus arcuatus Kuntze; *R. rosulans* Kuntze; *R. tongloensis* Kuntze.

Shrubs low, 0.5–1 m tall. Branches grayish brown, brown or blackish brown, villous, purplish red stipitate glandular, with sparse, needle-like prickles. Leaves simple; petiole 2.5–5.5 cm, with dense purplish red stipitate glands, long hairs, and sparse, needle-like prickles; stipules free, 1–1.5 cm, palmatipartite nearly to base; lobes linear to linear-lanceolate, villous, stipitate

glandular; blade suborbicular, 6–12 cm in diam., abaxially densely tomentose-villous when young, glabrate in age, sparsely stipitate glandular along veins, adaxially sparsely villous but more densely so along veins, with sparse, stipitate glands along veins, base deeply cordate, margin 3–5-lobed, terminal lobe slightly larger than lateral lobes, margin irregularly coarsely serrate, apex acute, lateral lobes obtuse, rarely acute. Inflorescences terminal, subracemes, 3–4 cm or slightly longer, several to more than 10-flowered, or flowers few in clusters in leaf axils; rachis, pedicels, and abaxial surface of calyx densely villous, stipitate glandular; bracts 1–1.3 cm, palmatipartite; lobes linear, villous, stipitate glandular. Pedicel 5–10 mm. Flowers 1.5–2(–2.5) cm in diam. Calyx tube cupular, ca. 5 mm; sepals narrowly ovate or narrowly ovate-lanceolate, 0.8–1.5 cm × 5–7 mm, apex acuminate, outer sepals leaflike, margin laciniate or pinnately divided into lanceolate lobes, inner sepals entire. Petals pink, suborbicular, 8–11 mm in diam., barely clawed. Stamens many, shorter than petals; filaments broad, flat. Pistils nearly as long as stamens; ovary and style glabrous. Aggregate fruit red, globose, 8–10 mm in diam., enclosed in calyx; pyrenes densely rugulose. Fl. Jun–Jul, fr. Aug–Sep.

Forests, forest margins; 2300–3400 m. S Xizang (Yadong Xian), NW Yunnan [Bhutan, Nepal, Sikkim].

190. *Rubus fanjingshanensis* L. T. Lu ex Boufford et al., J. Arnold Arbor. 71: 123. 1990.

梵净山悬钩子 fan jing shan xuan gou zi

Shrubs trailing, small. Branchlets brown to brownish, dark brown in age, terete, villous, with thin needle-like prickles slightly dilated at base, with stalked glands. Leaves simple; petiole 4–8 mm, villous, with needle-like prickles, stipitate glandular; stipules free, 1.4–1.8 × 1–1.4 cm, both surfaces villous, with glandular hairs, palmatipartite 1/3–1/2 to base; lobes lanceolate to triangular-lanceolate, 3–7 × 1.3–3 mm; blade orbicular or suborbicular, 7–11 × 6.5–11 cm, veins raised abaxially, abaxially pale, adaxially dark green, both surfaces appressed villous, more densely so abaxially, veins glabrescent, sparsely hairy in age, abaxially with needle-like prickles, sometimes with sparse, intermixed stalked glands, base deeply cordate, margin 5(–7)-lobed; lobes obtuse to rounded, terminal lobe slightly longer than or ca. as long as lateral lobes, margin irregularly sharply serrate. Inflorescences not seen; infructescences terminal, short racemes, 4–5 cm, or clusters in leaf axils; rachis, fruiting pedicel, and abaxial surface of calyx villous, with needle-like prickles, sometimes with sparse, intermixed stipitate glands; bracts similar to stipules, but smaller. Fruiting pedicel 8–11 mm. Calyx tube cupular; sepals 5, broadly ovate-lanceolate to oblong-ovate, 0.8–1.4 cm × 4–6 mm, outer sepals dissected apically; lobes linear to linear-lanceolate, 2–5 × 1–1.5 mm, apex caudate. Stamens many, 3–4 mm; filaments somewhat broadened basally; anthers globose or shortly oblong. Pistils numerous, glabrous; torus raised, long hairy. Aggregate fruit red, subglobose, 7–10 mm in diam., glabrous, with many united drupelets, crowned with persistent calyx; pyrenes subreniform, 1.5–2.5 × 1–1.8 mm, distinctly rugose. Fl. not seen, fr. Aug–Sep.

• Mountains; 2000–2300 m. NE Guizhou (Fanjing Shan, Jiangkou Xian).

191. *Rubus amphidasys* Focke, Bot. Jahrb. Syst. 29: 396. 1900.

周毛悬钩子 zhou mao xuan gou zi

Rubus chaffanjonii H. Léveillé & Vaniot.

Shrubs trailing, small, 0.3–1 m tall. Branchlets reddish brown, with dense reddish brown long stipitate glands, soft bristles, and long yellowish hairs, usually unarmed. Leaves simple; petiole 2–5.5 cm, with reddish brown long glandular hairs, soft bristles and yellowish villous; stipules free, 0.8–1.5 cm, deeply laciniate; lobes lanceolate or linear, with long glandular hairs, villous; blade broadly to narrowly ovate, 5–11 × 3.5–9 cm, both surfaces villous, base cordate, margin 3–5-lobed, terminal lobe much larger and longer than lateral lobes, apex shortly acuminate, rarely acute, lateral lobes obtuse, unevenly sharply serrate. Inflorescences terminal or axillary, subracemes, 6–12 cm, 5–12-flowered, rarely flowers in clusters of 3–5; rachis, pedicels, and abaxial surface of calyx with dense reddish brown long glandular hairs, soft bristles, and yellowish long hairs; bracts 6–9 mm, lobed; lobes linear or lanceolate, villous, stipitate glandular. Pedicel 5–14 mm. Flowers 1–1.5 cm in diam. Calyx tube ca. 5 mm; sepals erect in fruit, narrowly lanceolate, 1–1.7 cm × 3–5 mm, apex caudate, outer sepals usually 2- or 3-lacinate. Petals white, broadly ovate to oblong, 4–7 × 3–5 mm, base barely clawed, margin premorse or coarsely serrate. Stamens many; filaments broad, complanate. Pistils longer than stamens; ovary glabrous. Aggregate fruit dark red, compressed globose, ca. 1 cm in diam., glabrous, enclosed in persistent calyx; pyrenes rugose. Fl. May–Jun, fr. Jul–Aug.

• Slopes, roadsides, shrub and bamboo thickets; 400–1600 m. Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Zhejiang.

192. *Rubus ourosepalus* Cardot, Notul. Syst. (Paris) 3: 290. 1914.

宝兴悬钩子 bao xing xuan gou zi

Shrubs lianoid, small, 0.4–1 m tall. Branchlets brown or reddish brown, with needle-like prickles, glandular hairs, and sparse, soft hairs. Leaves simple; petiole 2.5–5.5 cm, with needle-like prickles, glandular hairs, and soft hairs; stipules free, 7–10 mm, palmatipartite nearly to base; lobes linear-lanceolate or linear, with glandular hairs, intermixed with soft hairs; blade broadly ovate, 5–11 × 3.5–8 cm, both surfaces glabrous or subglabrous, with sparse, needle-like prickles along veins, base cordate, margin undivided, rarely lobed, sharply serrate, with sparse, glandular hairs, apex acute to acuminate. Inflorescences terminal and axillary, 1-flowered or flowers in clusters of 2–4; bracts 5–8 mm, palmatipartite nearly to base; lobes linear or subulate, soft hairy and stipitate glandular. Pedicel 2–4 cm, with needle-like prickles, stipitate glandular and soft hairy. Flowers 1–1.5 cm in diam. Calyx abaxially with needle-shaped prickles, stipitate glands, and soft hairs; tube pelviform; sepals erect in fruit, triangular-lanceolate, 0.8–1.4 cm, margin entire, rarely 2-lobed, apex subulate-acuminate. Petals white, ovate, 5–8 × 4–5 mm, base with claws nearly absent, apex acute. Stamens many, arranged in several whorls; filaments broad, flat. Pistils shorter than stamens; apex of ovary and base of style thinly pubescent when young, gradually glabrescent. Aggregate fruit red, dry,

semiglobose, enclosed in persistent calyx; pyrenes rugose or smooth. Fl. Jun–Jul, fr. Aug–Sep.

- Montane thickets; ca. 3000 m. C Sichuan (Baoping Xian).

193. *Rubus polyodontus* Handel-Mazzetti, Symb. Sin. 7: 484. 1933.

多齿悬钩子 *duo chi xuan gou zi*

Shrubs low, 20–40 cm tall. Branches grayish brown to dark brown, creeping, rooting at nodes; branchlets sparsely villous, with straight needle-like prickles. Leaves simple; petiole 2–3(–5) cm, villous, with straight needle-like prickles; stipules free, to 8 mm, villous, deeply divided nearly to base; lobes linear to linear-lanceolate; blade broadly ovate, 3–8 × 2.5–6 cm,

both surfaces sparsely villous, abaxially with sparse, needle-like prickles along midvein, base cordate, margin undivided or slightly incised, unevenly serrate, apex obtuse, rarely acute. Inflorescences terminal or axillary, 1-flowered or flowers in clusters of 3 or 4; bracts 5–7 mm, villous, deeply lobed; lobes linear to linear-lanceolate. Pedicel 5–10 mm. Calyx to 1.2 cm, sparsely villous, with needle-like prickles; sepals broadly ovate, 7–8 × 3–5 mm, margin tomentose, entire, apex caudate-acuminate or with leaflike appendages. Petals rose, obovate, 5–6 mm and ca. as broad, glabrous. Stamens ca. 30; filaments ca. 2 mm. Pistils more than 10; ovary soft hairy apically. Aggregate fruit dry, consisting of few drupelets, enclosed in persistent calyx; pyrenes smooth. Fl. Jul–Aug, fr. Sep–Oct.

- Bamboo thickets, forest margins; 2300–3200 m. NW Yunnan.

6. *Rubus* sect. *Chamaebatus* Focke, Abh. Naturwiss. Vereine Bremen 4: 145. 1874.

矮生莓组 *ai sheng mei zu*

Subshrubs or perennial creeping herbs, with creeping stems, with needle-like prickles or bristles. Leaves simple; stipules persistent, free at junction of stem and petiole, divided or undivided. Flowers bisexual, several in clusters or solitary. Aggregate fruit adnate to torus, falling away from base of torus at maturity, not hollow.

Five species (one endemic) in China.

- 1a. Stipules undivided, margin or apex toothed or entire; leaves orbicular-ovate or suborbicular, abaxially soft hairy.
 - 2a. Plants with soft hairs and needle-like prickles; petiole 5–10 cm; flowers to 3 cm in diam.; sepals leaflike, outer sepals pinnately lobed or incised-serrate, inner sepals serrate or entire 194. *R. calycinus*
 - 2b. Plants with soft hairs and reddish brown bristles; petiole 2–5 cm; flowers 1.5–2.3 cm in diam.; sepals ovate-lanceolate, apex often shallowly lacinate, rarely undivided 195. *R. pectinarioides*
- 1b. Stipules pectinately or pinnately lacinate; leaves broadly ovate to suborbicular.
 - 3a. Leaves abaxially tomentose; stipules pectinately or palmately lacinate; stems, petioles, pedicel, and calyx tomentose and with sparse, needle-like prickles; sepals ovate or triangular-lanceolate, apex often lacinate 196. *R. rolfei*
 - 3b. Leaves abaxially villous; stipules pectinately parted or deeply digitately divided; stems, petioles and pedicel villous and with soft bristles or villous and with sparse, needle-like prickles; abaxial surface of calyx densely minute tomentose and bristly, or with sparse, glandular hairs; sepals lanceolate or broadly lanceolate, entire or with few serrations or deeply divided or incised.
 - 4a. Stipules pectinately parted; stems, petioles, and pedicels villous and with soft bristles; abaxial surface of calyx densely minutely tomentose and bristly, or with sparse, glandular hairs; sepals lanceolate, margin entire 197. *R. pectinarius*
 - 4b. Stipules deeply digitately divided; stems, petioles, pedicel, and calyx villous and with sparse, needle-like prickles; outer sepals broader, deeply divided or incised, inner sepals narrower, margin few-serrate or entire 198. *R. pectinellus*

194. *Rubus calycinus* Wallich ex D. Don, Prodr. Fl. Nepal. 235. 1825.

齿萼悬钩子 *chi e xuan gou zi*

Dalibarda calycina (Wallich ex D. Don) Seringe.

Herbs creeping, 15–20 cm tall, main stems creeping, to 2–3 m long, rooting at nodes, with erect sparsely branched or unbranched laterals. Stems with sparse, needle-like prickles or nearly unarmed, with sparse hairs. Leaves simple; petiole 5–10 cm, villous, with needle-like prickles; stipules ovate, rarely obovate, 0.8–1.3 cm × 6–11 mm, margin shallowly coarsely serrate, rarely entire; blade orbicular-ovate or suborbicular, 2.5–6 cm in diam., both surfaces pilose when young, gradually glabrescent, hairy only along veins in age, abaxially with needle-like prickles along veins, base deeply cordate, margin undulate

or shallowly 3–5-lobed, irregularly coarsely serrate, apex obtuse or rounded. Inflorescences usually terminal, 1- or 2-flowered; bracts ovate, 6–10 × 5–9 mm, coarsely serrate, very rarely entire. Pedicel 3–5 cm, usually villous, with needle-like prickles. Flowers to 3 cm in diam. Calyx abaxially with soft hairs and straight subulate prickles; tube broadly pelviform, 3.5–5 mm in diam.; sepals leaflike, narrowly ovate to elliptic, 0.8–1.4 cm × 6–11 mm, outer sepals broader, pinnately lobed or incised-serrate, inner sepals narrower, apex or margin coarsely incised-serrate, sometimes entire. Petals white, obovate to elliptic, slightly shorter than sepals, adaxially puberulous, base clawed. Stamens ca. 30–40, shorter than petals; filaments to 6 mm; anthers ca. 1 mm. Pistils ca. 30–50(–70), slightly shorter than stamens; ovary glabrous; styles to 5 mm, glabrous. Aggregate fruit red to dark red, globose, 0.9–1.4 cm in diam., con-

sisting of few drupelets, enclosed in persistent calyx; pyrenes 3–4 mm, rugulose. Fl. May–Jun, fr. Jul–Aug.

Slopes, forests, forest margins; 1200–3000 m. Sichuan, S Xizang, Yunnan [Bhutan, NE India, Indonesia (Java), N Myanmar, Nepal, Sikkim].

195. *Rubus pectinarioides* H. Hara, J. Jap. Bot. 47: 111. 1972.

匍匐悬钩子 pu fu xuan gou zi

Subshrubs creeping, (5–)10–20 cm tall. Stems prostrate, rooting at nodes, soft hairy, bristly, usually unarmed. Leaves simple; petiole 2–5 cm, with soft reddish brown bristles and hairs; stipules ovate to elliptic, free, 8–10 mm, hairy, margin entire or rarely apically with few serrations, apex obtuse or acute; blade orbicular-ovate or suborbicular, 2–4 × 1.5–5 cm, both surfaces pilose, gradually glabrescent, abaxially soft bristly along veins, base deeply cordate, margin undulate or 3–5-lobed, unevenly sharply serrate, apically obtuse or rounded. Inflorescences usually terminal, 1-flowered or flowers in clusters of 2 or 3; bracts usually 2, opposite at middle of pedicel, ovate to elliptic, 5–8 mm, hairy, margin entire or apically lobed. Pedicel 3.5–6 cm, reddish brown bristly and soft hairy. Flowers 1.5–2.3 cm in diam. Calyx abaxially with dense, reddish brown soft bristles and hairs; tube cupular; sepals ovate-lanceolate, 0.8–1.3 cm × 4–5 mm, margin entire or outer sepals apically lobed, apex caudate. Petals pink, suborbicular or broadly obovate, 0.8–1.4 cm × 7–10 mm, base clawed, apex obtuse. Stamens many, shorter than petals; filaments broad, flat. Pistils nearly equal to stamens in length; style and ovary glabrous. Aggregate fruit red, subglobose, 1–1.5 cm in diam., glabrous, enclosed in persistent calyx; pyrenes smooth. Fl. Jul–Aug, fr. Sep–Oct.

Forests on rocky slopes, rocky stream sides in mountains; 2800–3300 m. SE Xizang, NW Yunnan [Bhutan, Sikkim].

196. *Rubus rolfei* S. Vidal, Phan. Cuming. Philipp. 171. 1885.

高山悬钩子 gao shan xuan gou zi

Rubus calycinoides Hayata ex Koidzumi (1913), not Kuntze (1879); *R. calycinoides* Hayata var. *macrophyllus* H. L. Li; *R. elmeri* Focke; *R. hayatae-koidzumii* Naruhashi; *R. pentalobus* Hayata; *R. rolfei* var. *lanatus* Hayata.

Subshrubs low, with creeping stems and ascending leafy shoots. Stems prostrate, rooting at nodes, densely tomentose-villous, with sparse, small prickles, sometimes nearly unarmed, glabrate in age. Leaves simple; petiole nearly as long as leaf blade, tomentose-villous, with sparse, needle-like prickles; stipules free, obovate to ± oblong, 7–12 mm, membranous, margin pectinately or palmately lacinate ca. 1/2 to middle at apex, abaxially hairy, adaxially glabrous; blade broadly ovate to suborbicular, 2–6(–9) × 2–5.5(–9) cm, venation pedate, lateral veins 4 or 5 pairs, raised abaxially, impressed adaxially, leathery, abaxially brownish gray tomentose, with long hairs and sparse, needle-shaped prickles along veins, adaxially dark greenish brown, usually sparsely hairy when young, later glabrous, bullate between veins, base cordate, basal incision to 1 cm deep, margin 3–5-lobed; lobes obtuse, unevenly crenate. Inflorescences terminal and axillary, 1- or few flowered; rachis and pedicels densely tomentose-villous, with sparse, needle-like

prickles; bracts obovate to ± oblong, 8–10 mm, apex palmately or pectinately lacinate, hairy. Pedicel 5–9 mm. Flowers to 2 cm in diam. Calyx 1–1.5 cm, abaxially tomentose-villous; sepals ovate or triangular-lanceolate, 8–10 × 4–7 mm, apex lacinate; lobes linear-lanceolate. Petals white, suborbicular or obovate, 7–10 × 6–8 mm, adaxially puberulous, base clawed. Stamens many; filaments to 5 mm; anthers to 1 mm, with few long hairs, rarely glabrous. Pistils fewer than stamens, glabrous. Aggregate fruit yellow to orange or reddish, globose, 1–1.4 × ca. 1 cm, fleshy, with reddish persistent calyx; drupelets obliquely ellipsoid; pyrenes rugose; seeds reniform. Fl. Jun–Jul, fr. Aug–Sep. $2n = 28^*$, 42^* .

Open places, mixed forests; 1300–3800 m. Taiwan [Philippines].

197. *Rubus pectinarius* Focke, Biblioth. Bot. 17(Heft 72): 21. 1910.

梳齿悬钩子 shu chi xuan gou zi

Rubus allophyllus Hemsley, p.p.

Shrubs creeping, 20–40 cm tall. Stems reddish brown to purplish brown, slender, soft hairy, sometimes sparsely soft bristly. Leaves simple; petiole 3–6 cm, villous or with sparse, intermixed soft bristles; stipules free, broadly ovate, 5–10 × 4–8 mm, sparsely soft hairy, pectinately lobed; lobes lanceolate; blade suborbicular, 3–6 × 3.5–6.5 cm, both surfaces villous, gradually glabrescent, with only sparse hairs along veins in age, base deeply cordate, margin 2- or 3-lobed, crenate or doubly serrate, apex obtuse. Inflorescences terminal, 2–3 cm in diam., 1- or 2-flowered; bracts broadly ovate, 5–8 × 4–6 mm, sparsely soft hairy, pectinately lobed; lobes lanceolate. Pedicel 2–4 cm, villous, soft bristly or stipitate glandular. Calyx abaxially densely minutely tomentose and with rigid bristles, sometimes with intermixed stipitate glands; sepals reflexed after anthesis, lanceolate, 1–1.4 cm × 3–4 mm, margin entire, apex long caudate. Petals white, oblong, slightly shorter than sepals, base long clawed. Stamens many, shorter than petals. Pistils slightly shorter than or nearly as long as stamens, glabrous. Aggregate fruit with few drupelets. Fl. Jun–Jul, fr. Aug–Sep.

• Slopes, forests; 2000–3300 m. C Sichuan (Emei Shan).

198. *Rubus pectinellus* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg, ser. 3, 17: 147. 1872.

黄泡 huang pao

Rubus pectinellus var. *trilobus* Koidzumi.

Herbs or subshrubs, 8–20(–30) cm tall. Stems creeping, brown or brownish, rooting at nodes, villous, ± prickly. Leaves simple; petiole 3–6 cm, villous, with needle-like prickles; stipules free, 6–9 mm, villous, deeply digitately lobed; lobes linear-lanceolate; blade suborbicular, 2.5–4.5 × 3–5(–7) cm, venation pedate, lateral veins (1 or) 2 pairs, raised abaxially, both surfaces pilose, abaxially with needle-like prickles along veins, base deeply cordate, margin sometimes undulate-lobed or 3-lobed, unevenly dentate or doubly serrate, apex obtuse. Inflorescences 1-flowered, rarely flowers 2 or 3 in axils of apical leaves; bracts 5–8 mm, villous, palmately lobed; lobes linear-lanceolate. Pedicel 2–4 cm, villous, with needle-like prickles.

Flowers to 2 cm in diam. Calyx 1.5–2 cm, abaxially villous and with needle-like prickles; tube ovoid-globose; sepals ovate to ovate-lanceolate, unequal in length, outer sepals broader, 0.9–1.3 cm × 6–9 mm, deeply divided or incised, inner sepals narrower, with few teeth or entire. Petals white, obovate or elliptic, 0.8–1.2 cm × 6–8 mm, glabrous, base clawed. Stamens many, much shorter than petals. Pistils shorter than stamens; apex of

ovary and base of style slightly puberulous, glabrescent. Aggregate fruit red, globose, 1–1.5 cm in diam., glabrous, with reflexed sepals; pyrenes nearly smooth or somewhat rugulose. Fl. May–Jun, fr. Jul–Aug. $2n = 42$.

Montane forests and valleys, river banks; 700–3000 m. Fujian, Guizhou, Hubei, Hunan, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang [Japan, Philippines].

7. *Rubus* sect. *Cylactis* Focke, Abh. Naturwiss. Vereine Bremen 4: 142. 1874.

匍匐莓组 pu fu mei zu

Herbs perennial, creeping, low or dwarf, unarmed, rarely with needle-like prickles. Leaves compound, 3–5-foliolate; stipules persistent, free, at junction of stem and petiole, broad, occasionally narrow, undivided, rarely divided. Flowers bisexual, several in clusters or solitary. Aggregate fruit adnate to torus, falling away from base of torus at maturity, not hollow.

Nine species (two endemic) in China.

- 1a. Leaves simple, 3–5-lobed to -parted, cordate or reniform-cordate; stems, petioles, and pedicels soft hairy or subglabrous, bristly; petals white 207. *R. humulifolius*
- 1b. Leaves compound, 3–5-foliolate; stems, petioles and pedicels villous, bristly, with glandular hairs or soft hairy or with needle-like prickles or pubescent; petals white or purplish red.
 - 2a. Leaves 5-foliolate, rarely 3-foliolate, lobed or parted; stipules entire.
 - 3a. Leaflets lobed, incised, coarsely sharply serrate, or doubly serrate; sepals ovate-lanceolate; pistils 4–6 199. *R. fragarioides*
 - 3b. Leaflets parted, deeply sharply serrate; sepals broadly ovate; pistils ca. 3 or ca. 24.
 - 4a. Pistils ca. 24; stamens ca. 30 in 2 whorls; petals entire or undulate 200. *R. potentilloides*
 - 4b. Pistils ca. 3; stamens ca. 30 in 1 whorl; petals lobed or coarsely serrate 201. *R. clivicola*
 - 2b. Leaves 3-foliolate, undivided; stipules entire or divided.
 - 5a. Stipules pectinately divided, lobes lanceolate, shallowly 3–5-toothed; leaflets suborbicular; stems, petioles, pedicels, and calyx villous, bristly, with glandular hairs; flowers white, solitary; pistils 10–15 206. *R. rubrisetulosus*
 - 5b. Stipules entire; leaflets suborbicular, broadly ovate to broadly obovate, rhombic, or ovate-rhombic; stems, petioles, and pedicel with soft hairs or needle-like prickles, or pubescent, or bristly.
 - 6a. Leaflets rhombic or ovate-rhombic to oblong-rhombic; stems, petioles, and pedicels with soft hairs or needle-like prickles; flowers purplish red or white.
 - 7a. Leaflets rhombic to obovate-rhombic; stems, petioles, and pedicel pubescent; flowers 1 or 2, purplish red; pistils ca. 20 202. *R. arcticus*
 - 7b. Leaflets ovate-rhombic to oblong-rhombic; stems, petioles, and pedicels sparsely pubescent and with needle-like prickles, sometimes with sparse, intermixed glandular hairs; flowers white, several in clusters or corymbs; pistils 5 or 6 203. *R. saxatilis*
 - 6b. Leaflets suborbicular, broadly ovate or broadly obovate; stems, petioles, and pedicels pubescent or bristly; flowers white.
 - 8a. Stems, petioles, and pedicels only pubescent; abaxial surface of calyx pubescent or sparsely bristly; petals obovate-oblong to linear-oblong; pistils 4–20 204. *R. fockeanus*
 - 8b. Stems, petioles, pedicel, and abaxial surface of calyx villous and reddish brown bristly; petals broadly obovate; pistils 25–70 or more 205. *R. nyalamensis*

199. *Rubus fragarioides* Bertoloni, Mém. Reale Accad. Sci. Ist. Bologna 12: 236. 1861.

莓叶悬钩子 mei ye xuan gou zi

Herbs low, 6–16 cm tall. Stems greenish brown or brownish, woody, soft hairy. Leaves compound, 5- or 3-foliolate; petiole 3–9 cm, slightly soft hairy; leaflets very shortly petiolulate or subsessile; stipules free, ovate or elliptic, 7–10 × 5–7 mm, apex acute or ± obtuse; blade of leaflets obovate to suborbicular, 2–5 × 1.5–3.5 cm, glabrous or soft hairy, base cuneate, margin usually lobed, incised or coarsely sharply serrate or doubly serrate, apex acute or obtuse. Inflorescences usually terminal, 1–2 cm in diam.; flowering branchlets and pedicels soft

hairy. Pedicel 1–3(–5) cm. Calyx abaxially glabrous or soft hairy; tube shallowly cupular; sepals ovate-lanceolate, 6–10 × 2–4 mm, margin entire, apex long acuminate to caudate. Petals white, obovate, 0.8–1.2 cm × 5–6 mm, apex acute. Stamens many, erect, unequal in length, shorter than petals; filaments dilated in basal part. Pistils 4–6, shorter than stamens; ovary usually glabrous. Aggregate fruit 7–9 mm in diam., with several drupelets, persistent calyx lobes erect; drupelets to 4 mm; pyrenes rugose. Fl. May–Jul, fr. Jul–Sep.

High mountains, grasslands, slopes, forests, forest margins; 3000–4200 m. W Sichuan, Xizang, NW Yunnan [Bhutan, NE India, N. Myanmar, Nepal, Sikkim].

- 1a. Blade of leaflets and abaxial surface of calyx usually glabrous; flowering branchlets and pedicels soft hairy 199a. var. *fragarioides*
- 1b. Blade of leaflets and abaxial surface of calyx soft hairy; flowering branchlets and pedicels with soft hairs, with or without glandular hairs.
 - 2a. Flowering branchlets and pedicels with soft hairs, without glandular hairs 199b. var. *pubescens*
 - 2b. Flowering branchlets, pedicels, or base of calyx with soft hairs and glandular hairs 199c. var. *adenophorus*

199a. *Rubus fragarioides* var. *fragarioides*

莓叶悬钩子(原变种) *mei ye xuan gou zi (yuan bian zhong)*

Rubus arcticus Linnaeus var. *fragarioides* (Bertoloni) Focke.

Blade of leaflets and abaxial surface of calyx usually glabrous. Flowering branchlets and pedicels soft hairy.

High mountains; 3000–4200 m. Xizang [Bhutan, NE India, N Myanmar, Nepal, Sikkim].

199b. *Rubus fragarioides* var. *pubescens* Franchet, Pl. Delavay. 203. 1890.

柔毛莓叶悬钩子 *rou mao mei ye xuan gou zi*

Blade of leaflets and abaxial surface of calyx soft hairy. Flowering branchlets and pedicels with soft hairs, without glandular hairs.

• Slopes, forests, forest margins; 3300–4000 m. S Xizang, NW Yunnan.

199c. *Rubus fragarioides* var. *adenophorus* Franchet, Pl. Delavay. 203. 1890.

腺毛莓叶悬钩子 *xian mao mei ye xuan gou zi*

Rubus franchetianus H. Léveillé; *R. yui* E. Walker.

Blade of leaflets and abaxial surface of calyx soft hairy. Flowering branchlets, pedicels, or base of calyx with soft hairs and glandular hairs.

• Grasslands on slopes, forests; 3000–4000 m. W Sichuan, SE Xizang, NW Yunnan.

200. *Rubus potentilloides* W. E. Evans, Notes Roy. Bot. Gard. Edinburgh 13: 179. 1921.

委陵悬钩子 *wei ling xuan gou zi*

Herbs perennial, dwarf, 3–8 cm tall. Stems prostrate, rooting at nodes, slender, pubescent when young, glabrescent; flowering branchlets erect, pubescent. Leaves compound, 5-foliolate, rarely 3-foliolate; petiole 1–3 cm, pubescent, petiolule of leaflets 2–4 mm; stipules free, broadly elliptic or suborbicular, 3–4 mm, margin entire, apex obtuse; blade of leaflets suborbicular, 3–8(–12) × 4–10 mm, both surfaces glabrous or puberulous, base cuneate, margin deeply divided nearly to midvein, with 3 distinct lobes; lobes sharply divided again, deeply

sharply serrate, apex obtuse. Inflorescences usually 1-flowered. Pedicel 6–12 mm, pubescent. Flowers 1.5–2 cm in diam. Calyx abaxially pubescent; sepals broadly ovate, rarely narrower, 4–5 × 2–3 mm, apex abruptly acuminate, with blackish tip. Petals white, broadly elliptic, 6–7 × 4–6 mm, margin entire or undulate, rarely lobed, apex obtuse or subtruncate. Stamens 30, in 2 whorls, outer sepals ca. 2 mm, inner sepals shorter; filaments broad, flat; anthers small. Pistils ca. 24; ovary glabrous; styles ca. 2 mm, slender; stigma truncate. Fruit unknown. Fl. Jun–Jul.

Mixed forests in high mountains; 2700–3500 m. NW Yunnan [N Myanmar].

201. *Rubus clivicola* E. Walker, J. Wash. Acad. Sci. 32: 262. 1942.

矮生悬钩子 *ai sheng xuan gou zi*

Herbs perennial, dwarf, 3–10(–12) cm tall. Stems brown or purplish brown, prostrate, slender, rooting at nodes, pubescent. Leaves compound, 5-foliolate, rarely 3-foliolate; petiole 1–2 cm, pubescent, petiolule of leaflets 2–5 mm; stipules free, ovate or suborbicular, 3–4 mm, puberulous, margin entire, apex obtuse; blade of leaflets obovate to suborbicular, 0.5–1.5 cm × 6–11 mm, both surfaces pilose when young, rarely with scattered brown glandular hairs abaxially, base cuneate, margin deeply 3-divided nearly to midvein, with 3 distinct lobes; lobes sharply divided again into deep sharp incised teeth, apex obtuse. Inflorescences 1-flowered. Pedicel 1–2 cm, pubescent. Flowers 1–1.2 cm in diam. Calyx abaxially pubescent; sepals broadly ovate, 5–7 × 3–5 mm, apex shortly acuminate. Petals white, ovate to broadly elliptic, 6–8 × 4–5 mm, glabrous, margin lobed or coarsely serrate. Stamens 30, 1-seriate, much shorter than petals; filaments broad, complanate; anthers ovoid, small. Pistils ca. 3, ca. 2.5 mm; filaments slender; ovary glabrous, smooth. Aggregate fruit glabrous when young. Fl. Jul–Aug, fr. Aug–Sep.

Rocky slopes, forests; 2800–4200 m. NW Yunnan [N Myanmar].

202. *Rubus arcticus* Linnaeus, Sp. Pl. 1: 494. 1753.

北悬钩子 *bei xuan gou zi*

Herbs dwarf, 10–30 cm tall. Roots creeping, nearly woody. Stems greenish or greenish brown, slender, pilose, unbranched or branched. Leaves compound, 3-foliolate; petiole longer, pilose, petiolule of terminal leaflet to 0.5 cm; lateral leaflets subsessile; stipules free, ovate or oblong, 5–7 × 3–5 mm, herbaceous, pubescent, margin entire, apex acute or obtuse; blade of leaflets rhombic to obovate-rhombic, terminal leaflet 3–5 cm, slightly longer than lateral leaflets, abaxially pilose, adaxially subglabrous, base narrowly cuneate, margin irregularly sharply serrulate or doubly serrate, sometimes shallowly incised, apex acute or obtuse. Inflorescences usually terminal, 1–2 cm in diam., usually 1-flowered, sometimes flowers 1 or 2 in leaf axils, bisexual or incompletely unisexual. Pedicel 2–4 cm, pubescent. Calyx turbinate, abaxially pubescent; tube cupular; sepals 5–10, ovate-lanceolate to narrowly lanceolate, 5–8 × 2–3 mm, apex acuminate. Petals purplish red, broadly obovate, rarely oblong or spatulate, 0.8–1.2 cm × 6–8 mm, base clawed, sometimes apically emarginate. Stamens erect, shorter than petals; filaments linear, inflated basally. Pistils 20, glabrous or pi-

lose abaxially, shorter than stamens. Aggregate fruit dark red, semiglobose, not more than 1 cm in diam., with few drupelets, persistent sepals reflexed; pyrenes nearly smooth or slightly rugulose. Fl. Jun–Jul, fr. Jul–Aug. $2n = 14$.

Slopes, forests, ravines; ca. 1200 m. Heilongjiang, Jilin, Liaoning, Nei Mongol [Korea, Mongolia, Russia; N Europe].

203. *Rubus saxatilis* Linnaeus, Sp. Pl. 1: 494. 1753.

石生悬钩子 shi sheng xuan gou zi

Cylactis saxatilis (Linnaeus) A. Löve.

Herbs 20–60 cm tall. Stems greenish brown, terete, slender; sterile stems creeping, with minute needle-like prickles, sparsely pubescent, sometimes with stalked glands. Leaves usually compound and 3-foliolate, rarely simple and divided; petiole 2–3.5 cm, pilose, with minute needle-like prickles; lateral leaflets subsessile, petiolule of terminal leaflet 1–2 cm; stipules free, on flowering branches ovate or elliptic, 5–8 × 3–5 mm, on creeping branches narrower, lanceolate or linear-oblong, pubescent, margin entire; blade of leaflets ovate-rhombic or oblong-rhombic, terminal leaflet 5–7 cm, slightly longer than lateral leaflets, both surfaces pubescent, more densely so along veins abaxially, base subcuneate or obliquely subcuneate, margin often coarsely doubly serrate, rarely incised-serrate, lateral leaflets sometimes 2-lobed, apex acute. Inflorescences corymbs or flowers several in clusters; peduncles unequal in length, shorter ones ca. 5 mm, longer ones to 3 cm; bracts ovate or elliptic, rarely linear-oblong, pubescent, margin entire. Pedicel 6–10 mm, pilose, with minute needle-like prickles, often with stalked glands. Flowers less than 1 cm in diam. Calyx turbinate, sometimes pelviform in fruit, abaxially pubescent; sepals ovate-lanceolate, 5–7 × 1.5–2.5 mm, apex acuminate. Petals white, spatulate or oblong, 6–9 × 3–5 mm, glabrous, base clawed, erect. Stamens many, much shorter than petals; filaments erect, base inflated, apex subulate, incurved. Pistils 5 or 6, nearly equaling stamens. Aggregate fruit red, globose, 1–1.5 cm in diam., glabrous, with larger drupelets; pyrenes oblong, alveolate-pitted. Fl. Jun–Jul, fr. Jul–Aug. $2n = 28$.

Stony soils, thickets, forests; below 3000 m. Hebei, Heilongjiang, Jilin, Liaoning, Nei Mongol, Shanxi, Xinjiang [Mongolia, Russia; Europe, North America].

204. *Rubus fockeanus* Kurz, J. Asiat. Soc. Bengal. 44(2): 206. 1875.

凉山悬钩子 liang shan xuan gou zi

Rubus allophyllus Hemsley, p.p.; *R. loropetalus* Franchet; *R. nutans* Wallich var. *fockeanus* (Kurz) Kuntze; *R. radicans* Focke.

Herbs perennial, creeping, without prickles and glands, sometimes with intermixed small glandular hairs. Stems prostrate, rooting at nodes, slender, pubescent. Leaves compound, 3-foliolate; petiole 2–5 cm, pubescent, terminal leaflet shortly petiolulate, lateral leaflets subsessile; stipules free, elliptic, 5–7 × 3–5 mm, membranous, margin entire, rarely toothed, apex ± obtuse or shortly pointed; blade of leaflets suborbicular to broadly obovate, 2.5–4 × 3.5–5 cm, abaxially pilose along veins, adaxially pilose, base broadly cuneate to rounded, lateral

leaflets with oblique base, margin unevenly coarsely obtusely serrate, apex obtuse. Inflorescences terminal, to 2 cm in diam., 1- or 2-flowered; bracts elliptic, smaller than stipules, membranous, puberulous, margin entire or toothed. Pedicel 2–5 cm, pubescent, sometimes bristly. Calyx abaxially pubescent, or intermixed sparsely reddish brown bristly; sepals 5 or more, ovate-lanceolate to narrowly lanceolate, 7–10 × (2–)3–4 mm, undivided, rarely shallowly lacinate, apex long acuminate. Petals white, obovate-oblong to linear-oblong, 7–11 × 3–5 mm, base clawed. Stamens many, shorter than petals; filaments enlarged toward base. Pistils 4–20, shorter than stamens; ovary glabrous or slightly puberulous; styles glabrous or basally slightly pubescent. Aggregate fruit red, globose, glabrous, with few semiglobose drupelets; pyrenes rugose. Fl. May–Jun, fr. Jul–Aug.

Grassy slopes, forests; 2000–4000 m. Hubei, Sichuan, S Xizang, Yunnan [Bhutan, N Myanmar, Nepal, Sikkim].

205. *Rubus nyalamensis* T. T. Yu & L. T. Lu, Acta Phytotax. Sin. 18: 499. 1980.

聂拉木悬钩子 nie la mu xuan gou zi

Herbs perennial, low. Stems creeping, rooting at nodes, slender, with reddish brown soft bristles and soft hairs. Leaves compound, 3-foliolate; petiole 4–6 cm, petiolule of leaflets 2–5 mm, villous, reddish brown bristly; stipules persistent, free, brown, ovate, membranous, soft hairy, margin entire or apically serrate, apex acute or obtuse; blade of leaflets broadly ovate to suborbicular, 1–3 × 0.8–2.8 cm, both surfaces sparsely villous, abaxially with sparse bristles along veins, base cuneate, lateral leaflets with oblique base, margin doubly serrulate, sometimes lobed, apex obtuse. Inflorescences terminal or axillary, to 2 cm in diam., 2–4-flowered, rarely 1-flowered; bracts ovate, soft hairy, margin entire or apically deeply divided-serrate. Pedicel 1–4 cm, slender, villous, reddish brown bristly. Calyx abaxially villous and reddish brown bristly; sepals triangular-ovate to ovate-lanceolate, margin often lacinate, rarely entire, apex acute to acuminate. Petals white, broadly obovate, slightly longer than sepals, base shortly clawed. Stamens many; filaments erect, much shorter than petals. Pistils ca. 25–70 or more; ovary glabrous or pilose adaxially. Aggregate fruit red, globose, glabrous, with many drupelets; pyrenes smooth. Fl. May–Jun, fr. Jul–Aug.

• Grasslands on slopes, forests, near water courses; 2000–3000 m. S Xizang.

206. *Rubus rubrisetulosus* Cardot, Notul. Syst. (Paris) 3: 289. 1914.

红刺悬钩子 hong ci xuan gou zi

Herbs perennial, dwarf, 10–20 cm tall. Stems brownish or dark purplish red, creeping, rooting at nodes, thinly villous, intermixed bristly or stipitate glandular. Leaves compound, 3-foliolate; petiole 4–7 cm, slender, thinly villous, sparsely bristly and stipitate glandular, petiolule of leaflets 2–5 mm; stipules free, ovate-oblong or obovate, 6–9 mm, basally attenuate, apex pectinately lobed; lobes lanceolate, sometimes with 3–5 shallow teeth, thinly villous, stipitate glandular; blade of leaflets suborbicular, 2–3.5 cm in diam., both surfaces sparsely appress-

ed villous, base broadly cuneate to rounded, lateral leaflets with distinctly oblique base, margin serrulate or doubly serrate, apex obtuse. Inflorescences terminal and axillary, 1.8–2.5 cm in diam., 1-flowered; bracts similar to stipules, 5–8 mm, palmately lobed; lobes lanceolate or linear, villous, stipitate glandular. Pedicel 2–4 cm, slender, villous, with purplish red bristles and stipitate glands. Calyx abaxially densely and finely villous, purplish red bristly, with stalked glands; sepals narrowly ovate-lanceolate or triangular-lanceolate, 1–1.8 cm × 3–5(–6) mm, margin entire, apex long caudate. Petals white, obovate-oblong or oblong, 1–1.5 cm × 4–6 mm, base gradually attenuate into claw, apex obtuse. Stamens many, shorter than petals; filaments slightly inflated. Pistils ca. 10–15, shorter than stamens, glabrous. Aggregate fruit red, globose, to 1 cm in diam., glabrous; pyrenes prominently rugose. Fl. Jun–Jul, fr. Aug–Sep.

• Montane forests, ravines, waste fields; 2000–3500 m. Sichuan, Yunnan.

207. *Rubus humulifolius* C. A. Meyer, Beitr. Pflanzenk. Russ. Reiches 57. 1848.

8. *Rubus* sect. *Chamaemorus* Focke, Abh. Naturwiss. Vereine Bremen 4: 142. 1874.

单性莓组 dan xian mei zu

Herbs perennial, dioecious, creeping, dwarf, unarmed. Leaves simple; stipules persistent, free, at junction of stem and petiole, broader, leaflike, undivided. Inflorescences 1-flowered. Aggregate fruit adnate to torus, falling away from base of torus at maturity, not hollow.

One species in China.

208. *Rubus chamaemorus* Linnaeus, Sp. Pl. 1: 494. 1753.

兴安悬钩子 xing an xuan gou zi

Herbs perennial, dwarf, 5–30 cm tall, dioecious, with long branched creeping rhizomes. Stems annual, somewhat woody, simple, erect, 30 cm tall, with few squamous leaves, pubescent, with intermixed sparse, short glandular hairs. Leaves simple; petiole 3–6(–9) cm, pubescent or with sparse, short glandular hairs when young; stipules free, leaflike, brownish, oblong, 5–10 × 4–7 mm, pubescent, with sparse, intermixed short glandular hairs when young, glabrescent; cauline leaf blade reniform or orbicular, 4–9 cm in diam., abaxially pubescent, ± with intermixed short glandular hairs when young, adaxially subglabrous or slightly pilose, base cordate, margin 5–7-lobed; lobes obtuse, with uneven coarse sharp serrations. Inflorescences terminal, 1-flowered. Pedicel 3.5–6 cm, pubescent, with sparse, intermixed short glandular hairs. Flowers unisexual, 2–3

葎草叶悬钩子 lu cao ye xuan gou zi

Herbs perennial, dwarf, 10–30 cm tall. Rhizomes creeping, blackish brown, slender, much branched. Stems erect or ascending, soft hairy, rarely glabrous, prickly-bristly. Leaves simple; petiole 2–6 cm, pubescent or subglabrous, ± prickly-bristly; stipules often caducous, inconspicuous; blade cordate or reniform-cordate, 4–8 × 3.5–9 cm, abaxially greenish, pubescent, with few bristles, adaxially green, bristly pilose at first, glabrescent, base cordate, margin palmately 3–5-lobed; lobes ovate or suborbicular, apex obtuse or acute, irregularly doubly serrate. Inflorescences terminal, 1-flowered, rarely 2- or 3-flowered. Pedicel 1–2 cm, bristly. Calyx abaxially pubescent; sepals erect or spreading, narrowly lanceolate, 7–9 mm, apex caudate. Petals white, lanceolate, longer than sepals, apex acuminate. Stamens many, much shorter than petals; filaments of outer stamens dilated. Aggregate fruit red at maturity, globose, ca. 1 cm in diam., glabrous; pyrenes foveolate. Fl. Jun–Jul, fr. Aug. $2n = 14$.

Coniferous forests, moist thickets. Heilongjiang, Jilin, Nei Mongol [Korea, Mongolia, Russia].

cm in diam., usually staminate larger than pistillate, to 3 cm in diam. Calyx abaxially pubescent, sometimes with intermixed short glandular hairs; tube 1.5–2 mm; sepals erect, spreading, 4 or 5, oblong, 0.8–1.2 cm × 4–6 mm, apex obtuse or acute. Petals 4 or 5, white, obovate, 1.4–1.8 cm × 7–10 mm, apex retuse. Stamens shorter than petals; filaments long, linear, basally somewhat broadened. Pistils abortive in staminate flowers; in pistillate flowers ca. 20; styles linear, long, but stamens not developed or without anthers in pistillate flowers. Aggregate fruit orange-red or becoming yellowish brown, subglobose, ca. 1 cm in diam., glabrous; pyrenes smooth or slightly rugulose. Fl. May–Jul, fr. Aug–Sep. $2n = 56$.

Forests, mossy bogs, mossy tundra. Heilongjiang, Jilin, Liaoning [Japan, Korea, Russia; C and N Europe, North America].

The edible fruit are harvested commercially and are used in preserves and juices.

The following taxa have been described from or reported for China, but we have seen no specimens and are therefore unable to treat them in this account. Further revision is necessary.

Rubus calophyllus C. B. Clarke (J. Linn. Soc., Bot. 25: 19. 1889), described from India, reported for Xizang (“Tibet”): *F. K. Ward* 6321.

Rubus chui Handel-Mazzetti (Oesterr. Bot. Z. 90: 121. 1941), described from Sichuan: *K. L. Chu* 3019; *K. L. Chu* 3533.

Rubus hiemalis Focke (Annuaire Conserv. Jard. Bot. Genève 20: 105. 1917, not Kuntze, 1879), described from Taiwan: *O. Warburg* 10161.

Rubus nigricaulis Prochanov (Bot. Mater. Gerb. Glavn. Bot. Sada RSFSR 5: 54. 1924), described from Yunnan: *A. Henry s.n.*

Rubus parapungens H. Hara (Bull. Univ. Mus. Univ. Tokyo 2: 58. 1971; *R. horridulus* J. D. Hooker, Fl. Brit. India 2: 341. 1878, not P. J. Mueller, 1868; *R. pungens* Cambessèdes var. *horridulus* H. Hara): a specimen (at E, not seen) from SE Xizang has been identified as this taxon (Eona Aitken, pers. comm.).

Rubus pekinensis Focke (Annuaire Conserv. Jard. Bot. Genève 20: 104. 1917), described from Hebei: *O. Warburg* 6549.

Rubus rectangulifolius Kuntze (Meth. Sp.-Besch. *Rubus*, 60, 78. 1879), described from China: *G. Staunton s.n.*

Rubus sinosudrei H. Léveillé (Bull. Acad. Int. Géogr. Bot. 24: 251.

Flora of China 9: 195–285. 2003.

1914), described from Guizhou: *J. Esquirol* 3506.

Rubus sweginzowianus Sivers ex Focke (Biblioth. Bot. 17(Heft 72):
188. 1911), described from Gansu: *M. v. Sivers s.n.*

Rubus viburnifolius Franchet (Bull. Mus. Hist. Nat. (Paris) 1: 63. 1895,
not Focke, 1910, nor (Greene) Rydberg, 1913), described from
Yunnan (“Tchen-fong-chan”): *Delavay s.n.*

Flora of China 9: 195–285. 2003.