

2. BAUHINIA Linnaeus, Sp. Pl. 1: 374. 1753.

羊蹄甲属 yang ti jia shu

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Bauhinia sect. *Lasiobema* Korthals; *Lasiobema* (Korthals) Miquel; *Phanera* Loureiro; *Piliostigma* Hochstetter.

Trees, shrubs, or lianas, hermaphroditic, monoecious, andromonoecious, or androdioecious. Leaves simple, bilobed or entire, rarely 2-foliolate with a shared upper pulvinus; primary veins 3–15, midvein ending with a free, small point; stipules caducous. Inflorescences solitary flowers, or many flowers in racemes, panicles, or corymbs; bracts and bracteoles usually small and caducous. Hypanthium cupular, campanulate, or tubular. Calyx closed or open with 5 short or linear teeth at apex in bud, at anthesis spatulate, or regularly or irregularly split into 2–5 lobes. Petals 5, subequal to strongly differentiated, sessile or prominently clawed, white, yellowish orange, pink, or purplish red. Stamens 2, 3, 5, or 10; anthers dorsifixed, longitudinally dehiscent. Staminodes present or not. Ovary 1- to many ovuled, sessile or with stalk; stigma small or prominent, variously shaped. Fruit flat, elliptic, oblong, obovoid, or linear, woody or thinly valved, dehiscent or indehiscent. Seeds few to many; endosperm present or not.

About 300 species: pantropical; 47 species (23 endemic, two introduced) in China.

The key is based on flowering material as there are too many species for which the mature legumes are not known. *Bauhinia tianlinensis* is known only from fruiting material so could not be included in the key. Legumes of China (Zhu et al., 37, 40, 42, 43, 47. 2007) listed a further five species not included in this manuscript: *B. clemensiorum* Merrill from Guangxi; *B. galpinii* N. E. Brown cultivated in Hong Kong; *B. godefroyi* Gagnepain from Yunnan; *B. lakhonensis* Gagnepain from Guangxi; and *B. strychnoidea* Prain ex King from Yunnan.

- 1a. Calyx spatheaceous, splitting along one side or into 2 unequal lobes; trees or shrubs without tendrils; flowers with 5 or 10 fertile stamens (or with female flowers lacking anthers) (*B. purpurea* with 3 fertile stamens).
 - 2a. Petals 0.7–1.2 cm.
 - 3a. Flowers bisexual with 10 unequal fertile stamens and well-developed ovary; petals yellowish; legume 12–20-seeded 8. *B. racemosa*
 - 3b. Flowers unisexual, lacking either functional ovary or fertile anthers; petals white or greenish white; legume 2–10-seeded.
 - 4a. Inflorescence leaf-opposed, 10–15-flowered; stamens ca. 10 mm; legume 6–10-seeded 6. *B. viridescens*
 - 4b. Inflorescence terminal, to 50-flowered, sometimes much condensed; stamens 5–6 mm; legume 2–7-seeded 7. *B. brachycarpa*
 - 2b. Petals 3–8 cm.
 - 5a. Fertile stamens 10; petals white; leaf blade ovate-cordate to cordate.
 - 6a. Leaf blade 3–7 × 4–8 cm, papery, abaxially tomentose 9. *B. tomentosa*
 - 6b. Leaf blade 6–11(–16) × 8–12.5 cm, subleathery, abaxially pubescent.
 - 7a. Young shoots glabrous; leaf bifid to 1/3–2/5; legume sharply ridged near suture 1. *B. acuminata*
 - 7b. Young shoots brownish pubescent or hirsute; leaf bifid to 1/4; legume not ridged near suture 3. *B. hirsuta*
 - 5b. Fertile stamens 3 or 5; petals pink, purple, or white with pink spots, occasionally all white; leaf blade orbicular, suborbicular, or broadly ovate.
 - 8a. Fertile stamens 3, staminodes 5 or 6; leaf bifid to 1/3–1/2, lobes slightly acute or rarely rounded at apex 4. *B. purpurea*
 - 8b. Fertile stamens 5, staminodes 1–5, sometimes absent; leaf bilobed to 1/4–1/3, lobes rounded or narrowly rounded.
 - 9a. Petals purplish, 5–8 cm; sterile hybrid not forming fruit 2. *B. ×blakeana*
 - 9b. Petals white, often with pink or purple spots, 4–5 cm; legume linear, 15–25 × 1.5–2 cm 5. *B. variegata*
- 1b. Calyx with 4 or 5 ± equal lobes; lianas usually with tendrils (*B. bohniana* an erect shrub 1–2 m high); flowers with 2 or 3 fertile stamens.
 - 10a. Leaves 2-foliolate, primary veins 3–5 per lobe.
 - 11a. Shoots hairy; leaf lobes acuminate; receptacle ca. 5 mm 37. *B. carcinophylla*
 - 11b. Shoots glabrous; leaf lobes obtuse; receptacle 7–12 mm.
 - 12a. Tendrils solitary; receptacle 10–12 mm; petals white, broadly obovate, ca. 9 mm 42. *B. didyma*
 - 12b. Tendrils paired; receptacle 7–8 mm; petals pinkish with dark red stripes, spatulate, ca. 17 mm 24. *B. yunnanensis*
 - 10b. Leaves entire or bifid for up to 1/2 length.
 - 13a. Leaves entire to shallowly bifid for up to 1/6 length, primary veins 3–9.
 - 14a. Petals orange or reddish, 25–30 mm 23. *B. coccinea*
 - 14b. Petals white or greenish white (color not recorded for *B. cercidifolia* or *B. wuzhengyii*), 2.5–10 mm.

- 15a. Leaf blade abaxially glabrous or nearly so.
- 16a. Leaf blade 1.5–4 cm; inflorescence a simple raceme, 5–9 cm 20. *B. venustula*
- 16b. Leaf blade 4.6–10 cm; inflorescence a panicle, or if unbranched then more than 10 cm.
- 17a. Leaf blade with primary veins 3–5, base attenuate or rounded; petals 4–10 mm; tendrils rare or apparently absent.
- 18a. Petals 4–5 mm; leaf base rounded 27. *B. paucinervata*
- 18b. Petals 7–10 mm; leaf base attenuate 31. *B. wuzhengyii*
- 17b. Leaf blade with primary veins usually 7–9, base shallowly cordate to truncate; petals 2.5–3 mm; tendrils usually present.
- 19a. Fertile stamens 3; petiole 2–4 cm; leaf blade 4–8 cm wide, papery; pedicel 3–4 mm 13. *B. scandens*
- 19b. Fertile stamens 2; petiole 4.5–5 cm; leaf blade 9–11 cm wide, leathery; pedicel ca. 18 mm 15. *B. cercidifolia*
- 15b. Leaf blade abaxially pubescent.
- 20a. Inflorescence 7–25 cm, pedicels 3.5–15 mm; petals 3.5–6 mm; staminodes 2.
- 21a. Pedicel 3.5–4 mm 19. *B. lingyuenensis*
- 21b. Pedicel 10–15 mm.
- 22a. Leaf blade ovate or cordate; petals spatulate 17. *B. championii*
- 22b. Leaf blade suborbicular; petals obovate or oblong 10. *B. longistipes*
- 20b. Inflorescence 3.5–8 cm, pedicels 15–22 mm; petals 6–10 mm; staminodes 7: 2 longer and free, others joined at base (not recorded for *B. apertilobata*).
- 23a. Flower bud ellipsoid with protruding apex; receptacle broadly funnelliform; petals spatulate 16. *B. apertilobata*
- 23b. Flower bud ovoid; receptacle cylindric or elongate; petals subrhombic, broadly obovate, or elliptic.
- 24a. Leaf blade 5–8 × 4–6.5 cm; receptacle 8–9 mm; petals unequal, 3 rhombic, 2 elliptic, claw 3–4 mm 44. *B. quinnanensis*
- 24b. Leaf blade 3–4 × 2–3 cm; receptacle ca. 15 mm; petals subrhombic, broadly obovate, or elliptic, claw 6–8 mm 46. *B. ovatifolia*
- 13b. Leaves bifid for more than 1/5 length, primary veins 7–13.
- 25a. Erect shrubs, tendrils absent; petals pink 25. *B. bohniana*
- 25b. Lianas, tendrils present; petals white or light yellowish, rarely with pink veins or reddish base, or red or golden yellow (sometimes pale pink in *B. hainanensis*).
- 26a. Ovary glabrous.
- 27a. Leaf blade bifid for more than 1/2 length.
- 28a. Inflorescence ca. 5 cm; bracts and bracteoles ca. 3 mm; petals white with pink veins; legume 10–25 cm 41. *B. corymbosa*
- 28b. Inflorescence 10–30 cm; bracts and bracteoles 5–9 mm, brushlike in young inflorescences; petals yellow or whitish yellow; legume 5–8 cm.
- 29a. Flower buds ovoid; staminodes 2; floral disk annular 11. *B. comosa*
- 29b. Flower buds conical; staminodes 4; floral disk U-shaped 12. *B. esquirolii*
- 27b. Leaf blade bifid for 1/5–1/2 length.
- 30a. Fertile stamen filament 25–30 mm; receptacle 3–5 mm; leaf blade 8–18 cm.
- 31a. Pedicel 1–1.5 cm; calyx lobes not reflexed, one free, others in 2 adnate parts, ca. 6 mm; staminodes 2 28. *B. hainanensis*
- 31b. Pedicel 2–2.8 cm; calyx lobes reflexed at anthesis, ovate, ca. 10 mm; staminodes 5–7 21. *B. chalcophylla*
- 30b. Fertile stamen filament 8–12 mm; receptacle 7–15(–30) mm; leaf blade 4–6(–9) cm.
- 32a. Shoots glabrous; calyx lobes 5; legume 12–15 cm 45. *B. damiaoshanensis*
- 32b. Shoots reddish pubescent when young; calyx lobes 2 or 3; legume 18–25 cm 40. *B. glauca*
- 26b. Ovary hairy, at least on sutures.
- 33a. Leaf blade abaxially glabrous.
- 34a. Stems glabrous; leaf blade with yellowish margin 29. *B. japonica*
- 34b. Stems hairy at least when young; leaf blade uniformly green.
- 35a. Leaf blade 10–15 cm wide, bifid for up to 1/5 length; pedicel

- ca. 1.5 cm 30. *B. wallichii*
- 35b. Leaf blade 5–10 cm wide, bifid for at least 1/2 length; pedicel 4–5 cm 36. *B. erythropoda*
- 33b. Leaf blade abaxially hairy at least on veins.
- 36a. Leaf blade 9–18(–20) cm wide, abaxially tomentose when young.
- 37a. Leaf blade abaxially thickly golden tomentose, primary veins 15–17; inflorescence conical; pedicel 0.9–1 cm 33. *B. hypochrysa*
- 37b. Leaf blade abaxially rusty or yellow-brown tomentose, primary veins 9–13; inflorescence ± flat-topped to rounded; pedicel 2–5 cm.
- 38a. Petiole 8–11 cm; bracts persistent 39. *B. ornata*
- 38b. Petiole 1.2–7 cm; bracts caducous.
- 39a. Leaf blade 12–18(–23) cm 35. *B. aurea*
- 39b. Leaf blade 9–12.5 cm 34. *B. rubrovillosa*
- 36b. Leaf blade 3.5–9(–12) cm wide, abaxially pubescent when young.
- 40a. Petals red or golden yellow 26. *B. khasiana*
- 40b. Petals white, sometimes reddish at base or tinged yellow or green.
- 41a. Petals 4–6 mm.
- 42a. Leaf blade bifid to 1/6–1/5 of length; bracts 6–9 mm; lower pedicels to 20 mm 43. *B. touranensis*
- 42b. Leaf blade bifid to 1/3–1/2 of length; bracts 3–4 mm; lower pedicels 3–5 mm.
- 43a. Flower bud ca. 2 mm; leaf blade and legume valves leathery 14. *B. delavayi*
- 43b. Flower bud ca. 5 mm; leaf blade papery; legume valves woody 18. *B. hypoglauca*
- 41b. Petals 15–30 mm.
- 44a. Calyx lobes 2 or 3; petals to 15 mm, apex acute 38. *B. calciphila*
- 44b. Calyx lobes 5; petals 20–30 mm, apex emarginate.
- 45a. Inflorescence conical; pedicel 0.7–3 cm; calyx lobes not reflexed 32. *B. pyrrhoclada*
- 45b. Inflorescence ± flat-topped; pedicel 4–5 cm; calyx lobes reflexed.
- 46a. Calyx lobes ca. 12 mm; filaments 15–17 mm, lower part pubescent 36. *B. erythropoda*
- 46b. Calyx lobes 25–30 mm; filaments ca. 35 mm, glabrous 22. *B. nervosa*

1. *Bauhinia acuminata* Linnaeus, Sp. Pl. 1: 376. 1753.

白花羊蹄甲 bai hua yang ti jia

Shrubs or small trees, to 3 m tall. Young branches zigzag, glabrous. Petiole 2.5–4 cm, pubescent; leaf blade ovate-cordate to cordate, 9–12 × 8–12.5 cm, subleathery, abaxially grayish pubescent, adaxially glabrous, primary veins 9–11, secondary and higher order veins protruding, base cordate, apex bifid to 1/3–2/5, lobes acuminate or slightly acute at apex or rarely rounded. Inflorescence a raceme, with few (3–15) flowers, axillary, appearing cymose; peduncle short, pubescent as inflorescence axis; bracts and bracteoles linear, pubescent. Flower buds ca. 2.5 cm, acutely tapering and ending in 5 linear calyx teeth ca. 3 mm. Hypanthium tubular. Calyx spathe open on one side, shortly 5-toothed. Petals white, obovate-elliptic, 3.5–5 × ca. 2 cm, sessile. Fertile stamens 10 in 2 whorls, subequal, 1.5–2.5 cm, pubescent on lower 1/3; anthers yellow, oblong. Ovary prominently stalked, pubescent or almost glabrous; style 15–20 mm; stigma peltate, ca. 3 mm in diam. Legume straight or slightly curved, linear-oblongate, compressed, 6–12 × ca. 1.5 cm, with stalk ca. 1 cm, apex acuminate, beaked; valves leathery, glabrous, sharply ridged near suture. Seeds 5–12, compressed, 8–10 mm in diam. Fl. Apr–Jun, fr. Jun–Aug.

Guangdong, Guangxi, Yunnan [Cambodia, India, Indonesia, Laos, Malaysia (Peninsular), Philippines, Sri Lanka, Thailand, Vietnam].

2. *Bauhinia* × *blakeana* Dunn, J. Bot. 46: 325. 1908.

红花羊蹄甲 hong hua yang ti jia

Trees. Branches numerous; branchlets slender, pubescent. Petiole 3.5–4 cm, brownish pubescent; leaf blade orbicular or suborbicular, 8.5–13 × 9–14 cm, leathery, abaxially puberulent, adaxially glabrous, primary veins 11–13, base cordate or truncate, apex bilobed to 1/4–1/3, lobes rounded or narrowly rounded. Inflorescence racemose, terminal or axillary, or several racemes together forming a panicle, pubescent; bracts and bracteoles triangular, ca. 3 mm. Floral buds fusiform. Hypanthium tubular. Calyx spathe ca. 2.5 cm, with greenish or light reddish ridges. Petals purplish, lanceolate, 5–8 × 2.5–3 cm, shortly clawed. Fertile stamens 5, with 3 longer. Staminodes 2–5, threadlike. Ovary prominently stalked, pubescent. Legume not produced. Fl. Nov–Mar.

Frequent in Fujian, Guangdong, Guangxi, Taiwan, and Yunnan [widely cultivated].

This is a hybrid between *Bauhinia purpurea* and *B. variegata*.

First collected from a garden in Hong Kong, it is now widely cultivated in the tropics as an ornamental tree.

3. *Bauhinia hirsuta* Weinmann in Hornschuch, Syll. Pl. Nov. 2: 9. 1825.

粗毛羊蹄甲 cu mao yang ti jia

Bauhinia acuminata Linnaeus var. *hirsuta* (Weinmann) Craib.

Shrubs, to 3 m tall. Young branches brownish pubescent or hirsute. Stipules linear or spinelike, ca. 1 cm; petiole 2–5 cm, ridged; leaf blade broadly ovate or cordate, 6–11(–16) × 6–11 cm, subleathery, abaxially pubescent, adaxially glabrous, primary veins 9, base shallowly cordate, apex bifid to 1/4, lobes obtuse at apex. Inflorescence a short raceme, few (2–5) flowered, axillary or terminal; bracts and bracteoles linear, 3–6 mm, pubescent. Flower buds narrowly fusiform, pubescent, acuminate at apex, tapering into 5 linear, pubescent teeth 2–5 mm. Hypanthium tubular. Calyx spathe open on one side. Petals white, ovate-oblong, 3–3.5 × ca. 1.5 cm, subsessile. Fertile stamens 10 in 2 whorls, subequal, to 2 cm, pubescent at base; anthers yellow, oblong. Ovary stalked, pubescent only near base and on margin; style to 2 cm, glabrous; stigma peltate, small. Legume straight or slightly curved, linear-oblancoolate, 6–9 × ca. 1.5 cm, compressed, beaked; valves leathery, glabrous, without ridges on suture. Seeds 3–10, compressed, ca. 8 mm in diam. Fl. Apr, fr. Jun–Aug.

Yunnan [from SE Asia and Peninsular Malaysia to Indonesia (Java)].

4. *Bauhinia purpurea* Linnaeus, Sp. Pl. 1: 375. 1753.

羊蹄甲 yang ti jia

Trees or erect shrubs, 7–10 m tall. Bark grayish to dark brownish, thick, smooth; branches puberulent when young, later glabrous. Petiole 3–4 cm; leaf blade suborbicular, 10–15 × 9–14 cm, stiffly papery, abaxially almost glabrous, adaxially glabrous, primary veins 9–11, secondary and higher order veins protruding, base shallowly cordate, apex bifid to 1/3–1/2, lobes slightly acute or rarely rounded at apex. Inflorescence a raceme with few flowers, or a panicle with up to 20 flowers, axillary or terminal. Flower buds fusiform, 4- or 5-ridged, with an obtuse apex. Pedicel 7–12 mm. Calyx open as a spathe into 2 lobes, one with 2 teeth and other 3-toothed. Petals light pink, oblancoolate, 4–5 cm, clawed. Fertile stamens 3; filaments ca. as long as petals. Staminodes 5 or 6, 6–10 mm. Ovary stalked, velvety; style curved; stigma slightly enlarged, peltate. Legume linear, flat, 12–25 × 2–2.5 cm; valves woody. Seeds compressed, suborbicular, 12–15 mm in diam. Fl. Sep–Nov, fr. next Feb–Mar. $2n = 28$.

Widely cultivated as ornamental trees. Fujian, Guangdong, Guangxi, Hainan, Taiwan, Yunnan [probably only native from Nepal through continental monsoon Asia (Cambodia, Laos, Myanmar, Thailand, Vietnam)].

5. *Bauhinia variegata* Linnaeus, Sp. Pl. 1: 375. 1753.

洋紫荆 yang zi jing

Trees, deciduous, to 15 m tall. Bark dark brownish, nearly

smooth; branches gray puberulent when young, later glabrous. Petiole 2.5–3.5 cm; leaf blade suborbicular or broadly ovate, 5–9 × 7–11 cm, subleathery, abaxially almost glabrous, adaxially glabrous, primary veins 9–13, secondary and higher order veins protruding, base shallowly to deeply cordate, apex bifid to 1/3, lobes rounded at apex. Inflorescence a raceme, few flowered, sometimes corymblike, axillary or terminal. Flower buds fusiform, smooth, subsessile. Calyx open as a spathe into 2 lobes. Petals white, or with pink or purplish spots, obovate or oblancoolate, 4–5 cm, clawed. Fertile stamens 5; filaments ca. as long as petals, slender. Staminodes 1–5 and small, or ?absent. Ovary stalked, puberulent; style curved; stigma small. Legume linear, flat, 15–25 × 1.5–2 cm; valves woody. Seeds 10–15, compressed, suborbicular, ca. 10 mm in diam. Fl. Feb–May, fr. Mar–Jul. $2n = 28$.

Tropical forests, also cultivated; 1000–1500 m. Native in S Yunnan (Xishuangbanna); widely cultivated in S China [Cambodia, Laos, Myanmar, Thailand, Vietnam; widely cultivated in the tropics and subtropics].

1a. Petals with colored spots 5a. var. *variegata*

1b. Petals white 5b. var. *candida*

5a. *Bauhinia variegata* var. *variegata*

洋紫荆(原变种) yang zi jing (yuan bian zhong)

Bauhinia variegata var. *chinensis* Candolle; *Phanera variegata* (Linnaeus) Benth.

Petals with colored spots. Staminodes 1–5.

Tropical forests, also cultivated; 1000–1500 m. Native in S Yunnan (Xishuangbanna); widely cultivated in S China [Cambodia, Laos, Myanmar, Thailand, Vietnam; widely cultivated in the tropics and subtropics].

5b. *Bauhinia variegata* var. *candida* (Aiton) Voigt, Hort. Suburb. Calcutt. 253. 1845.

白花洋紫荆 bai hua yang zi jing

Bauhinia candida Aiton, Hort. Kew. 2: 49. 1789; *B. variegata* var. *alboflava* de Wit.

Petals white. Staminodes ?absent. $2n = 28^*$.

• Tropical forests, also cultivated. Native in S Yunnan (Xishuangbanna); widely cultivated in S China.

Two of us (Larsens) note that the absence of staminodes needs to be checked on Chinese materials as this is not the case for the species in SE Asia.

6. *Bauhinia viridescens* Desvaux, Ann. Sci. Nat. (Paris) 9: 429. 1826.

绿花羊蹄甲 lü hua yang ti jia

Bauhinia laui Merrill; *B. polycarpa* Wallich ex Benth.; *B. viridescens* var. *laui* (Merrill) T. C. Chen.

Shrubs or small trees, to 3 m tall, dioecious. Young branches pubescent; older branches whitish. Stipules narrowly triangular and tapering, ca. 2 mm; petiole 2–3.5 cm; leaf blade suborbicular, 5–9 × 6–10 cm, papery, abaxially pubescent, adax-

ially glabrous, primary veins 7–9, base truncate or shallowly cordate, apex bifid to 1/2, lobes obtuse at apex. Inflorescence a raceme, 4–8 cm, 10–15-flowered, opposite with leaves; bracts 2–3 mm, pubescent. Flower buds narrowly fusiform, 6–10 mm. Hypanthium turbinate, short. Calyx spathe open on one side. Petals greenish white, obovate-lanceolate, 7–12 mm, shortly clawed. Male flower: fertile stamens 10 in 2 whorls, subequal, ca. 10 mm; anthers oblong, 1–2 mm. Female flower: reduced stamens present; ovary shortly stalked, 6–8 mm; style short; stigma peltate, small. Legume straight or slightly curved, linear, compressed, 5–7 × 0.7–1 cm, beaked; valves leathery, glabrous. Seeds 6–10, green, ellipsoid, slightly compressed, ca. 3 mm in diam. Fl. Mar–Jul, fr. May–Jan.

Open forests; low elevations. Hainan, Yunnan [Cambodia, Laos, Malaysia, Myanmar, Vietnam].

7. *Bauhinia brachycarpa* Wallich ex Benth in Miquel, Pl. Jungh. 261. 1852.

鞍叶羊蹄甲 an ye yang ti jia

Bauhinia altefissa H. Léveillé, p.p.; *B. bonatiana* Pampanini; *B. brachycarpa* var. *cavaleriei* (H. Léveillé) T. C. Chen; *B. brachycarpa* var. *densiflora* (Franchet) K. Larsen & S. S. Larsen; *B. brachycarpa* var. *microphylla* (Oliver ex Craib) K. Larsen & S. S. Larsen; *B. cavaleriei* H. Léveillé; *B. densiflora* Franchet; *B. enigmatica* Prain; *B. faberi* Oliver; *B. faberi* var. *megaphylla* Tang & Wang; *B. faberi* var. *microphylla* Oliver ex Craib.

Shrubs, erect or spreading, or small trees, to 5 m tall, dioecious or androdioecious. Branches slender, puberulent when young, glabrous later. Stipules caducous, linear; petiole 1–6 cm; leaf blade suborbicular, 0.8–12 × 1–10 cm, papery or membranous, abaxially puberulent, adaxially glabrous or puberulent, primary veins 5–13, base truncate or shallowly cordate, apex bifid to ca. 1/2, lobes rounded at apex. Inflorescence a raceme, to 50-flowered, sometimes much condensed, terminal; bracts caducous, linear. Flower buds ellipsoid, puberulent. Hypanthium turbinate, short. Calyx open as a spathe into 2 lobes. Petals white, obovate to oblanceolate, 7–8 mm, shortly clawed. Male flowers: fertile stamens 10 in 2 whorls; filaments 5–6 mm; reduced ovary small. Female flowers: reduced stamens 10; ovary hairy, shortly stalked; style stout; stigma peltate. Legume elliptic to oblanceolate, compressed, leathery, puberulent or nearly glabrous, dehiscent. Seeds 2–7, suborbicular, compressed. Fl. May–Jul, fr. Aug–Oct.

Open forests, dry mountain slopes; sea level to 3200 m. Chongqing, Gansu, Guangxi, Guizhou, Hubei, Shaanxi, Sichuan, Xizang, Yunnan [Laos, Myanmar, Thailand].

This is a polymorphic species, widely distributed in W China from Xishuangbanna in the south to Gansu in the north. At lower elevations and latitudes, as a small tree in open forests, its leaves can be much larger, but in habitats at higher elevations and latitudes, especially on slopes in dry river valleys, it is a small shrub no more than 30 cm tall, with leaves not exceeding 1 cm in diam.

8. *Bauhinia racemosa* Lamarck, Encycl. 1: 390. 1785.

总状花羊蹄甲 zong zhuang hua yang ti jia

Bauhinia parviflora Vahl; *Piliostigma racemosum* (Lamarck) Benth.

Trees, deciduous, small, to 15 m tall. Bark blackish, rough; branches spreading or pendulous, zigzag, slender, glabrous. Stipules caducous; petiole 0.8–1.2 cm; leaf blade broadly orbicular, 1.5–4 × 2.2–6 cm, 7–9-veined, leathery, abaxially pubescent or glabrous, adaxially glabrous, base cordate, apex bifid to ca. 1/3, lobes rounded at apex. Inflorescence a lateral or terminal raceme, ca. 20-flowered; peduncle short; bracts and bracteoles linear. Flower buds obovoid, puberulent, apex protruding. Hypanthium turbinate, short. Calyx split spathaceously at anthesis. Petals yellowish, subequal, oblanceolate, 8–10 mm, subsessile. Fertile stamens 10, unequal; filaments 6–7 mm; anthers small, ca. 3 mm. Ovary stalked, glabrous; stigma subsessile, peltate, small. Legume linear-cylindric, 15–20 × 1.8–2.2 cm; valves woody, glabrous. Seeds 12–20, dark brownish, ellipsoid, 8–10 mm in diam. Fl. Apr–May, fr. Jun–Aug. $2n = 28$.

Dry river valleys. Yunnan [Cambodia, NE India, Myanmar, Thailand, Vietnam].

9. *Bauhinia tomentosa* Linnaeus, Sp. Pl. 1: 375. 1753.

黄花羊蹄甲 huang hua yang ti jia

Shrubs, erect, to 4 m tall. Young branches puberulent. Stipules linear, ca. 1 cm; petiole 1.5–3 cm, slender; leaf blade suborbicular, 3–7 × 4–8 cm, papery, abaxially tomentose, adaxially glabrous, base cordate, 7–9-veined, apex bifid to ca. 1/2, lobes rounded at apex. Inflorescence a lateral raceme, 1–3-flowered; pedicel short; bracts and bracteoles linear, 4–7 mm. Flower buds fusiform, ca. 2 cm, puberulent. Hypanthium turbinate, ca. 5 mm. Calyx split spathaceously at anthesis. Petals light yellowish, subequal, broadly obovate, 4–5.5 × 3–4 cm, subsessile. Fertile stamens 10, unequal; filaments 1–2 cm, puberulent at base. Ovary stalked, tomentose; style slender, glabrous; stigma peltate, small. Legume flat, linear, 7–15 × 1.2–1.5 cm, sutures not ridged; valves leathery, velutinous. Seeds brownish, suborbicular, compressed, 6–8 mm in diam. Fl. and fr. almost year-round. $2n = 28$.

Widely cultivated as ornamental plants in China. Fujian, Guangdong, Guangxi, Hainan, Taiwan, Yunnan [origin in tropical Asia, probably indigenous to India; cultivated elsewhere].

10. *Bauhinia longistipes* T. C. Chen, Guihaia 8: 43. 1988.

长柄羊蹄甲 chang bing yang ti jia

Lianas, woody. Stems canaliculate or angulate, brownish puberulent; tendrils compressed when young, later cylindrical. Stipules caducous; petiole 1.5–2 cm; leaf blade suborbicular, 3.5–4.5 × 3–5 cm, papery, abaxially pubescent when young, later glabrous, adaxially glabrous, primary veins 7, base truncate or cordate, apex bifid to only 1/6, lobes obtuse or rounded at apex. Inflorescence an elongated raceme, 10–20 cm, more than 50-flowered, axillary, or a terminal panicle of 2 or 3 racemes; bracts linear, ca. 5 mm; bracts and bracteoles brush-like in young inflorescences. Flower buds ellipsoid, ca. 3 mm, apex open with 5 teeth. Hypanthium cupular. Flowers small, 3 or 4 whorls per inflorescence node; pedicel 10–15 mm, slender, pubescent. Calyx lobes 5, triangular-lanceolate, 2–2.5 mm, out-

side pubescent. Petals subequal, obovate or oblong, 3.5–4 × 1.5–2.8 mm including a claw 1–1.5 mm, outside from middle to apex hairy. Fertile stamens 3; filaments 6–7 mm, glabrous. Staminodes 2. Floral disk annular, with lobes, fleshy, swollen. Ovary glabrous, with a slender stalk, oblique; style ca. as long as ovary stalk; stigma capitate, small. Legume unknown. Fl. Aug.

- Riverbanks; ca. 1300 m. Yunnan.

11. *Bauhinia comosa* Craib, Bull. Misc. Inform. Kew 1913: 352. 1913.

川滇羊蹄甲 chuan dian yang ti jia

Bauhinia henryi Harms (1921), not Craib (1913); *B. mairei* Harms; *B. saxatilis* Craib; *Lasiobema comosa* (Craib) A. Schmitz.

Lianas, woody. Branches brownish puberulent; tendrils solitary or in pairs. Stipules caducous; petiole 2–3 cm; leaf blade broadly ovate or suborbicular, 3–6 × 2.8–6.5 cm, rigidly papery, abaxially glabrous or puberulent when young, adaxially glabrous, primary veins 7–9, base cordate or truncate, apex bifid to more than 1/2, lobes obtuse or rounded at apex. Inflorescence an elongated raceme, 10–20 cm, many flowered, terminal; bracts and bracteoles linear, 5–8 mm, brushlike in young inflorescences. Pedicel 8–13 mm. Flower buds ovoid, apex open with 5 teeth. Hypanthium cupular, 2–3 mm. Calyx lobes 5, reflexed at anthesis, broadly lanceolate, ca. 5 mm, outside pubescent. Petals yellow or whitish yellow, subequal, obovate or oblong, ca. 7 mm, outside hairy along midvein, shortly clawed or subsessile, apex acute, obtuse, or rounded. Fertile stamens 3; filaments 6–7 mm, glabrous. Staminodes 2, much reduced. Floral disk annular, fleshy, swollen. Ovary stalked, glabrous, oblique; style ca. as long as ovary stalk; stigma capitate, small. Legume linear-oblong, ca. 7 × 2 cm; valves woody, glabrous. Seeds ellipsoid, compressed, ca. 10 × 7–8 mm. Fl. Aug–Sep, fr. Nov–Dec.

- Rocky hills, disturbed habitats on slopes. Sichuan, Yunnan.

12. *Bauhinia esquirolii* Gagnepain, Notul. Syst. (Paris) 2: 171. 1912.

元江羊蹄甲 yuan jiang yang ti jia

Lasiobema esquirolii (Gagnepain) de Wit.

Lianas, woody. Branches cylindrical, puberulent; tendrils in pairs. Stipules caducous; petiole 1.5–2 cm, stout; leaf blade broadly ovate or orbicular, 4–7 × 4–6.5 cm, papery, abaxially yellowish white puberulent, adaxially puberulent when young, later glabrous, primary veins usually 9, base shallowly or deeply cordate, apex bifid to more than 1/2, lobes triangular with obtuse apices. Inflorescence an elongated raceme, 10–30 cm, many flowered, terminal; bracts and bracteoles linear, 7–9 mm, brushlike in young inflorescences; rachis angulate. Pedicel ca. 15 mm. Flower buds conical, acute, apex open with 5 teeth. Receptacle tapering to pedicel; calyx lobes 5, lanceolate, 5–6 mm, outside pubescent, tapering to apex, joined from middle. Petals yellow or whitish yellow, subequal, oblanceolate, ca. 7 mm, outside hairy, cucullate, clawed, apex acute. Fertile sta-

mens 3; filaments 6–7 mm, glabrous; anthers oblong. Staminodes 4, much reduced to less than 1 mm. Floral disk fleshy, swollen, U-shaped. Ovary stalked, oblique, glabrous; style ca. as long as ovary stalk, stout; stigma small, truncate. Legume linear-oblong, 5–8 × 1.5–1.7 cm; valves woody, light brownish when dried. Seeds 2–5, suborbicular, compressed, ca. 9 mm in diam. Fl. Sep–Nov, fr. Nov–Dec.

- Open forests on hills. Guizhou, Yunnan.

13. *Bauhinia scandens* Linnaeus, Sp. Pl. 1: 374. 1753.

攀缘羊蹄甲 pan yuan yang ti jia

Bauhinia anguina Roxburgh; *B. anguina* var. *horsfieldii* Watt ex Prain; *B. horsfieldii* (Miquel) J. F. Macbride; *B. japonica* Maximowicz var. *subrhombicarpa* (Merrill) Hiroe; *B. scandens* var. *horsfieldii* (Watt ex Prain) K. Larsen & S. S. Larsen; *B. subrhombicarpa* Merrill; *Lasiobema anguina* (Roxburgh) Korthals ex Miquel; *L. horsfieldii* Miquel; *L. scandens* (Linnaeus) de Wit; *L. scandens* var. *horsfieldii* (Watt ex Prain) de Wit.

Lianas, large, woody. Branches cylindrical when young, appanate when old, forming “monkey ladders,” puberulent, later glabrous; tendrils in pairs, puberulent. Stipules caducous; petiole 2–4 cm, slender; leaf blade ovate to broadly ovate, 5–9 × 4–8 cm, papery, both surfaces glabrous, primary veins usually 7–9, base shallowly cordate to truncate, entire on flowering branches, apex bifid to more than 1/2 in sterile or juvenile branches, lobes with obtuse or acuminate apices. Inflorescence an elongated raceme, 10–15 cm, many flowered, or several joined in a panicle 15–25 cm, terminal, puberulent; bracts and bracteoles linear. Pedicel 3–4 mm, slender. Flower buds ovoid, 1.8–2 mm in diam., apex open. Calyx lobes 5, triangular, outside pubescent. Petals white, subequal, obovate to oblanceolate, ca. 3 mm, shortly clawed. Fertile stamens 3; filaments glabrous. Staminodes 2. Floral disk fleshy, swollen. Ovary shortly stalked, oblique, glabrous; style stout; stigma small. Legume rhombic to oblong, 1.8–3 × 1–1.6 cm, indehiscent or tardily dehiscent; valves thin, reticulate veined. Seeds 1 or 2(–4), ellipsoid to obovoid-orbicular, ca. 8 mm in diam. Fl. Oct, fr. Dec.

Disturbed forests in valleys, among shrubs in coastal habitats. Hainan [Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam].

14. *Bauhinia delavayi* Franchet, Pl. Delavay. 192. 1890.

薄荚羊蹄甲 bao jia yang ti jia

Lasiobema delavayi (Franchet) A. Schmitz.

Lianas, woody. Branches slender; young branches angulate, puberulent; tendrils in pairs, slightly compressed, brownish or grayish pubescent. Stipules caducous; petiole 2–4.5 cm, puberulent; leaf blade suborbicular, 5–8 × 4–8 cm, subleathery, abaxially throughout puberulent when young, only veins puberulent when old, adaxially glabrous, primary veins 7–9, base shallowly or deeply cordate, broadly bifid to 1/3–2/5; lobes ovate, with acute, acuminate, or obtuse apices. Inflorescence an axillary raceme or terminal panicle composed of 2 or 3 racemes 6–20 cm, many flowered; bracts and bracteoles linear, 2–4 mm,

brushlike in young inflorescences; inflorescence rachis, pedicels, and calyx grayish or brownish pubescent. Pedicel 3–4 mm. Flower buds ellipsoid, ca. 2 mm. Calyx mouth 5-toothed; receptacle ca. 3 mm; calyx lobes 5, persistent, triangular. Petals white, subequal, broadly elliptic, ca. 5 mm, cucullate, tapering into a short claw. Fertile stamens 3; filaments ca. 5 mm; anthers oblong. Staminodes 2 or 3, ca. 1.5 mm. Floral disk fleshy, swollen, lobed. Ovary shortly stalked, oblique, puberulent, becoming glabrous; style incurved, stout; stigma small, truncate. Legume subelliptic or oblong, compressed, 2–7 × 1.5–2 cm; valves leathery, thin. Seeds 2–5, suborbicular, compressed. Fl. Sep–Nov, fr. Nov–Dec.

- Open forests, disturbed hillsides. Yunnan.

15. *Bauhinia cercidifolia* D. X. Zhang, *Nordic J. Bot.* 13: 399. 1993.

紫荆叶羊蹄甲 *zi jing ye yang ti jia*

Lianas, with tendrils. Branches angulate, puberulent when young, glabrous when older. Stipules caducous; petiole 4.5–5 cm, puberulent; leaf blade broadly ovate, 8–10 × 9–11 cm, leathery, base cordate, both surfaces glabrous, primary veins 7–9, veins convex on both surfaces, apex entire or emarginate. Inflorescence a panicle with lax racemes, puberulent; bracts subulate, ca. 2.5 mm; bracteoles similar but smaller, inserted at middle of pedicel. Pedicel ca. 1.8 cm. Flower buds subovoid, ca. 2.5 mm in diam. Hypanthium short. Calyx not closed at tip; calyx segments 5, elliptic, apex acute. Petals subequal, subobovate, ca. 2.5 × 2 mm, not clawed, both surfaces pubescent. Fertile stamens 2. Staminodes small. Legume unknown. Fl. Jun.

- Open habitats on karst hills. Guangxi (Long'an).

16. *Bauhinia apertilobata* Merrill & F. P. Metcalf, *Lingnan Sci. J.* 16: 83. 1937.

阔裂叶羊蹄甲 *kuo lie ye yang ti jia*

Bauhinia championii (Benth) Benth var. *apertilobata* (Merrill & F. P. Metcalf) Hiroe.

Lianas, woody, with tendrils. Young branches, petioles, and inflorescences pubescent. Stipules caducous; leaf blade ovate, broadly elliptic, or suborbicular, 5–10 × 4–9 cm, papery, abaxially brownish puberulent, losing most of pubescence upon maturing, adaxially subglabrous or thinly puberulent, primary veins 7–9, base rounded, truncate, or cordate, shallowly bifid with very broadly divergent lobes; leaves on flowering branches only slightly bifid or nearly truncate. Inflorescence 1 or 2 racemes, terminal or axillary, 4–8 × 4–7 cm; bracts linear, 4–7 mm; bracteoles small, inserted at middle of pedicels. Pedicel 1.8–2.2 cm. Flower buds ellipsoid, with a protruding apex, apex closed. Receptacle broadly funnelform; calyx lobes 5, lanceolate, reflexed upon anthesis. Petals whitish or greenish white, subequal, spatulate, 7–10 mm, shortly clawed. Fertile stamens 3; filaments 6–9 mm, glabrous. Ovary hairy on sutures, shortly stalked; style short; stigma small. Legume thin, compressed, 2–7 × 1.5–2 cm; valves thin, glabrous. Seeds compressed, suborbicular. Fl. May–Jul, fr. Aug–Nov.

- Valleys, hillsides, open forests, thickets; 300–600 m. Fujian, Guangdong, Guangxi, Guizhou, Jiangxi.

17. *Bauhinia championii* (Benth) Benth, *Fl. Hongk.* 99. 1861 [*“championii”*].

龙须藤 *long xu teng*

Phanera championii Benth, *Hooker's J. Bot. Kew Gard. Misc.* 4: 78. 1852 [*“championii”*]; *Bauhinia championii* var. *acutifolia* L. Chen; *B. championii* var. *yingtakensis* (Merrill & F. P. Metcalf) T. C. Chen; *B. hunanensis* Handel-Mazzetti; *B. yingtakensis* Merrill & F. P. Metcalf; *Lasiobema championii* (Benth) de Wit; *L. hunanensis* (Handel-Mazzetti) de Wit.

Lianas, with tendrils. Young branches and inflorescences puberulent. Stipules caducous; petiole 1–2.5 cm, slender; leaf blade ovate or cordate, 3–10 × 2.5–9 cm, papery to leathery, abaxially pubescent when young, pubescent or glabrous when old, adaxially glabrous, primary veins 5–9, base truncate to cordate; leaves on flowering branches entire with apex acute, obtuse, or emarginate, while those on sterile branches or juvenile branches usually deeply bilobed; lobes acute, acuminate, or obtuse at apex. Inflorescence a solitary raceme or several racemes joined in a panicle, terminal or axillary, 7–25 cm; bracts and bracteoles small. Pedicel 10–15 mm, slender. Flower buds ellipsoid, 2.5–3 mm; open flowers ca. 8 mm in diam. Receptacle funnelform, ca. 2 mm; calyx lobes 5, lanceolate, ca. 3 mm. Petals white, spatulate, 4–6 mm, outside pubescent along midvein, clawed. Fertile stamens 3; filaments ca. 6 mm, glabrous. Staminodes 2. Ovary shortly stalked, hairy on sutures; style short; stigma small. Legume obovoid-oblong, compressed, 7–12 × 2.5–3 cm, glabrous; valves leathery. Seeds 2–5, orbicular, compressed, ca. 12 mm in diam. Fl. Jun–Oct, fr. Jul–Dec. $2n = 28^*$.

- Open or dense forests, thickets; low to middle elevations. Fujian, Guangdong, Guangxi, Guizhou, Hainan, Hubei, Hunan, Jiangxi, Taiwan, Yunnan, Zhejiang [Vietnam].

18. *Bauhinia hypoglauca* Tang & F. T. Wang ex T. C. Chen, *Guihaia* 8: 44. 1988.

滇南羊蹄甲 *dian nan yang ti jia*

Lianas, woody, with compressed tendrils. Stems and branches with small, protruding pits; young branches and inflorescence puberulent. Stipules caducous; petiole 1.5–4.5 cm, slender; leaf blade broadly ovate or ovate, 4.5–7 × 3.5–7 cm, papery, abaxially shiny brownish pubescent when young, grayish pubescent when old, adaxially glabrous, primary veins 7–9, veins convex on both surfaces, base truncate to shallowly cordate, apex bifid to 1/3–1/2; lobes widely divergent, apex acuminate. Inflorescence a raceme or several racemes joined in a panicle, terminal or axillary, 7–15 cm, many flowered, brownish pubescent; bracts 3–4 mm; bracteoles ca. 1.5 mm. Pedicel 3–5 mm, stout, pubescent. Flower buds ellipsoid, ca. 5 mm, tapering at both ends. Receptacle funnelform; calyx lobes 5, erect at anthesis, lanceolate. Petals white, elliptic or obovate, ca. 4.5 × 2.5–3 mm, outside with golden hairs on midvein, claw 1.5–2 mm. Fertile stamens 3; filaments ca. 5 mm, glabrous. Staminodes 2 or 3. Floral disk not swollen. Ovary stalked, oblique, hairy on sutures and at base; style glabrous; stigma small. Legume oblong, compressed, ca. 6 × 2 cm, glabrous when mature; valves woody, smooth. Seeds 2, blackish, broadly elliptic, compressed, ca. 10 × 8 mm. Fl. Sep–Oct, fr. Oct–Dec.

• Open forests and disturbed habitats on karst hills; ca. 1300 m. Yunnan.

19. *Bauhinia linyuenensis* T. C. Chen, *Guihaia* 8: 45. 1988.

凌云羊蹄甲 *ling yun yang ti jia*

Lianas, woody, with compressed, glabrous tendrils. Stems and branches black when dry, cylindrical, covered with small pits; young branches canaliculate, brownish red puberulent. Stipules caducous; petiole ca. 2 cm, glabrous; leaf blade adaxially shiny, ovate, broadly ovate, or suborbicular, 5–7 × 4–7 cm, subleathery, abaxially brownish pubescent when young, subglabrous when old, adaxially glabrous, primary veins 7–9, veins dense, convex on both surfaces, base cordate, entire, or emarginate; lobes rounded or obtuse. Inflorescence a raceme or 5–9 racemes joined in a panicle, terminal or axillary, 9–15 cm, many flowered, brownish pubescent; peduncle short; bracts linear, 2.5–4 mm; bracteoles linear, inserted at middle of pedicel. Pedicel 3.5–4 mm, pubescent. Flower buds broadly ellipsoid. Receptacle funnelform, short; calyx lobes 5, ovate-triangular, ca. 2 × 1.5 mm, glabrous upon anthesis, reflexed. Petals white, ovate-oblong, elliptic, or broadly elliptic, 3–4 × 2.2–3 mm, margin wrinkled, claws 2–2.5 mm. Fertile stamens 3; filaments glabrous. Staminodes 2. Ovary stalked, oblique, hairy on sutures and stalk; style glabrous; stigma small. Legume unknown. Fl. Jul.

• Open forests on karst hills. Guangxi.

20. *Bauhinia venustula* T. C. Chen, *Guihaia* 8: 45. 1988.

小巧羊蹄甲 *xiao qiao yang ti jia*

Lianas, woody. Tendrils solitary or in pairs; stems slender, with dense, small, light brownish pits. Stipules caducous; petiole 0.6–2 cm, slender, glabrous; leaf blade adaxially shiny, broadly ovate or suborbicular, 1.5–4 × 1.4–4 cm, subleathery, abaxially subglabrous, adaxially glabrous, primary veins 5–7, veins thin and dense, convex on both surfaces, base truncate to shallowly cordate, entire, emarginate, or shallowly bifid (to less than 1/6); lobes obtuse at apex. Inflorescence a raceme, terminal or lateral, 5–9 cm; flowers densely arranged; bracts lanceolate, ca. 1.8 mm; bracteoles inserted below middle of pedicels, ca. 0.8 mm. Pedicel short, 4–6 mm, pubescent. Flower buds not known. Receptacle funnelform; calyx lobes 5, erect at anthesis, ovate, ca. 2 mm, pubescent, acute. Petals white, obovate or oblong, ca. 2.5 mm, outside with hairs on midvein, with prominent claw ca. 1.5 mm. Fertile stamens 3. Staminodes 2 or 3. Ovary stalked, oblique, hairy on sutures and at base; style glabrous; stigma small. Legume oblong, compressed, glabrous when mature; valves leathery, smooth. Fl. Oct, fr. Dec.

• Open forests on hills. Guangxi.

21. *Bauhinia chalcophylla* L. Chen, *J. Arnold Arbor.* 19: 130. 1938.

多花羊蹄甲 *duo hua yang ti jia*

Bauhinia euryantha L. Chen.

Lianas, woody. Young branches angulate, densely pubescent with brownish hairs; tendrils solitary or in pairs, pubescent. Stipules caducous, triangular-crescent-shaped; petiole 2–5.5 cm,

pubescent; leaf blade broadly ovate or suborbicular, 8–11.5 × 6–11 cm, subleathery, abaxially brownish pubescent, adaxially thinly pubescent, primary veins 9–11, veins slightly convex abaxially, base cordate, apex bifid to 1/4–1/3; lobes acute, acuminate, or obtuse, margin slightly sinuous. Inflorescences racemose-corymbose, usually 3, terminal, many flowered; bracts and bracteoles linear, 3–4 mm, pubescent; bracteoles inserted at middle of pedicels. Pedicel 2–2.8 cm, densely pubescent. Receptacle cylindrical, ca. 5 mm; calyx lobes reflexed at anthesis, ovate, ca. 10 × 3–5 mm, outside brownish pubescent. Petals white or light yellowish, spatulate, abaxially pubescent with rusty hairs on midvein, clawed, margin crisped. Fertile stamens 3; filaments to 3 cm, slender, glabrous; anthers red. Staminodes 5–7, 4–7 mm. Ovary stalked, glabrous; style 10–15 mm, slender, glabrous; stigma capitate. Legume oblong, compressed, ca. 15 × 4 cm; valves woody. Seeds 5–7, elliptic, compressed. Fl. Jun–Jul, fr. Jul–Sep.

• Open forests along rivers and streams; 800–1000 m. Yunnan.

22. *Bauhinia nervosa* (Wallich ex Benth) Baker in J. D. Hooker, *Fl. Brit. India* 2: 283. 1876.

棒花羊蹄甲 *bang hua yang ti jia*

Phanera nervosa Wallich ex Benth in Miquel, *Pl. Jungh.* 262. 1852; *Bauhinia claviflora* L. Chen.

Climbers, robust, with tendrils. Branches brownish pubescent, later subglabrous. Stipules ovate-auriculate; petiole 1.5–3 cm; leaf blade suborbicular, 6–8 × 7–9 cm, subleathery, abaxially thinly pubescent, adaxially glabrous, veins 11–13, base shallowly cordate, apex bifid to ca. 1/3, lobes rounded at apex. Inflorescence racemose-corymbose, rusty pubescent; bracts lanceolate, cucullate, 1.3–1.8 cm; bracteoles similar to bracts but smaller, inserted at middle of pedicel. Pedicel 4–5 cm. Flower buds to 4.5 cm. Receptacle tubular, ca. 2 cm; calyx lobes reflexed, swollen, linear-lanceolate, 2.5–3 × ca. 0.4 cm, outside pubescent, apex acute. Petals white and reddish at base, subleathery, broadly obovate, ca. 3 × 2.2 cm, veins convex, apex emarginate, claw to 2 cm. Fertile stamens 3; filaments strong, ca. 3.5 cm, glabrous; anthers oblong, loosely hairy. Staminodes 2; filaments ca. 1.5 cm, slender. Ovary stalked, pubescent; style stout; stigma broadly disciform. Legume unknown. Fl. Sep.

Open forests; 1500–1600 m. Yunnan [India, Myanmar, Thailand].

23. *Bauhinia coccinea* (Loureiro) Candolle subsp. **tonkinensis** (Gagnepain) K. Larsen & S. S. Larsen, *Fl. Cambodge, Laos & Vietnam* 18: 201. 1980.

绯红羊蹄甲 *fei hong yang ti jia*

Bauhinia ferruginea Roxburgh var. *tonkinensis* Gagnepain in Lecomte, *Fl. Indo-Chine* 2: 126. 1913.

Lianas, woody. Branches robust, rusty pubescent when young, subglabrous when old; tendrils glabrous. Stipules suborbicular, 4–5 mm in diam.; petiole 1.5–3 cm, slender; leaf blade oblong, 5.5–8 × 3–5 cm, leathery, mature leaves adaxially shiny, glabrous on both surfaces, primary veins 9, convex abaxially, impressed adaxially, base truncate or rarely cordate, emarginate or bifid to 1/6; lobes obtuse or rounded at apex. Inflorescence racemose-corymbose, 9–12 cm, rusty pubescent;

bracts lanceolate, cucullate, 10–12 × 6–7 mm. Pedicel 25–30 mm, densely pubescent. Flower buds ellipsoid, 15–18 mm, rusty pubescent. Receptacle cylindrical, 10–15 mm, angulate, base slightly swollen; calyx lobes reflexed at anthesis, linear-lanceolate, 18–20 × 3–4 mm, outside rusty tomentose, inside glabrous. Petals orange or reddish, elliptic or obovate, 25–30 mm, outside rusty tomentose, inside less so, base tapering into claw ca. 1 cm. Fertile stamens 3; filaments exceeding petals. Ovary densely rusty tomentose; stalk 5–7 mm, stout; style 10–12 mm, pubescent; stigma peltate, large, ca. 3 mm in diam. Legume unknown. Fl. Feb–Apr.

Open forests in valleys; 800–1300 m. Yunnan [Vietnam].

Bauhinia coccinea subsp. *coccinea* (*Phanera coccinea* Loureiro) occurs in Cambodia and Laos.

24. *Bauhinia yunnanensis* Franchet, Pl. Delavay. 190. 1890.

云南羊蹄甲 yun nan yang ti jia

Bauhinia atefissa H. Léveillé, p.p.; *B. diptera* Collett & Hemsley (1890), not Blume ex Miquel (1850); *Lasiobema yunnanensis* (Franchet) A. Schmitz.

Lianas, woody, slender, glabrous. Branches angulate or cylindrical; tendrils in pairs, subglabrous. Leaves 2-foliolate; stipules caducous; petiole 1.5–2.5 cm; leaf blade broadly elliptic, membranous or papery, both surfaces glabrous, primary veins 3 or 4 per lobe, base deeply or shallowly cordate, apex bifid to upper pulvinus with a free mucro; lobes obliquely ovate, 2–4.5 × 1–2.5 cm, apex obtuse or rounded. Inflorescence a raceme, terminal or opposite to leaves, 8–18 cm, 10–20-flowered; bracts caducous; bracteoles inserted at middle of pedicel. Pedicel 2–3 cm. Flower buds narrowly ellipsoid. Receptacle cylindrical, 7–8 mm; calyx lobes split into 2 parts upon anthesis, cucullate, elliptic-ovate, with teeth at apex. Petals pinkish, with dark red stripes on veins, spatulate, ca. 17 mm, subglabrous, clawed. Fertile stamens 3; filaments curved, pinkish; anthers ovoid. Staminodes 7, much reduced. Ovary glabrous, prominently stalked; style slender; stigma capitate. Legume linear-oblong, 8–15 × 1.5–2 cm, apex beaked; valves leathery. Seeds broadly elliptic-oblong, compressed, 7–9 mm; testa blackish, shiny. Fl. Aug, fr. Oct.

Thickets on hills; 400–2000 m. Guizhou, Sichuan, Yunnan [Myanmar, N Thailand].

25. *Bauhinia bohniana* L. Chen, J. Arnold Arbor. 19: 129. 1938.

丽江羊蹄甲 li jiang yang ti jia

Shrubs, erect, 1–2 m tall. Young branches densely grayish brown pubescent, glabrous when old. Stipules caducous; petiole pubescent; leaf blade broadly orbicular, 5–7 × 6–8 cm, subleathery, abaxially rusty pubescent on young leaves, becoming less pubescent when old, adaxially grayish pubescent, primary veins 9–11, veins convex abaxially, base deeply cordate to almost truncate, apex bifid to 1/4; lobes with obtuse or rounded apices. Inflorescence corymbose-racemose, terminal or lateral, 6–7 cm in diam., rusty pubescent; bracts and bracteoles caducous, lanceolate. Pedicel 15–20 mm, pubescent. Flower buds upper part subovoid, constricted from middle downward. Re-

ceptacle funnelliform, ca. 5 mm; calyx lobes 5, lanceolate, outside pubescent. Corolla pink, ca. 3.5 cm in diam.; petals broadly obovate, 10–12 mm in diam., outside golden hairy at middle, claw ca. 10 mm, pubescent. Fertile stamens 3; filaments to 3 cm, glabrous; anthers oblong, ca. 4 mm. Staminodes 6 or 7, ca. 2 cm, slender. Ovary stalked, golden tomentose on suture; stalk ca. 12 mm, pubescent; stigma small. Legume strap-shaped, compressed, 15–20 × 2.5–3 cm, apex beaked, sutures swollen; valves leathery, glabrous. Seeds subcordiform, compressed, ca. 12 × 9 mm; testa blackish, shiny. Fl. Apr–Aug, fr. May–Oct.

• Thickets on sunny hillsides; 1700–2000 m. Yunnan.

26. *Bauhinia khasiana* Baker in J. D. Hooker, Fl. Brit. India 2: 281. 1876.

牛蹄麻 niu ti ma

Lianas, woody, with tendrils. Branches cylindrical; young branches pubescent, later glabrous. Petiole 2.5–5(–7) cm; leaf blade broadly ovate to orbicular, 7–12(–15) × 6–9.5(–12) cm, papery-leathery or leathery, abaxially glabrous, pubescent on veins, puberulent, or rusty pubescent, adaxially glabrous, veins 7–9, convex on both surfaces, base broadly cordate or almost truncate, apex bilobed to 1/5–1/4; lobes crossing to cover each other, with acute apices. Inflorescence corymbose, or consisting of several corymbs, terminal, 10–15 × 10–15 cm, rusty pubescent; bracts caducous; bracteoles linear, ca. 1 mm, inserted on lower part of pedicel. Pedicels 3–3.5 cm. Flower buds broadly ovoid or subglobose. Receptacle cylindrical, ca. 5 mm; calyx lobes 4 or 5, reflexed at anthesis, ca. 7 mm, abaxially rusty pubescent. Petals red or golden yellowish, broadly spatulate, abaxially rusty pubescent, claw 2–4 mm. Fertile stamens 3; filaments glabrous. Staminodes 3. Ovary long stalked, glabrous but rusty pubescent on sutures; stigma peltate. Legume dehiscent, oblong-lanceolate, compressed, 15–20 × 4–10 cm, leathery, glabrous. Seeds 4 or 5, oblong, ca. 2 × 2 cm. Fl. Jul–Aug, fr. Sep–Dec.

Mixed forests. Hainan, Yunnan [India, Laos, N Thailand, Vietnam].

- 1a. Leaves abaxially rusty hairy, and densely pubescent on petioles; petals golden yellowish 26c. var. *tomentella*
- 1b. Leaves abaxially glabrous, puberulent, or pubescent on veins; petals red.
 - 2a. Leaves 7–12 × 6–9.5 cm, papery-leathery, veins 7–9, base broadly cordate or truncate 26a. var. *khasiana*
 - 2b. Leaves ca. 15 × 12 cm, leathery, veins 7, base cordate 26b. var. *gigalobia*

26a. *Bauhinia khasiana* var. *khasiana*

牛蹄麻(原变种) niu ti ma (yuan bian zhong)

Bauhinia dioscoreifolia L. Chen; *B. howii* Merrill & Chun; *B. pierrei* Gagnepain; *B. polystachya* Gagnepain.

Leaf blade 7–12 × 6–9.5 cm, papery-leathery, abaxially glabrous or pubescent on veins, veins 7–9, base broadly cordate or truncate. Petals red.

Mixed forests. Hainan [India, Laos, N Thailand, Vietnam].

26b. *Bauhinia khasiana* var. *gigalobia* D. X. Zhang, Nordic J. Bot. 13: 401. 1993.

巨荚牛蹄麻 ju jia niu ti ma

Petiole ca. 7 cm; leaf blade ca. 15 × 12 cm, leathery, abaxially puberulent, adaxially glabrous, veins 7, base cordate. Petals red. Legume dark brown, ca. 20 × 8–10 cm.

- Open forests; ca. 2000 m. Yunnan (Hekou).

26c. *Bauhinia khasiana* var. *tomentella* T. C. Chen, Guihaia 8: 46. 1988.

毛叶牛蹄麻 mao ye niu ti ma

Leaves pubescent with rusty hairs abaxially, and densely pubescent on petioles. Petals golden yellowish. Fl. Jul.

- Yunnan (Hekou).

27. *Bauhinia paucinervata* T. C. Chen, Guihaia 8: 46. 1988.

少脉羊蹄甲 shao mai yang ti jia

Lianas, woody. Young branches and petioles brownish pubescent, later glabrous; tendrils rare. Stipules caducous; petiole 0.8–3 cm, slender, grayish pubescent at first, later glabrous; leaf blade shiny on both surfaces, ovate to elliptic, 4.6–10 × 2.5–5 cm, leathery, both surfaces glabrous, primary veins 3–5, veins convex on both surfaces, base rounded, margin entire, apex acuminate. Inflorescence racemose-corymbose, several joined together in a panicle, 9–10 × 5–7 cm, terminal or axillary, many flowered, grayish brown pubescent; bracts lanceolate, 2.5–3 mm, outside pubescent, acuminate; bracteoles linear, 1–1.5 mm, inserted above middle of pedicels. Pedicel 8–15 mm, slender, pubescent. Flower buds broadly ellipsoid, ca. 4 × 3 mm. Receptacle cylindrical, ca. 3 mm; calyx lobes 5, not reflexed, lanceolate, 3 free, other 2 adnate, ca. 2.5 mm, outside pubescent. Petals white, obovate, 4–5 × 2.5–3 mm with a claw ca. 1 mm, abaxially yellowish brown hairy at middle, glabrous along margin, margin crisped. Fertile stamens 3; filaments 5–7 mm, glabrous. Staminodes 7. Floral disk not developed. Ovary shortly stalked, oblique, glabrous; style shorter than stalk, slender, glabrous; stigma capitate, small. Legume oblong to strap-shaped, compressed, 9–11 × 3–3.5 cm; valves hard woody, brownish when dry. Seeds 3 or 4, ellipsoid, compressed, 12–18 × 9–14 mm. Fl. Jun–Aug, fr. Oct.

- Thickets on karst hills; 300–600 m. Guangxi.

28. *Bauhinia hainanensis* Merrill & Chun ex L. Chen, J. Arnold Arbor. 19: 132. 1938.

海南羊蹄甲 hai nan yang ti jia

Bauhinia megacarpa L. Chen.

Lianas, woody. Young branches and inflorescences rusty pubescent; tendrils strong, solitary, pubescent. Stipules caducous; petiole 3–8 cm, rusty pubescent; leaf blade suborbicular to ovate-orbicular, 10–18 × 10–20 cm, subleathery, abaxially thinly rusty pubescent, densely pubescent on veins, adaxially glabrous except near petiole, primary veins 11–13, veins dense, base deeply cordate, apex bifid to 2/5–1/2 on flowering branches, lobes obtuse or rounded at apex. Inflorescence a corymbose panicle, ca. 13 cm, terminal or axillary; bracts lan-

ceolate; bracteoles opposite, linear, inserted at middle of pedicels. Pedicel 10–15 mm, rusty pubescent. Flower buds ellipsoid. Receptacle funnellform, ca. 3 mm; calyx lobes 5, not reflexed, broadly ovate, 1 free, others in 2 adnate parts, ca. 6 mm, outside pubescent. Petals pinkish or white, broadly obovate, 8–9 mm with a claw ca. 1 mm, abaxially rusty hairy, shortly clawed, margin crisped. Fertile stamens 3; filaments ca. 25 mm, glabrous. Staminodes 2, ca. 7 mm. Floral disk fleshy. Ovary stalked, glabrous; style slender, glabrous; stigma capitate, small. Legume oblong, compressed, ca. 22 × 6 cm; valves hard woody, glabrous. Seeds 5–10, obovoid, compressed, ca. 20 mm. Fl. Dec, fr. next Apr.

- Open forests; low elevations. Hainan, Yunnan.

29. *Bauhinia japonica* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 18: 401. 1873.

日本羊蹄甲 ri ben yang ti jia

Bauhinia kwangtungensis Merrill; *Lasiobema japonica* (Maximowicz) de Wit.

Lianas, woody, with tendrils, glabrous throughout except for inflorescences and immature fruit. Branches cylindrical; twigs angulate. Stipules caducous; petiole 3–4 cm; leaf blade shiny on both surfaces, with a yellowish margin, suborbicular, 4–9 × 4–9 cm, papery, both surfaces glabrous, primary veins 7–13, veins dense, base deeply cordate, apex bifid to 1/3–1/2 on flowering branches, lobes obtuse at apex. Inflorescence a raceme, 10–23 cm, many flowered, terminal, rusty pubescent; bracts narrowly lanceolate, ca. 3.5 mm, acuminate; bracteoles linear, ca. 1 mm. Pedicel 10–20 mm, slender. Flower buds obovoid, 4–5 mm, apex truncate with an opening. Receptacle broadly funnellform, 1.5–2 mm; calyx lobes 5, broadly ovate-triangular, ca. 2 × 3 mm. Petals greenish, obovate-oblong, ca. 10 × 4.5 mm with a claw ca. 2.5 mm, abaxially silky hairy. Fertile stamens 3; filaments ca. 11 mm, glabrous. Staminodes 2. Ovary rusty silky hairy, with a stout stalk; style short; stigma small. Legume oblong, strap-shaped, swollen, 4–7 × 2–2.8 cm, pubescent when young, subglabrous when old; valves leathery, glabrous. Seeds 1–5, black, shiny, ensiform, ca. 10 × 7 mm. Fl. Jan–May, fr. Jun–Sep.

Open forests near coastal regions; low elevations. Guangdong, Hainan [Japan].

30. *Bauhinia wallichii* J. F. Macbride, Contr. Gray Herb., n.s., 59: 23. 1919.

圆叶羊蹄甲 yuan ye yang ti jia

Phanera macrostachya Benth.

Lianas, with tendrils. Young branches glabrescent. Stipules caducous; petiole 3.5–4.5 cm, glabrescent; leaf blade suborbicular, 10–15 cm in diam., both surfaces glabrous, veins 9–11, base cordate, apex bifid to 1/5, lobes with acuminate or obtuse apices. Inflorescence a raceme or panicle; bracts lanceolate, ca. 3.5 mm, acuminate. Pedicel ca. 1.5 cm. Flower buds obovoid, ca. 1 cm, densely pubescent with rusty hairs. Receptacle bell-shaped; calyx lobes 5, ca. 4 mm, obtuse. Petals subequal, 6–12 mm with a claw 2–4 mm. Fertile stamens 3; filaments ca. 2 cm, glabrous. Staminodes 7. Ovary shortly stalked, ca. 1 cm, densely

pubescent; style ca. 1 cm, glabrous; stigma small. Legume unknown.

Forest margins. Known in China from a single collection from Yunnan (Mengla) [NE India, Myanmar, Thailand, N Vietnam].

31. *Bauhinia wuzhengyüi* S. S. Larsen, *Novon* 9: 526. 1999.

征镒羊蹄甲 zheng yi yang ti jia

Lianas, tendrils not seen. Branches glabrous. Stipules not seen; petiole 2.3–3 cm; leaf blade elliptic, 9–10.3 × 4.8–5.3 cm, subleathery, veins 3, base attenuate, margin entire, apex acuminate. Inflorescence terminal, racemose, elongate, grayish pubescent; bracts 4–5 mm, setaceous; bracteoles similar but smaller, subopposite, inserted below middle of pedicel. Pedicel 2.5–3 cm, finely grayish pubescent. Flower buds ellipsoid, 9–10 × 5–6 mm. Hypanthium obliquely campanulate, enlarged adaxially, ca. 4 mm, ca. 2 × length of abaxial portion. Calyx campanulate, open in bud, upper half split into 5 lobes; lobes 3–4 cm, apex acute. Petals subequal, 7–10 mm with a claw 2–3 mm, densely brownish pubescent on both sides except posterior one glabrous inside. Fertile stamens 3; filaments ca. 10 mm, glabrous; anthers 1.5–2 mm, glabrous, dehiscent longitudinally. Staminodes 5–7. Pistil with thick stipe, free, 2–3 mm, brownish pubescent; ovary ca. 9 mm; style very short, glabrous; stigma subsessile, ± punctate. Legume unknown.

- Thin forests on mountain slopes; ca. 500 m. Yunnan (Malipo).

32. *Bauhinia pyrrhoclada* Drake, *J. Bot. (Morot)* 5: 218. 1891.

红毛羊蹄甲 hong mao yang ti jia

Phanera pyrrhoclada (Drake) de Wit.

Lianas, woody. Young branches, inflorescences, petioles, and abaxial leaf surfaces rusty pubescent; tendrils pubescent. Stipules sickleform, caducous; petiole 2.5–3.5 cm; leaf blade ovate-orbicular, 6–8.5 × 6–8.5 cm, subleathery, abaxially thickly rusty pubescent, later losing most of its pubescence and color, adaxially glabrous except on primary veins, primary veins 9–11, base cordate, apex bifid to 1/2 on flowering branches, lobes obtuse at apex. Inflorescence a raceme, pyramidal, flowers dense; peduncle prominent, terminal; bracts and bracteoles linear-lanceolate, ca. 11 × 2.5–3 mm, pubescent. Pedicel 7–30 mm, stout, rusty pubescent. Flower buds ovoid, 10–12 mm, pubescent, apex obtuse. Receptacle funnellform, 5–7 mm; calyx lobes 5, not reflexed, lanceolate, velutinous, acuminate. Petals white, obovate-elliptic, ca. 20 × 10 mm with a claw ca. 5 mm, abaxially rusty hairy, margin crisped. Fertile stamens 3; filaments ca. 20 mm, hairy at base. Staminodes 2 or 3. Ovary subsessile, hairy; style 6–7 mm, lower part hairy; stigma peltate. Legume oblanceolate-oblong, compressed, 10–18 × 4–4.6 cm; valves hard woody, velutinous. Fl. Jun, fr. Aug–Sep.

Open habitats. Hainan, Yunnan [N Vietnam].

33. *Bauhinia hypochrysa* T. C. Chen, *Guihaia* 8: 47. 1988.

绸缎藤 chou duan teng

Lianas, woody, throughout golden or shiny brown tomentose except for adaxial surfaces of young leaves and petals; ten-

drils in pairs. Stipules caducous; petiole 5.5–6.5 cm; leaf blade orbicular, 9–11.5 cm in diam., leathery, abaxially thickly golden tomentose, adaxially glabrous except near veins, primary veins 15–17, convex abaxially, base deeply cordate, apex bifid to 1/2 on flowering branches, lobes acute or obtuse at apex. Inflorescence a raceme, 9–12 cm with a peduncle ca. 2 cm, pyramidal, terminal; bracts and bracteoles linear, 8–10 mm; bracteoles opposite, inserted on pedicel near receptacle. Pedicel robust, 9–10 mm. Flower buds ellipsoid, 13–15 mm. Receptacle cupular, 5–6 mm; calyx lobes 5, not reflexed, lanceolate, 12–14 mm. Petals yellow, subequal, obovate and elliptic, 12–18 × 8–13 mm with a prominent claw 6–10 mm, margin crisped, abaxially rusty hairy, adaxially glabrous. Fertile stamens 3; filaments ca. 25 mm, glabrous except near base; anthers oblong, ca. 4 mm. Staminodes 6, unequal, glabrous or hairy near base. Ovary shortly stalked, densely rusty tomentose; style slender, glabrous; stigma small. Legume oblong or oblong-strap-shaped, compressed, 10–15 × 4–4.5 cm; valves hard woody, densely silvery tomentose. Seeds 2 or 3, broadly ellipsoid, compressed, ca. 20 × 15 mm. Fl. May, fr. Oct.

- Open forests on karst hills. Guangxi.

34. *Bauhinia rubrovillosa* K. Larsen & S. S. Larsen, *Fl. Cambodge, Laos & Vietnam* 18: 204. 1980.

红背叶羊蹄甲 hong bei ye yang ti jia

Bauhinia mirabilis Gagnepain (1952), not Merrill (1929).

Lianas, woody, with tendrils. Branches robust; young branches angulate; new growth densely rusty hirsute. Stipules caducous, ca. 10 mm; petiole robust, 1.2–6 cm, rusty tomentose; leaf blade orbicular or broadly orbicular, 9–12.5 × 10.5–16 cm, leathery, abaxially thickly rusty tomentose and pubescent, more so on veins, adaxially glabrous except near veins, primary veins 11–13, base deeply cordate, apex bifid to 1/3–1/2 on flowering branches, lobes obtuse or rarely acute at apex. Inflorescence a corymbose raceme, terminal or lateral, rusty tomentose; bracts narrowly triangular, 5–8 mm, outside tomentose; bracteoles similar but narrower, inserted on pedicel above middle. Pedicel 4–5 cm. Flower buds ovoid, 10–15 mm. Receptacle cupular, 7–9 mm; calyx lobes 5, ovate, ca. 13 mm, outside pubescent, obtuse. Petals white, subequal, obovate-suborbicular, ca. 15 × 10 mm, abaxially rusty hairy, adaxially glabrous, claw ca. 5 mm. Fertile stamens 3; filaments ca. 25 mm, glabrous; anthers ellipsoid, ca. 4 mm. Staminodes 2, much reduced. Ovary shortly stalked, 20–25 mm, densely tomentose; style 10–15 mm, glabrous; stigma capitate. Legume strap-shaped, compressed, dehiscent, 10–40 × 4.5–7.5 cm; valves hard woody, densely rusty tomentose. Seeds orbicular, compressed, 20–25 mm in diam.

Dense forests in rocky hill valleys; 400–500 m. Guangxi [Laos, Vietnam].

35. *Bauhinia aurea* H. Lévillé, *Bull. Soc. Bot. France* 54: 368. 1907.

火索藤 huó suǒ teng

Lianas, woody, robust. Branches densely brown tomentose; young branches angulate; tendrils tomentose first, later glabrous. Stipules caducous; petiole 4–7 cm, densely tomen-

tose; leaf blade suborbicular, 12–18(–23) × 10–16(–20) cm, thickly papery, abaxially yellow-brown tomentose, more so on veins, adaxially glabrous or subglabrous except near veins, primary veins 9–13, base deeply or shallowly cordate, apex bifid to 1/3–1/2 on flowering branches, lobes obtuse or rarely acute at apex. Inflorescence a corymbose raceme, terminal or lateral, with ca. 12 flowers, capitate before flowers open while buds are clustered together, densely brown tomentose; bracts caducous, lanceolate; bracteoles linear. Pedicel 2–5 cm. Flower buds ellipsoid. Receptacle cupular, short; calyx lobes 5, reflexed at anthesis, lanceolate. Petals white, subequal, spatulate, 12–22 mm, abaxially tomentose at middle, adaxially glabrous, clawed, margin crisped. Fertile stamens 3; filaments ca. 25 mm, glabrous; anthers oblong, ca. 5 mm. Staminodes 2–5. Ovary shortly stalked, densely rusty tomentose; style upper part glabrous; stigma disciform, large. Legume strap-shaped, compressed, dehiscent, 16–30 × 4–7 cm; valves hard woody, densely rusty tomentose. Seeds 6–11, ellipsoid, compressed, ca. 20 mm in diam. Fl. Apr–May, fr. Jul–Dec.

• Thickets on hill slopes and in valleys. Guangxi, Guizhou, Sichuan, Yunnan.

36. *Bauhinia erythropoda* Hayata, Icon. Pl. Formosan. 3: 83. 1913.

锈荚藤 xiu jia teng

Lianas, with tendrils. Young branches densely pubescent with brownish hairs, later glabrous; tendrils pubescent when young. Petiole 3–8 cm, rusty or brownish pubescent; leaf blade cordate or suborbicular, 5–10 × 4–9 cm, papery, abaxially pubescent on veins, or glabrous or nearly so, adaxially glabrous, smooth and shiny, veins 9–11, primary and secondary veins slightly convex on both surfaces, base cordate, apex bifid to 1/2 or more, lobes apiculate or acuminate at apex. Inflorescence racemose-corymbose, terminal, rusty pubescent; bracts and bracteoles linear. Pedicel 4–5 cm, slender, pubescent. Flowers fragrant. Receptacle cylindrical, 5–10 mm, slender; calyx lobes reflexed at anthesis, oblong-lanceolate, ca. 12 mm, acuminate. Petals white, broadly obovate, together with (3–4 mm) claw 2–2.5 × 1.2–1.8 cm, abaxially pubescent with rusty hairs on lower part and claw, margin crisped, emarginate. Fertile stamens 3; filaments 15–17 mm, pubescent on lower part. Ovary sessile, densely pubescent with rusty hairs; style slender, glabrous except at base; stigma peltate. Legume oblanceolate, compressed, to 30 × 5 cm, tomentose. Fl. Mar–Apr, fr. Jun–Jul.

• Open forests, disturbed forests, along streams, thickets. Guangxi, Hainan, S Yunnan.

- 1a. Leaves abaxially pubescent on veins
or almost glabrous 36a. var. *erythropoda*
1b. Leaves glabrous 36b. var. *guangxiensis*

36a. *Bauhinia erythropoda* var. *erythropoda*

锈荚藤(原变种) xiu jia teng (yuan bian zhong)

Bauhinia moningeriae Merrill.

Leaves abaxially pubescent on veins or almost glabrous.

• Open forests, along streams. Guangxi, Hainan, S Yunnan.

36b. *Bauhinia erythropoda* var. *guangxiensis* D. X. Zhang &

T. C. Chen, Nordic J. Bot. 18: 145. 1998.

广西锈荚藤 guang xi xiu jia teng

Leaves glabrous.

• Disturbed forests, thickets. Guangxi.

37. *Bauhinia carcinophylla* Merrill, J. Arnold Arbor. 23: 171. 1942.

蟹钳叶羊蹄甲 xie qian ye yang ti jia

Lianas, with tendrils. Young branches brownish puberulent, later glabrous; tendrils pubescent when young. Leaves 2-foliolate or shortly united; petiole 3–6 cm, rusty or brownish pubescent; leaf blade adaxially shiny, 5–10 × 2.5–5 cm, papery, abaxially pubescent on veins, or almost glabrous, adaxially glabrous, smooth, veins 4 or 5 per lobe, base cordate; lobes sub-oblong to sublanceolate, acuminate. Inflorescence racemose-corymbose, terminal or lateral, axis rusty pubescent; bracts and bracteoles lanceolate. Pedicel ca. 1 cm, pubescent. Flowers fragrant. Receptacle cylindrical, ca. 5 mm; calyx lobes reflexed at anthesis, oblong-elliptic, ca. 10 mm, outside pubescent, inside glabrous, acuminate. Petals white, obovate to oblong-obovate, ca. 18 mm. Fertile stamens 3; filaments ca. 12 mm, pubescent near base, glabrous above; anthers oblong, ca. 5 mm. Ovary shortly stalked, ca. 8 mm, densely rusty tomentose; style ca. 15 mm, slender, glabrous except at base; stigma peltate. Legume unknown.

Thickets in open habitats. Guangxi, Yunnan [N Vietnam].

38. *Bauhinia calciphila* D. X. Zhang & T. C. Chen, Nordic J. Bot. 18: 141. 1998.

石山羊蹄甲 shi shan yang ti jia

Lianas, with tendrils, pubescent throughout. Stipules caducous; petiole 0.8–1.5 cm, stout, pubescent; leaf blade suborbicular, ca. 5 cm in diam., both surfaces pubescent, veins 9–13, base cordate, apex bifid to 1/3, with acute lobes. Inflorescence axis to 3.5 cm; bracts lanceolate, ca. 5 mm; bracteoles linear-lanceolate, ca. 4 mm, inserted beneath hypanthium. Hypanthium tubular, 6–8 mm. Calyx segments 2 or 3. Petals subequal, elliptic, including claw to 1.5 cm, outside densely hirsute, inside sparsely so, clawed, with acute apices. Fertile stamens 3; filaments pubescent in lower part. Staminodes 2–4. Ovary and style hairy; stigma peltate. Legume unknown. Fl. Apr.

• Limestone hilltops. Guangxi (Tianyang).

This species is known only from the type locality.

39. *Bauhinia ornata* Kurz, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 42: 72. 1873.

缅甸羊蹄甲 mian dian yang ti jia

Lianas, woody, robust, with tendrils. Young branches shiny, rusty hairy. Stipules caducous; petiole 8–11 cm, rusty tomentose; leaf blade cordate-orbicular or cordate-ovate, 18–21 × 16–18 cm, papery, abaxially rusty tomentose, later glabrous, adaxially glabrous, primary veins 9–11, base deeply cordate, apex bifid to 1/3–1/2 on flowering branches, lobes acute or obtuse-acuminate at apex. Inflorescence a corymbose raceme, terminal or lateral, many flowered, densely brown tomentose; bracts per-

sistent, lanceolate, 3–5 mm, pubescent; bracteoles oblong-lanceolate, inserted at middle of pedicel. Pedicel 2.5–5 cm, slender. Flower buds upper part pyriform. Receptacle cupular, short; calyx lobes 5, ovate, 6–7 mm, in 2 parts during anthesis, reflexed upon anthesis. Petals white, subequal, obovate, 15–25 × 10–15 mm, abaxially thinly pubescent, adaxially glabrous, shortly clawed, margin crisped. Fertile stamens 3; filaments ca. 30 mm, upper part glabrous; anthers oblong. Ovary subsessile, densely brown tomentose; style slender, glabrous; stigma capitate, small. Legume strap-shaped, compressed, dehiscent, 18–30 × 4–6 cm; valves thick, hard woody, glabrous. Seeds 3 or 4, subcircular, compressed, ca. 27 mm in diam.

Mountain forests, open thickets; 100–800 m. Guangdong, Guangxi, Hainan, Yunnan [NE India, Laos, Myanmar, N Thailand, N Vietnam].

This is a polymorphic species. *Bauhinia ornata* var. *ornata* occurs in Myanmar.

- 1a. Leaves almost glabrous on both surfaces 39a. var. *balansae*
1b. Leaves abaxially pubescent 39b. var. *kerrii*

39a. *Bauhinia ornata* var. *balansae* (Gagnepain) K. Larsen & S. S. Larsen, Fl. Cambodge, Laos & Vietnam 18: 209. 1980.

光叶羊蹄甲 *guang ye yang ti jia*

Bauhinia balansae Gagnepain, Notul. Syst. (Paris) 2: 168. 1912; *B. petelotii* Merrill.

Leaves almost glabrous on both surfaces.

Yunnan [N Vietnam].

39b. *Bauhinia ornata* var. *kerrii* (Gagnepain) K. Larsen & S. S. Larsen, Fl. Cambodge, Laos & Vietnam 18: 208. 1980.

褐毛羊蹄甲 *he mao yang ti jia*

Bauhinia kerrii Gagnepain, Notul. Syst. (Paris) 2: 173. 1912; *B. austrosinensis* Tang & Wang; *B. eberhardtii* Gagnepain; *B. inflexilobata* Merrill; *B. kerrii* var. *grandiflora* Craib; *B. ornata* var. *austrosinensis* (Tang & Wang) T. C. Chen; *B. ornata* var. *contigua* T. C. Chen; *B. ornata* var. *subumbellata* (Pierre ex Gagnepain) K. Larsen & S. S. Larsen; *B. rufa* (Benth) Baker (1878), not Steudel (1840); *B. subumbellata* Pierre ex Gagnepain.

Leaves very variable, papery, abaxially pubescent, primary veins mostly marginal. Mature fruit brown tomentose.

Mountain forests, open thickets; 100–800 m. Guangdong, Guangxi, Hainan, Yunnan [NE India, Laos, Myanmar, N Thailand, N Vietnam].

40. *Bauhinia glauca* (Wallich ex Benth) Benth, Fl. Hongk. 99. 1861.

粉叶羊蹄甲 *fen ye yang ti jia*

Climbers, with tendrils. Young branches reddish pubescent, later glabrous. Stipules linear, ca. 4 mm; petiole sparsely pubescent, (1–)2–4 cm; leaf blade ovate to orbicular, often broader than long, 4–6(–9) cm in diam., abaxially sparsely pubescent, adaxially glabrous, 7–11-veined, base truncate to cor-

date, apex bifid to 1/5–1/2, tip of lobes rounded. Flowers in short dense corymbs; bracts linear, ca. 5 mm; bracteoles similar, inserted near middle of pedicel. Pedicel slender, 10–20 mm. Flower buds ovoid, glabrous to hairy. Receptacle striate, tubular, 7–15(–30) mm, subglabrous. Calyx splitting into 2 or 3 reflexed segments. Petals white, subequal, broadly obovate, 8–12 mm including claw 2–3 mm. Fertile stamens 3; filaments glabrous, ca. as long as petals; anthers red, ellipsoid, ca. 2 mm. Staminodes 7, 2 in between stamens, ca. 3 mm, 5 short, sublulate, connate at base. Ovary ca. 8 mm, glabrous, shortly stalked; style very short; stigma obliquely peltate. Legume flat, 18–25 × 3–5 cm, thinly valved, indehiscent. Seeds flat, ovoid, 5–8 mm.

Guangdong, Guangxi, Guizhou, Hubei, Hunan, Shaanxi, Yunnan [Cambodia, India, Indonesia, Laos, Malaysia (Peninsular), Myanmar, Thailand, Vietnam].

- 1a. Petiole 2–4 cm, leaves relatively small, primary veins 7–11, apex bifid to 1/3–1/2; inflorescence relatively small; flower buds glabrous to sparsely hairy; receptacle 7–15 mm 40a. subsp. *glauca*
1b. Petiole 1–2(–3) cm, leaves relatively large, 7–9 cm, primary veins 9–11, apex bifid to only 1/5; inflorescence relatively large; flower buds hairy; receptacle 25–30 mm (longer than pedicel) 40b. subsp. *tenuiflora*

40a. *Bauhinia glauca* subsp. *glauca*

粉叶羊蹄甲(原亚种) *fen ye yang ti jia* (yuan ya zhong)

Phanera glauca Wallich ex Benth in Miquel, Pl. Jungh. 265. 1852; *Bauhinia viridiflora* Blume ex Miquel.

Petiole 2–4 cm; leaves relatively small, primary veins 7–11, apex bifid to 1/3–1/2. Inflorescence relatively small. Flower buds glabrous to sparsely hairy. Receptacle 7–15 mm.

Hong Kong [India, Indonesia, Malaysia (Peninsular), Myanmar, Thailand].

40b. *Bauhinia glauca* subsp. *tenuiflora* (Watt ex C. B. Clarke) K. Larsen & S. S. Larsen, Nat. Hist. Bull. Siam Soc. 25(1–2): 10. 1973.

薄叶羊蹄甲 *bao ye yang ti jia*

Bauhinia tenuiflora Watt ex C. B. Clarke, J. Linn. Soc., Bot. 25: 18. 1889; *B. caterviflora* L. Chen; *B. glauca* subsp. *caterviflora* (L. Chen) T. C. Chen; *B. glauca* subsp. *hupehana* (Craib) T. C. Chen; *B. glauca* subsp. *pernervosa* (L. Chen) T. C. Chen; *B. hupehana* Craib; *B. hupehana* var. *grandis* Craib; *B. pernervosa* L. Chen; *B. polysperma* Pierre ex Gagnepain; *Phanera tenuiflora* (Watt ex C. B. Clarke) de Wit.

Petiole 1–2(–3) cm; leaves relatively large, 7–9 cm, primary veins 9–11, apex bifid to only 1/5. Inflorescence relatively large. Flower buds hairy. Receptacle 25–30 mm (longer than pedicel).

Guangdong, Guangxi, Guizhou, Hubei, Hunan, Shaanxi, Yunnan [Cambodia, Laos, Myanmar, Vietnam].

41. *Bauhinia corymbosa* Roxburgh ex Candolle, Mém. Légum. 487. 1825.

首冠藤 shou guan teng

Lianas, woody, with tendrils. Young branches, inflorescences, and one side of tendrils rusty hirsutulous; twigs slender, glabrous; tendrils solitary or in pairs. Stipules caducous, small; petiole 1–2 cm, slender; leaf blade suborbicular, 2–4 × 2–5 cm, papery, abaxially rusty pubescent on veins and near base, adaxially glabrous, veins 7, base cordate to truncate, apex bifid to 3/4 or more on flowering branches, lobes rounded at apex. Inflorescence corymbose-racemose or elongated racemose, terminal on lateral branches, ca. 5 cm, many flowered; peduncle short; bracts and bracteoles linear, ca. 3 mm. Pedicel slender. Flower buds ovoid, rusty pubescent, acute. Receptacle cylindrical, 18–25 mm, slender; calyx lobes 5, reflexed, lanceolate, ca. 6 mm, outside pubescent. Petals white, with pink stripes, broadly spatulate or suborbicular, 8–11 × 6–8 mm, abaxially hairy at middle, shortly clawed, margin crisped, apex rounded. Fertile stamens 3; filaments pinkish, ca. 10 mm, glabrous. Staminodes 2–5. Floral disk not fleshy. Ovary stalked, glabrous; style stout; stigma peltate. Legume straight or curved, strap-shaped or oblong, compressed, 10–25 × 1.5–2.5 cm, tardily dehiscent, glabrous; valves slightly thickened. Seeds oblong, ca. 8 × 4–6 mm. Fl. Apr–Aug, fr. Jun–Dec.

Open forests in valleys, sunny slopes. ?Fujian, Guangdong, Guangxi, Hainan [Vietnam].

- 1a. Raceme corymbose 41a. var. *corymbosa*
1b. Raceme elongated, not corymbose 41b. var. *longipes*

41a. *Bauhinia corymbosa* var. *corymbosa*

首冠藤(原变种) shou guan teng (yuan bian zhong)

Phanera corymbosa (Roxburgh ex Candolle) Benth.

Raceme corymbose.

Open forests in valleys and on sunny slopes. Guangdong, Guangxi, Hainan [Vietnam].

41b. *Bauhinia corymbosa* var. *longipes* Hosokawa, Trans. Nat. Hist. Soc. Formosa 32: 196. 1942.

长序首冠藤 chang xu shou guan teng

Raceme elongated, not corymbose.

- Hainan (Lingshui).

42. *Bauhinia didyma* L. Chen, J. Arnold Arbor. 19: 131. 1938.

孪叶羊蹄甲 luan ye yang ti jia

Lianas, woody, with tendrils; whole plant glabrous except for pedicel base and leaf buds. Twigs slightly zigzag, slender; tendrils solitary, slender. Leaves 2-foliolate; stipules caducous; petiole 1–2 cm, slender, glabrous; leaf blade 12–24 × 9–16 mm, membranous, abaxially thinly pubescent on axils of primary veins, adaxially glabrous, veins 3 per lobe, veins dense, salient on both surfaces, base truncate; lobes obliquely obovate, apex obtuse or rounded. Inflorescence corymbose-racemose, termi-

nal on lateral branches, many flowered; peduncle more than 1 cm; bracts and bracteoles linear, 1.5–4 mm. Pedicel 1–3 cm, slender. Flower buds ellipsoid, ca. 5 mm. Receptacle cylindrical, 10–12 mm; calyx lobes 5, reflexed, broadly ovate or lanceolate. Petals white, broadly obovate, ca. 9 × 6 mm, abaxially hairy near base, shortly clawed. Fertile stamens 3; filaments ca. 1 cm, glabrous. Staminodes 3–5. Ovary shortly stalked, glabrous; style short; stigma disciform. Legume strap-shaped, compressed, ca. 10 × 2.5 cm, tardily dehiscent, glabrous, sutures slightly thickened. Seeds ellipsoid, compressed, ca. 6 × 4 mm; testa brown. Fl. Aug–Dec, fr. Sep–Feb.

- Open forests, thickets; 100–500 m. Guangdong, Guangxi.

43. *Bauhinia touranensis* Gagnepain, Notul. Syst. (Paris) 2: 181. 1912.

囊托羊蹄甲 nang tuo yang ti jia

Bauhinia genuflexa Craib; *B. henryi* Craib; *B. rocheri* H. Léveillé.

Lianas, woody, with tendrils. Tendrils compressed, slender, pubescent on one side. Stipules caducous; petiole 1–2 cm, glabrous; leaf blade suborbicular, 3.5–6 × 4–6.5 cm, papery, abaxially thinly pubescent at first, pubescent only on veins and axils of primary veins in mature leaves, adaxially glabrous, veins 7–9, base cordate, apex bifid to 1/6–1/5, lobes obtuse or rounded at apex. Inflorescence 3 or 4 corymbose racemes, terminal on lateral branches, 6–9 cm, rusty pubescent; peduncle 1.5–4 cm, with a tendril at base; bracts and bracteoles threadlike, 6–9 mm, acuminate. Pedicel slender, lowest ones to 20 mm, rusty pubescent. Flower buds ellipsoid to globose, rusty hirsute. Receptacle cylindrical, 6–10 mm, base strongly enlarged on one side and appearing bladderlike, curved at straight angles with pedicels, pubescent; calyx lobes 5, ovate, 3–5 mm, acuminate. Petals greenish or yellowish white, suborbicular, ovate, or obovate, ca. 6 mm, abaxially hairy at middle, prominently clawed. Fertile stamens 3; filaments glabrous. Staminodes 7. Ovary stalked, 4–5 mm, pubescent on sutures and stalk; style short; stigma capitate. Legume strap-shaped, compressed, 12–16 × 3–3.5 cm, indehiscent, glabrous, sutures slightly thickened. Seeds ellipsoid, compressed, ca. 8 × 6 mm; testa brown. Fl. Mar–Jun, fr. Aug–Oct.

Open forests and thickets in valleys and on slopes; 500–1200 m. Guangxi, Guizhou, Yunnan [Laos, Myanmar, Vietnam].

44. *Bauhinia quinnanensis* T. C. Chen, Guihaia 8: 48. 1988.

黔南羊蹄甲 qian nan yang ti jia

Lianas, woody, with tendrils. Tendrils opposite leaves, pubescent. Stipules caducous; petiole 1–2 cm, pubescent; leaf blade broadly ovate to suborbicular, 5–8 × 4–6.5 cm, papery, abaxially rusty pubescent, adaxially glabrous, veins 9, base shallowly cordate or nearly truncate, entire or apex emarginate. Inflorescence 1 or 2 corymbose racemes, terminal, 3.5–6 × 3.5–6 cm, 8–20-flowered, rusty pubescent; peduncle short, 5–12 mm; bracts threadlike, 5–7 mm; bracteoles linear, 4–6 mm, inserted at middle of pedicel. Pedicel 15–22 mm, rusty pubescent. Flower buds ovoid, rusty hirsute. Receptacle cylindrical, 8–9 mm, base slightly swollen on one side, pubescent; calyx lobes

5, reflexed, lanceolate, 5–6 × ca. 2 mm, outside rusty pubescent. Petals white, 3 rhombic, 2 elliptic, 6–8 × 4–7 mm including claw 3–4 mm, abaxially pubescent at middle, base cuneate, margin smooth. Fertile stamens 3; filaments 9–11 mm, glabrous. Staminodes 7, 2 free ones longer, others joined at base. Ovary stalked, glabrous; style short; stigma capitate. Legume strap-shaped, much compressed, to 28 × 4–4.5 cm, indehiscent, glabrous, reticulate veined, sutures slightly salient. Seeds ellipsoid, compressed, ca. 8 × 6 mm; testa brown. Fl. May, fr. Aug.

- Thickets on mountain slopes; 1000–1300 m. Guizhou.

45. *Bauhinia damiaoshanensis* T. C. Chen, Guihaia 8: 49. 1988.

大苗山羊蹄甲 da miao shan yang ti jia

Lianas, woody, with tendrils. Twigs slender, glabrous; tendrils solitary, pubescent on one surface. Stipules caducous, lanceolate, small; petiole 1–3 cm, slender; leaf blade broadly orbicular, 2–5 × 2.5–6 cm, papery, abaxially pubescent on veins and near base, adaxially glabrous, veins 7, base cordate, apex bifid to 1/4–1/3 on flowering branches, lobes obtuse at apex. Inflorescence corymbose-racemose, terminal on lateral branches, 5–14 cm with a peduncle 1–4.5 cm; bracts linear-lanceolate, 4–7 mm; bracteoles linear, ca. 4 mm, inserted at middle of pedicel. Pedicel slender. Flower buds ovoid, rusty hirsute. Receptacle 6–9 mm, slender, base swollen on one side and curved at anthesis; calyx lobes 5, reflexed, lanceolate, 4–5 mm, outside pubescent. Petals white, broadly obovate or ovate, spatulate, 8–8.5 mm including a prominent claw 3–4 mm, base cuneate, margin crisped, apex rounded. Fertile stamens 3; filaments ca. 9 mm, glabrous. Staminodes 2–7. Floral disk not fleshy. Ovary shortly stalked, oblique, glabrous; style stout; stigma peltate. Legume strap-shaped or oblong, compressed, 12–15 × 3–3.5 cm, indehiscent, glabrous, reticulate veined, sutures slightly swollen, apex beaked. Seeds 15–18, oblong. Fl. Jun, fr. Jul–Oct.

- Open forests. Guangxi.

46. *Bauhinia ovatifolia* T. C. Chen, Guihaia 8: 50. 1988.

卵叶羊蹄甲 luan ye yang ti jia

Lianas, woody, with tendrils. Young branches, petioles, and inflorescences rusty pubescent, later subglabrous. Stipules caducous; petiole 8–17 mm; leaf blade ovate, 3–4 × 2–3 cm, papery, abaxially pubescent on veins and near base, adaxially glabrous, veins 7, base rounded, margin entire or emarginate. Inflorescence corymbose-racemose, terminal on lateral branches, 5–7 cm; peduncle short, 5–6 mm. Pedicel 15–20 mm, slender. Flower buds ovoid, ca. 6 mm, apex acute. Receptacle elongate, ca. 15 mm, striped; calyx lobes 5, reflexed, lanceolate, 6–7 mm, adnate from middle downward, upper part rusty pubescent outside. Petals white, subrhombic, broadly obovate, or elliptic, abaxially brown crinite from middle downward, claw prominent and 6–8 mm, base cuneate, margin crisped, apex rounded. Fertile stamens 3; filaments 11–12 mm, glabrous. Staminodes 7, largest 2 free, ca. 5 mm, others much smaller, joined in a digitate structure. Ovary shortly stalked, glabrous; style ca. as long as ovary, stout; stigma capitate. Legume oblong, 20–25

× 4–4.5 cm, glabrous, indehiscent. Seeds numerous, oblong. Fl. Dec, fr. next Apr–Jun.

- Open habitats on hill slopes; ca. 700 m. Guangxi, Yunnan.

47. *Bauhinia tianlinensis* T. C. Chen & D. X. Zhang, Nordic J. Bot. 18: 141. 1998.

田林羊蹄甲 tian lin yang ti jia

Lianas, with tendrils. Branches and tendrils pubescent. Stipules caducous; petiole 1–2 cm, pubescent; leaf blade ovate, 5–8 × 4.5–5.5 cm, abaxially pubescent, veins 7–9, base ± cordate, apex bifid to 1/4 with acute to rounded lobes. Inflorescence and flowers not seen. Legume oblong-strap-shaped, 20–30 × 5–6 cm, pubescent, indehiscent. Seeds many, oblong-ellipsoid, 6–10 × 3–5 mm.

- Disturbed open habitats on karst hills. Guangxi (Tianlin).

