

8. EPIMEDIUM Linnaeus, Sp. Pl. 1: 117. 1753.

淫羊藿属 yin yang huo shu

Ying Junsheng (应俊生 Ying Tsun-shen); David E. Boufford, Anthony R. Brach

Aceranthus C. Morren & Decaisne; *Vindicta* Rafinesque.

Herbs, perennial, deciduous or evergreen. Rhizome sympodial, short or horizontally creeping, stout. Stems solitary or caespitose, glabrous, squamate at base. Leaves basal or cauline, simple or compound; petioles of basal leaves longer than those of cauline; leaflets ovate, ovate-lanceolate, or suborbicular, basally cordate, lateral lobes asymmetric, with outer basal lobe longer than inner, usually spiny on margin, apex acute or acuminate. Flowering stem leafless or with 1–4 leaves, opposite or rarely alternate. Inflorescence simple or compound, with terminal raceme or panicle, few or many flowered, glabrous or glandular. Flowers dimerous. Sepals 8 in 2 whorls; inner sepals petaloid. Petals 4, flat, or saccate and prolonged outward into nectariferous pouches or spurs shorter or longer than sepals. Stamens 4, opposite petals; filaments glabrous; anthers dehiscing by 2 oblong valves, curling upward; pollen grains elliptic, smooth, with 3 longitudinal furrows. Ovary with parietal placentation; ovules 6–15; style slender; stigma slightly dilated. Capsule loculicidal. Seeds with conspicuous fleshy aril. $2n = 12$.

About 50 species: China, India (W Himalaya), Japan, Korea, Russia (Far East), S Europe, and N Africa; 41 species (40 endemic) in China; eight additional species (seven endemic) are insufficiently known.

See Stearn, The Genus *Epimedium* and Other Herbaceous Berberidaceae [hereafter Gen. *Epimedium*]. 2002.

Epimedium cavaleriei H. Léveillé (Cat. Pl. Yun-Nan, 18. 1916) is a synonym of *Stauntonia cavalerieana* Gagnepain (Bull. Soc. Bot. France 55: 47. 1908) in the Lardizabalaceae (see Fl. China 6: 452. 2001).

- 1a. Leaves simple.
 - 2a. Inflorescences panicles 1. *E. simplicifolium*
 - 2b. Inflorescences racemes.
 - 3a. Petals without spurs; stem leaf 1; plant 15–25 cm tall 2. *E. parvifolium*
 - 3b. Petals with spurs; stem leaves 2, opposite; plant 20–60 cm tall.
 - 4a. Leaf blade oblong to suborbicular; sepals 4 in 1 whorl; petals purple, saccate 3. *E. zhushanense*
 - 4b. Leaf blade ovate to ovate-elliptic; sepals 8 in 2 whorls; petals yellow, horn-shaped 4. *E. glandulosopilosum*
- 1b. Leaves compound.
 - 5a. Petals without spurs.
 - 6a. Flowering stem leaf 1 5. *E. platypetalum*
 - 6b. Flowering stem leaves 2–4.
 - 7a. Flowering stem leaves 2.
 - 8a. Rachis and pedicels glandular pubescent; leaflets abaxially pubescent or tomentose 6. *E. pubescens*
 - 8b. Rachis and pedicels glabrous; leaflets abaxially glabrous or strigose.
 - 9a. Base of terminal leaflet truncate or rounded; petals suborbicular, apex slightly involute, ca. 1 mm 7. *E. truncatum*
 - 9b. Base of terminal leaflet cordate; petals saccate, 1.5–4 mm.
 - 10a. Apex of terminal leaflet unlobed; apex of sepals unlobed 8. *E. sagittatum*
 - 10b. Apex of terminal leaflet 2–5-lobed; apex of sepals 2-lobed 9. *E. lobophyllum*
 - 7b. Flowering stem leaves 2–4.
 - 11a. Rachis and pedicels glandular pubescent; leaves 3(or 5 or 7)-foliolate; inner sepals purple 10. *E. ecalcaratum*
 - 11b. Rachis and pedicels glabrous; leaves trifoliolate; inner sepals white.
 - 12a. Leaflets lanceolate to narrowly lanceolate, abaxially lanose; petals flat, apex slightly involute 11. *E. borealiguizhouense*
 - 12b. Leaflets ovate, elliptic, or lanceolate, abaxially strigose; petals saccate.
 - 13a. Inflorescence 70–210-flowered; inner sepals ovate; petals orange-yellow and red; leaflets 5–11 mm 12. *E. myrianthum*
 - 13b. Inflorescence 300–400-flowered; inner sepals lanceolate; petals pale yellow; leaflets 12–14 mm 13. *E. multiflorum*
 - 5b. Petals with spurs.
 - 14a. Inflorescences racemes.
 - 15a. Flowering stem leaf 1.
 - 16a. Leaves biternate, leaflets 9 14. *E. koreanum*
 - 16b. Leaves trifoliolate, leaflets 3 or 5.
 - 17a. Leaflets 5 (occasionally 3), abaxially glabrous 15. *E. flavum*
 - 17b. Leaflets 3, abaxially pubescent.

- 18a. Spurs 2.2–2.6 cm; inner sepals pale rose 16. *E. brachyrrhizum*
 18b. Spurs shorter than 2 cm; inner sepals white.
 19a. Leaflets narrowly ovate or ovate, abaxially pubescent along midvein; inner sepals
 narrowly elliptic, 11–20 mm 17. *E. leptorrhizum*
 19b. Leaflets ovate or suborbicular, abaxially puberulent; inner sepals lanceolate, ca. 12 mm 18. *E. pauciflorum*
- 15b. Flowering stem leaves 2.
 20a. Rachis and pedicels glandular pubescent.
 21a. Inner sepals narrowly lanceolate, white or pinkish, reflexed; spurs shorter than inner sepals 24. *E. fargesii*
 21b. Inner sepals ovate or narrowly ovate, pale yellow, not reflexed; spurs longer than inner sepals.
 22a. Leaflets ovate or broadly ovate; spurs 7–12 mm, not curved 25. *E. enshiense*
 22b. Leaflets narrowly ovate; spurs 20–25 mm, curved.
 23a. Leaflets abaxially strigose; inner sepals narrowly ovate, apex acuminate 26. *E. franchetii*
 23b. Leaflets abaxially villous or subglabrous; inner sepals suboblong, apex acute 27. *E. lishihchenii*
- 20b. Rachis and pedicels glabrous.
 24a. Inner sepals ovate; leaflets abaxially strigose.
 25a. Spurs 4–5 mm, pale yellow, curved; bracts spinulose-serrulate; leaflets abaxially appressed
 whitish puberulent 19. *E. shuichengense*
 25b. Spurs 15–16 mm, purple, slightly curved; bracts entire; leaflets abaxially glaucous, with
 sparse minute prostrate hairs 20. *E. epsteinii*
- 24b. Inner sepals elliptic, lanceolate, or cymbiform; leaflets abaxially puberulent or glabrous.
 26a. Leaflets abaxially glabrous; inner sepals cymbiform, reddish; petals pale yellow 21. *E. fangii*
 26b. Leaflets abaxially puberulent; inner sepals elliptic or lanceolate, white; petals white.
 27a. Pedicels 2.5–5 cm; inner sepals elliptic; spurs horn-shaped, slightly curved, ca. 2.5 cm 22. *E. latisepalum*
 27b. Pedicels 2–3 cm; inner sepals lanceolate; spurs subulate, curved, 1.5–1.8 cm 23. *E. ogisui*
- 14b. Inflorescences panicles.
 28a. Leaves biternately compound, leaflets 9, occasionally 5.
 29a. Flowering stem leaves 2, 9-foliolate; flowers white or pale yellow; spurs shorter than inner sepals,
 ca. 2 mm 40. *E. brevicornu*
 29b. Flowering stem leaves 3, 9-foliolate or occasionally 5-foliolate; flowers yellow; spurs longer than
 inner sepals, ca. 15 mm 41. *E. elongatum*
- 28b. Leaves ternately compound, leaflets 3 or 5.
 30a. Leaflets 5, rarely 3 28. *E. davidii*
 30b. Leaflets 3.
 31a. Rachis and pedicels glabrous.
 32a. Leaflets abaxially glabrous.
 33a. Leaflet margin remotely spinose-serrate; spur of petals much shorter than inner sepals,
 curved, blunt 29. *E. dolichostemon*
 33b. Leaflet margin closely spinose-serrulate; spur of petals longer than inner sepals, slightly
 curved, subulate 30. *E. mikinorii*
- 32b. Leaflets abaxially hairy.
 34a. Leaflets abaxially strigose, margin undulate; inner sepals ovate, pale green 31. *E. chlorandrum*
 34b. Leaflets abaxially lanate or glabrous, margin flat; inner sepals broadly elliptic, pale yellow 32. *E. wushanense*
- 31b. Rachis and pedicels, or only pedicels, glandular pubescent.
 35a. Spur of petals shorter than inner sepals.
 36a. Leaflets abaxially conspicuously puberulent; inner sepals lanceolate, ca. 12 mm; spur of
 petals brown 33. *E. stellulatum*
 36b. Leaflets glabrous or pilose along veins; inner sepals elliptic, ca. 6 mm; spur of petals
 yellow 34. *E. reticulatum*
- 35b. Spur of petals longer than inner sepals.
 37a. Leaflets lanceolate, margins undulate-sinuate and sparsely spinose-serrate; outer sepals
 apically emarginate 35. *E. ilicifolium*
 37b. Leaflets ovate to lanceolate, margins flat; outer sepals apically entire.
 38a. Leaflets ovate to lanceolate, abaxially densely strigose 36. *E. acuminatum*
 38b. Leaflets ovate, abaxially sparsely pubescent or nearly glabrous.
 39a. Leaflets abaxially glaucescent, terminal leaflet oblong; spurs straight 37. *E. hunanense*
 39b. Leaflets abaxially glaucous, terminal leaflet ovate; spurs curved.
 40a. Inner sepals narrowly ovate, ca. 6 mm; spurs 20–35 mm, pale yellow; inflorescence
 a panicle; blade length:width ratio 2 38. *E. rhizomatosum*

- 40b. Inner sepals narrowly lanceolate, 15–17 mm; spurs 15–20 mm, pale purplish red; inflorescence a raceme; blade length:width ratio 2.5 39. *E. sutchuenense*

1. *Epimedium simplicifolium* T. S. Ying, Acta Phytotax. Sin. 13(2): 51. 1975.

单叶淫羊藿 dan ye yin yang huo

Herbs, 30–55 cm tall. Rhizomes brown, stout, squamate at upper part. Leaves simple, basal and cauline; petiole of stem leaf 5–7 cm, glabrous; leaf blade adaxially green, ovate or broadly elliptic-ovate, 7–19 × 8–10 cm, papery, abaxially densely sericeous, veins conspicuously raised, adaxially glabrous, reticulate veins conspicuous, base deeply or shallowly cordate with lobes rounded, subequal, margin closely spinulose-subserulate, apex acute. Flowering stem with 2 opposite leaves. Inflorescence a terminal panicle, 12–22 × 8–10 cm, usually 15–32-flowered; rachis glabrous. Pedicel 1–2.5 cm, puberulent. Flowers yellow. Sepals 8 in 2 whorls; outer sepals obovate, ca. 4 × 2 mm, apex obtuse; inner sepals ovate, ca. 6 × 4 mm, membranous, apex acute. Petals curved upward, reddish purple, horn-shaped, much longer than inner sepals, ca. 2 cm. Stamens 4, pale yellow, ca. 3 mm; filaments shorter than anthers; anthers valved. Pistil obliquely terete; style ca. 1 mm. Capsules obliquely terete, glabrous; style rostriform. Fl. Apr–May, fr. May–Jun.

- Slopes in valleys; ca. 1100 m. Guizhou.

2. *Epimedium parvifolium* S. Z. He & T. L. Zhang, Guihaia 14: 25. 1994.

小叶淫羊藿 xiao ye yin yang huo

Epimedium elachyphyllum Stearn, nom. illeg. superfl.

Herbs, 15–25 cm tall, glabrous. Rhizome apparently creeping, longer than 15 cm, 1.5–3 mm in diam. Leaves simple, basal and cauline; leaf blade adaxially dark green, broadly ovate, 2.5–3.5 × 3–4 cm, abaxially sparsely puberulent, often pruinose, reticulate veins conspicuous, adaxially glabrous, base deeply cordate with rounded lobes subequal, margin remotely spinose-serrate, apex acuminate. Flowering stem with 1 simple leaf at base of rachis. Raceme 8–10 cm, 8–12-flowered; rachis glabrous. Pedicel 1–2 cm, glabrous; bracts ovate, ca. 1.5 mm. Flowers purple. Sepals in 2 whorls; outer sepals 4, purple, 2 of them lanceolate, ca. 3 × 1.2 mm, others ovate, ca. 3.5 × 2.5 mm; inner sepals 4, yellow, lanceolate, ca. 3 × 1.2 mm. Petals 4, purple, suboblong, ca. 1.2 mm, without spur. Stamens 4, ca. 2.5 mm; filaments flat; anthers ca. 1.8 mm, apex obtuse. Pistil ca. 2 mm; style ca. 1 mm. Capsules ca. 1 cm; style ca. 3 mm. Seeds 1 or 2, brown, reniform, ca. 3.5 mm, glabrous. Fl. Apr–May, fr. May–Jun.

- Forests, thickets; 1300–1400 m. Guizhou (Songtao).

3. *Epimedium zhushanense* K. F. Wu & S. X. Qian, Acta Phytotax. Sin. 23: 71. 1985.

竹山淫羊藿 zhu shan yin yang huo

Herbs, 40–60 cm tall. Rhizome short, stout. Flowering stem brown, terete, squamate at base, with 2 opposite leaves.

Leaves simple, basal and cauline; petiole 5.5–6 cm, tomentose at base and apex; leaf blade adaxially deep green, oblong to suborbicular, 10–14 × 7–11 cm, abaxially densely sericeous-tomentose, adaxially glabrous, base deeply cordate, with rounded lobes subequal, margin slightly repand or irregularly denticulate, apex obtuse. Racemes usually many loosely flowered, ca. 30 cm, glandular. Pedicel 1.5–5 cm, slender; bracts ovate, ca. 2 mm. Flowers purple. Sepals 4 in 1 whorl, petaloid, ovate-lanceolate, 9–11 × ca. 3.5 mm, apex obtuse. Petals 4, purple, saccate, ca. 1.7 cm, base cucullate, apex long attenuate. Stamens 4, ca. 4 mm; filaments flat, shorter than anthers; anthers valved, valves revolute, apex of anther connective apiculate. Style 2.5–3 mm; stigma slightly quadrilobate or inconspicuous. Fruit unknown. Fl. Jun–Jul, fr. unknown.

- Forests, roadsides; ca. 1200 m. NW Hubei.

4. *Epimedium glandulosopilosum* H. R. Liang, Acta Phytotax. Sin. 28: 323. 1990.

腺毛淫羊藿 xian mao yin yang huo

Herbs, 20–50 cm tall. Rhizome short, stout, usually irregularly nodose. Flowering stem glandular pubescent and pilose. Leaves simple, basal and cauline; basal leaves broadly ovate, ca. 9 × 6.5 cm, petiole ca. 24 cm; cauline leaves opposite, petiole 3–6.5 cm, glandular pubescent and puberulent, leaf blade adaxially deep green, ovate to ovate-elliptic, 5–8.5 × 2.5–5.5 cm, abaxially densely golden yellow villous, adaxially glabrous, base deeply cordate with acute lobes nearly equal, margin spinose-serrate, apex acuminate. Racemes 8–24-flowered, 6–23 × 3–6 cm; rachis and pedicels glandular pubescent. Pedicel 1–3 cm; bracts ovate, 1–2 mm. Flowers yellow. Sepals 8 in 2 whorls; outer sepals narrowly ovate, 8–9 × 4–5 mm; inner sepals similar to outer sepals in size and shape. Petals spurred, yellow, horn-shaped, ca. 1.3 cm. Stamens ca. 4 mm; filaments flat, ca. 1 mm; anthers valved, valves revolute, apex of anther connective apiculate. Ovary terete; style ca. 2 mm; stigma quadrilobate or inconspicuous. Capsules 5–10 mm; style 3–4 mm. Fl. Apr–May, fr. May–Jun.

- 800–900 m. Sichuan.

5. *Epimedium platypetalum* K. Meyer, Repert. Spec. Nov. Regni Veg. Beih. 12: 380. 1922.

茂汶淫羊藿 mao wen yin yang huo

Epimedium platypetalum var. *tenue* B. L. Guo & P. K. Hsiao.

Herbs, 10–25 cm tall. Rhizome stout, irregularly nodose. Leaves basal and cauline, trifoliolate; petioles pilose with long reddish hairs forming conspicuous tufts at nodes; leaflets adaxially deep green, broadly ovate to suborbicular, 2–4 × 1.6–3 cm, abaxially papillose and sparsely pilose, adaxially glabrous, base deeply cordate with subequal lobes rounded and nearly touching, terminal leaflet similar to lateral leaflets in shape, margin spinose-serrate, apex rounded or acute. Flowering stem with 1 trifoliolate leaf. Raceme simple, 4–8 cm, 2–8-flowered.

Pedicel 5–10 mm, slender, glandular pubescent. Flowers pale yellow, campanulate. Outer sepals triangular-lanceolate, 2–2.5 × ca. 0.7 mm; inner sepals broadly ovate, 4–5 × 2.5–3 mm, apically acute or shortly acuminate. Petals oblong or obovate-oblong, ca. 8 × 4–5 mm, flat, without spur, apex rounded. Stamens ca. 3 mm; filaments ca. 1 mm; anthers ca. 2 mm. Pistil ca. 4 mm. Capsules 1–2 cm; style 2–3 mm. Fl. Apr–May, fr. May–Jun.

- Forests; 1600–2800 m. Shaanxi, Sichuan.

6. *Epimedium pubescens* Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 23: 309. 1877.

柔毛淫羊藿 rou mao yin yang huo

Epimedium coactum H. R. Liang & W. M. Yan; *E. pubescens* var. *cavaleriei* Stearn; *E. pubescens* subsp. *primarium* Stearn.

Herbs, 20–70 cm tall. Rhizome short, stout, sometimes elongated. Leaves basal and cauline, trifoliolate; cauline leaves opposite; petiolules ca. 2 cm, sparsely pubescent; leaflets adaxially deep green, shiny, ovate, narrowly ovate, or lanceolate, 3–15 × 2–8 cm, leathery when mature, abaxially densely pubescent to tomentose with numerous fine multicellular spreading or curled gray hairs densest along primary veins and at insertion of petiolule, base deeply or shallowly cordate with usually rounded lobes, those of lateral leaflets unequal, margin spinose-serrate, apex acuminate or shortly acuminate. Flowering stem with 2 opposite trifoliolate leaves. Panicle loose, 30- to more than 100-flowered, 10–20 cm, with peduncle 3–5-flowered, usually rachis and pedicels glandular pubescent. Pedicel 1–2 cm. Flowers ca. 1 cm in diam. Outer sepals purplish, broadly ovate, 2–3 mm; inner sepals white, lanceolate or narrowly lanceolate, 5–7 × 1.5–3.5 mm, apically acute or acuminate. Petals pale yellow, saccate, much shorter than inner sepals, blunt. Stamens prolonged, ca. 4 mm; anthers ca. 2 mm. Pistil ca. 4 mm; style ca. 2 mm. Capsules oblong; style long rostrate. Fl. Apr–May, fr. May–Jun. $2n = 12^*$.

- Forests, thickets, slopes, shaded and wet places; 300–2000 m. Anhui, Gansu, Guizhou, Henan, Hubei, Shaanxi, Sichuan.

7. *Epimedium truncatum* H. R. Liang, Acta Phytotax. Sin. 28: 322. 1990.

偏斜淫羊藿 pian xie yin yang huo

Herbs, 50–80 cm tall, glabrous throughout. Rhizome creeping, short, stout, nodose. Leaves basal and cauline, trifoliolate; cauline leaves opposite; leaflets abaxially pale green, adaxially dark green, ovate, 7.5–15 × 3.5–9 cm, leathery, abaxially with conspicuously raised veins, base of terminal leaflet truncate or obtuse, base of lateral leaflets oblique but not cordate, margin remotely spinose-serrate, apex acute or acuminate. Flowering stem with 2(or 3) trifoliolate opposite leaves. Panicle many (ca. 50) flowered, ca. 28 × 7 cm. Pedicel 7–15 mm, slender. Flowers ca. 4 mm in diam. Outer sepals 4, outer pair purple, suborbicular, ca. 2 mm, inner pair white, ca. 2.5 mm; inner sepals 4, lanceolate, ca. 2 mm. Petals 4, suborbicular, ca. 1 mm, base broadly cuneate, without spur, apex slightly involute. Stamens ca. 2.2 mm; filaments flat, ca. 0.7 mm; anthers ca. 1.5

mm, valved, apex of anther connective obtuse. Pistil ca. 2.2 mm; style ca. 1 mm. Capsules ca. 1.5 cm; style rostriform, ca. 5 mm. Fl. Apr–May, fr. May–Jun.

- Forest margins; 600–1000 m. Hunan (Baojing).

8. *Epimedium sagittatum* (Siebold & Zuccarini) Maximowicz, Bull. Acad. Imp. Sci. Saint-Petersbourg 23: 309. 1877.

三枝九叶草 san zhi jiu ye cao

Herbs, 30–50 cm tall. Rhizome short, stout, nodose, with numerous fibrous roots. Leaves basal and cauline, trifoliolate; leaflets ovate to ovate-lanceolate, 5–19 × 3–8 cm, leathery, abaxially sparsely strigose or glabrous, adaxially glabrous, base deeply or shallowly cordate, apex acute or acuminate, terminal leaflet with equal rounded lobes or oblong, lateral leaflets oblique with outer lobe large, deltoid and acute, inner lobe smaller and rounded, margin closely spinulose-sub serrate. Flowering stem with 2 opposite trifoliolate leaves. Panicle 10–20(–30) × 2–4 cm, 20–60-flowered, sometimes with lower peduncles 3-flowered, usually glabrous, occasionally scarcely glandular pubescent. Pedicel ca. 1 cm, glabrous. Flowers white or yellow, ca. 8 mm or less in diam. Outer sepals 4, purple spotted, apex blunt, outer pair narrowly ovate, ca. 3.5 × 1.5 mm, inner pair oblong-ovate, ca. 4.5 × 2 mm; inner sepals white, ovate-deltoid, ca. 4 × 2 mm, apex acute. Petals brownish yellow, saccate, 1.5–4 mm, blunt. Stamens prolonged, 3–5 mm; anthers 2–3 mm. Pistil ca. 3 mm; style longer than ovary. Capsules ca. 1 cm; style ca. 6 mm. Fl. (unknown in var. *glabratum*) Apr–May, fr. (Apr–)May–Jul. $2n = 12^*$.

- Forests, weedy places on slopes, thickets, streamsides, rock crevices; 200–1800 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Zhejiang.

- 1a. Leaflets abaxially sparsely strigose or glabrous; terminal leaflet narrowly ovate to lanceolate; flowers white 8a. var. *sagittatum*
- 1b. Leaflets abaxially glabrous; terminal leaflet oblong; flowers yellow 8b. var. *glabratum*

8a. *Epimedium sagittatum* var. *sagittatum*

三枝九叶草(原变种) san zhi jiu ye cao (yuan bian zhong)

Aceranthus sagittatus Siebold & Zuccarini, Abh. Math.-Phys. Cl. Königl. Bayer. Akad. Wiss. 4(2): 175. 1845; *A. macrophyllus* Blume ex K. Koch; *A. triphyllus* K. Koch; *Epimedium coactum* H. R. Liang & W. M. Yan var. *longtouhum* H. R. Liang; *E. sagittatum* var. *oblongifoliolatum* Z. Cheng; *E. sinense* Siebold ex Miquel.

Leaflets abaxially sparsely strigose or glabrous; terminal leaflet narrowly ovate to lanceolate. Flowers white. Fl. Apr–May, fr. May–Jul.

- Forests, weedy places on slopes, thickets, streamsides, rock crevices; 200–1800 m. Anhui, Fujian, Gansu, Guangdong, Guangxi, Hubei, Hunan, Jiangxi, Shaanxi, Sichuan, Zhejiang.

8b. *Epimedium sagittatum* var. *glabratum* T. S. Ying, Acta Phytotax. Sin. 13(2): 53. 1975.

光叶淫羊藿 *guang ye yin yang huo*

Leaflets abaxially glabrous; terminal leaflet oblong. Flowers yellow. Fl. unknown, fr. Apr–May.

- Forests; ca. 700 m. Guizhou, Hubei.

9. *Epimedium lobophyllum* L. H. Liu & B. G. Li, Acta Phytotax. Sin. 37: 288. 1999.

裂叶淫羊藿 *lie ye yin yang huo*

Herbs, 30–70 cm tall. Rhizome compact, rigid. Leaves basal and cauline, trifoliolate; petiole 6–9.5 cm; basal leaves smaller than cauline leaves; lateral leaflets narrowly ovate, entire, base shallowly cordate, sinus widely open, lobes unequal, inner lobe rounded, outer lobe acute, margin spinulose-serrulate, apex acuminate; petiolule of terminal leaflet 5–7 cm; terminal leaflet obovate to ovate or obovate-elliptic, 9–14 × 4–6.4 cm, base shallowly cordate, sinus open, lobes rounded, margin spinulose-serrulate, apex (2 or)3(–5)-lobed, lobes acuminate, abaxially glaucous, glabrous except main veins pilose. Inflorescence terminal, paniculate, (8–)25–34 cm, glabrous, many flowered; peduncles 7–17 mm, mostly 5-flowered. Flowers white or yellowish, 3–4.5 mm in diam. Outer sepals 4, ovate to elliptic, 2–3.5 mm, apex 2-lobed; inner sepals 4, obovate or ovate-lanceolate, 2–3.5 × ca. 1.5 mm. Petals suborbicular, 1.5–3 × ca. 1.3 mm, slightly saccate. Stamens 3–4 mm; anthers ca. 1.5 mm. Ovary narrowly ovoid, 3–3.5 mm; ovules 2–6. Capsules 1.3–1.7 cm, beak 4–5 mm. Seeds 2–6, ca. 3.5 mm. Fl. Apr–Jul, fr. Jul–Sep.

- Forests; 700–1500 m. Hunan.

10. *Epimedium ecalcaratum* G. Y. Zhong, Acta Phytotax. Sin. 29: 89. 1991.

无距淫羊藿 *wu ju yin yang huo*

Herbs, 30–65 cm tall. Rhizome creeping, nodose, with numerous fibrous roots. Leaves basal and cauline, 3(or 5 or 7)-foliolate; petiole of basal leaf 3–15 cm; cauline leaf opposite or alternate, petiole 2–4 cm, sparsely brownish villous, but densely so at base and apex; leaflets adaxially deep green, ovate or narrowly ovate, 2.5–4.5 × 1.4–2.6 cm, leathery, abaxially sparsely white strigose on veins, adaxially glabrous, base deeply cordate, apex acute, terminal leaflet with equal rounded lobes, lateral leaflets oblique with outer lobe large and rounded, inner lobe smaller and rounded, margin remotely spinose-serrate. Inflorescence a raceme or sometimes subpaniculate, erect, 7–33 cm, slender; rachis, peduncle, and pedicels brownish red glandular pubescent. Pedicel 8–21 mm, slender. Flowers yellow, 8–10 mm in diam. Outer sepals caducous, pale purple, elliptic to broadly ovate, ca. 3 × 2 mm, membranous; inner sepals purple, lanceolate, 2.5–3.5 × ca. 1.5 mm. Petals yellow, sometimes purple spotted, obovate-orbicular, 6–8 × 4–5 mm, base cucullate, apex rounded, obtuse. Stamens ca. 4.5 mm; anthers ca. 1.5 mm, valved, valves revolute. Pistil longer than stamens. Capsule terete, short, 6–8 mm; style ca. 3 mm. Seeds reddish brown, shiny, reniform. Fl. and fr. May–Aug.

- Forests, thickets, rocky slopes; 1100–2100 m. Sichuan.

11. *Epimedium borealiguizhouense* S. Z. He & Y. K. Yang, J. Pl. Resources Environm. 2(4): 51. 1993 [“*baieali-gui-*

zhouense”].

黔北淫羊藿 *qian bei yin yang huo*

Herbs, 40–60 cm tall. Rhizome nodose, short, with numerous fibrous roots. Leaves basal and cauline, trifoliolate; leaflets lanceolate to narrowly lanceolate, 13–18 × 2.5–4 cm, thickly leathery, abaxially sparsely lanose, adaxially glabrous, base cordate, apex acuminate or long acuminate, terminal leaflet with subequal rounded lobes, lateral leaflets oblique with outer lobe large, cuneate and acuminate, inner lobe much smaller and rounded, margin spinose-serrate. Flowering stem with 2 opposite trifoliolate leaves, occasionally 3 leaves whorled. Panicle without conspicuous peduncle, many (up to 150) flowered, 30–35 cm, usually glabrous. Pedicel 1–2 cm, glabrous. Flowers ca. 6 mm in diam. Outer sepals caducous, purple, elliptic, ca. 3.5 × 1.5–3 mm; inner sepals white, ovate, ca. 2.5 × 1 mm. Petals yellow, obovate, ca. 2 mm, apex involute, without spur. Stamens ca. 4 mm; filaments ca. 1.5 mm; anthers ca. 2.5 mm. Pistil ca. 4 mm; ovules 3 or 4; style ca. 2.5 mm. Capsule ca. 1 cm; style ca. 4 mm. Fl. Mar–Apr, fr. Apr–May.

- Streamsides in valleys; 300–500 m. Guizhou (Yanhe).

12. *Epimedium myrianthum* Stearn, Kew Bull. 53: 218. 1998.

天平山淫羊藿 *tian ping shan yin yang huo*

Epimedium sagittatum (Siebold & Zuccarini) Maximowicz subsp. *pyramidale* (Franchet) Stearn; *E. sagittatum* var. *pyramidale* (Franchet) Stearn; *E. sinense* Siebold ex Miquel var. *pyramidale* Franchet.

Herbs, 30–60 cm tall. Rhizome short, stout, with numerous fibrous roots. Leaves basal and cauline, leathery, trifoliolate; leaflets of basal leaves mostly ovate, 5–6 × 3–4 cm, apex acute; leaflets of cauline leaves adaxially shiny, mostly narrowly ovate, sometimes elliptic or lanceolate, 6–11 × 2–6 cm, abaxially glaucous, with extremely minute appressed hairs, adaxially glabrous, base moderately cordate, apex long acuminate, lobes of terminal leaflet rounded, those of lateral leaflets unequal with lobes rounded or acute, margin flat, closely spinulose-serrate. Flowering stem with 2 opposite, or sometimes 3 or 4 whorled, long petiolate leaves. Inflorescence paniculate, loosely 70–210-flowered, 18–34 × 7–9 cm, glabrous. Pedicel 5–15 mm. Flowers minute. Outer sepals black, obtuse, unequal in length, one pair ca. 2 mm, other pair ca. 3.5 mm; inner sepals white, narrowly ovate, ca. 4 × 1.5–2 mm, apically acute. Petals orange-yellow and red, slipper-shaped, shorter than inner sepals, 2–2.5 mm, apically obtuse. Stamens exposed, pale yellow, ca. 4 mm; filaments ca. 2 mm; anthers ca. as long as filaments. Pistil ca. 5.2 mm; style ca. 2.8 mm. Fruit unknown. Fl. Apr–Jul, fr. unknown.

- Dense forests, thickets, roadsides, streamsides; 700–1500 m. Guangxi, Hubei, Hunan.

13. *Epimedium multiflorum* T. S. Ying, Fl. Reipubl. Popularis Sin. 29: 310. 2001.

多花淫羊藿 *duo hua yin yang huo*

Herbs, ca. 80 cm tall. Rhizome short, stout. Leaves basal

and cauline, trifoliolate; leaflets abaxially pale green, adaxially green, elliptic or oblong, sometimes narrowly ovate, 12–14 × 5–6 cm, membranous, abaxially sparsely white strigose or glabrous, adaxially glabrous, base cordate, apex acuminate or long acuminate, terminal leaflet with equal rounded lobes, lateral leaflets quite oblique with outer lobes large, acute and deltoid, inner lobes smaller and rounded, margin spinose-serrate. Flowering stem with 2 opposite, or 3 or 4 whorled, trifoliolate leaves. Inflorescence compound, many (300–400) flowered, ca. 25 × 15 cm, base of rachis with 1–5 peduncles 20–30-flowered, usually glabrous. Pedicel 5–10 mm, glabrous; bracts lanceolate, ca. 1 mm. Flowers minute, ca. 3 mm in diam. Outer sepals purplish red, oblong, ca. 3.5 × 1.5 mm; inner sepals white, lanceolate, ca. 3 × 1 mm. Petals pale yellow, oblong, saccate, 1.2–2 × 0.6–1 mm, without spur. Stamens ca. 3 mm; filaments ca. 1 mm; anthers valved. Pistil 5–7 mm; style 3–4 mm. Fruit unknown. Fl. Apr–May, fr. unknown.

• Slopes in valleys, roadsides, streamsides; 500–800 m. Guizhou (Wangmo, Yinjiang, Yuping).

14. *Epimedium koreanum* Nakai, Fl. Sylv. Kor. 21: 63. 1936.

朝鲜淫羊藿 chao xian yin yang huo

Epimedium cremeum Nakai & Maekawa ex Honda; *E. grandiflorum* C. Morren subsp. *koreanum* (Nakai) Kitamura; *E. grandiflorum* var. *koreanum* (Nakai) K. Suzuki; *E. sulphurellum* Nakai (1944), not C. Morren (1849).

Herbs, 15–40 cm tall. Rhizome creeping, 3–5 mm in diam. Leaves basal and cauline, biternate, usually 9-foliolate; leaflets abaxially pallid, adaxially dark green, ovate, 3–13 × 2–8 cm, papery, abaxially glabrous or sparsely puberulent, adaxially glabrous, base deeply cordate with usually rounded lobes, base of lateral leaflets conspicuously oblique with outer lobe large, deltoid, and acute, inner lobe smaller and rounded, margin minutely serrate, apex acute or acuminate. Flowering stem with 1 biternate leaf. Inflorescence a simple raceme, 4–16-flowered, 10–15 cm, glabrous or pilose. Pedicel 1–2 cm. Flowers white, pale yellow, deep rose, or violet, 2–4.5 cm in diam. Outer sepals reddish, oblong, 4–5 mm; inner sepals narrowly ovate to lanceolate, flat, 8–18 × 3–6 mm, apically acute. Petals usually much longer than inner sepals, rounded; spurs slender, elongate, tapering-subulate, 1–2 cm. Stamens ca. 6 mm; anthers ca. 4.5 mm; filaments ca. 1.5 mm. Pistil ca. 8 mm; ovary ca. 4.5 mm; style ca. 3.5 mm. Capsules narrowly fusiform, ca. 6 mm; style ca. 2 mm. Seeds 6–8. Fl. Apr–May, fr. May. $2n = 12$.

Forests, thickets; 400–1500 m. Anhui, Jilin, Liaoning, Zhejiang [Japan, N Korea].

15. *Epimedium flavum* Stearn, Bot. Mag., n.s., 12: 21. 1995.

天全淫羊藿 tian quan yin yang huo

Herbs, 15–30 cm tall. Leaves basal and cauline, nearly leathery when mature, basal leaves mostly with 5 leaflets, sometimes 3, cauline leaves with 3 or 5 leaflets; leaflets ovate, to 4 × 3 cm, both surfaces glabrous, base cordate with lobes rounded and slightly diverging or separated by a narrow sinus, those of lateral leaflets moderately unequal, margin remotely

spinose-serrate, apex acuminate. Flowering stem with 1 leaf or 2 leaves at same height or at different heights. Inflorescence simple, racemose, loosely few flowered (3–10-flowered), ca. 6 cm. Pedicel to 2 cm, with short glandular hairs. Flowers large, ca. 3 cm in diam. Outer sepals caducous; inner sepals spreading horizontally, pale sulfur-yellow, lanceolate, ca. 11 × 4 mm, apex obtuse. Petals pale sulfur-yellow, slightly longer than inner sepals; spur elongated, subulate, slightly curved, ca. 1.3 cm, expanded at base into a lamina ca. 8 mm high. Stamens included, ca. 3 mm; filaments pale sulfur-yellow, ca. 0.5 mm; anthers pale sulfur-yellow, ca. 2.5 mm. Fruit unknown. Fl. Apr, fr. unknown.

• About 2000 m. Sichuan (Erlang Shan, Tianquan).

16. *Epimedium brachyrrhizum* Stearn, Kew Bull. 52: 659. 1997.

短茎淫羊藿 duan jing yin yang huo

Herbs, ca. 23 cm tall. Rhizome short, compact, clump-forming. Leaves basal and cauline, trifoliolate; leaflets adaxially deep green, ovate or narrowly ovate, 6–10 × ca. 3.5 cm, leathery, abaxially glabrous except for hairy thickened insertion of secondary petiole, adaxially glabrous, base deeply cordate, base of terminal leaflet with equal rounded lobes, those of lateral leaflets unequal with outer lobe large, deltoid, and acute, inner lobe smaller and rounded, margin closely spinulose subserrulate, apex acuminate. Flowering stem with 1 leaf. Inflorescence simple, racemose, loosely few flowered (6–12-flowered), ca. 14 cm. Pedicel ca. 2 cm, sparsely glandular pubescent. Flowers large, ca. 4 cm in diam. Outer sepals obovate, 3.5–4 mm, apically obtuse; inner sepals pale rose, lanceolate, 20–22 × ca. 6 mm. Petals basally rose, elsewhere white, slightly longer than inner sepals; spur strongly curved, elongate, 2.2–2.6 cm, nearly lamina-less. Stamens prolonged, ca. 4 mm; filaments whitish, ca. 1 mm, slender; anthers yellow, valved. Pistil ca. 6 mm; style ca. 2.5 mm; stigma ruminant. Fl. Apr–May, fr. unknown.

• Forests on slopes; 600–1200 m. Guizhou (Fanjiang Shan).

17. *Epimedium leptorrhizum* Stearn, J. Bot. 71: 343. 1933.

黔岭淫羊藿 qian ling yin yang huo

Epimedium macranthum H. Léveillé, Fl. Kouy-Tchéou, 48. 1914–1915, not Morren & Decaisne (1834).

Herbs, 12–30 cm tall. Rhizome long creeping, 1–2 mm in diam.; internodes sometimes to 20 cm. Leaves basal and cauline, trifoliolate; petiole reddish pubescent; leaflets adaxially dark green, narrowly ovate or ovate, 3–10 × 2–5 cm, leathery, abaxially often glaucous, papillose and reddish pubescent on midvein and lateral veins, especially dense at insertion of petioles, adaxially glabrous, base deeply cordate with usually rounded lobes nearly touching, those of lateral leaflets unequal, margin closely spinose-serrate, apex long acuminate. Flowering stem with 1 trifoliolate leaf, or occasionally 2 opposite leaves. Inflorescence simple, racemose, 4–12-flowered, 12–25 cm, glandular. Pedicel 1–2.5 cm, glandular. Flowers white, tinged with rose or deep rose, large, 3.5–4 cm in diam. Outer sepals

ovate-oblong, 3–4 mm, apex obtuse; inner sepals white, narrowly elliptic, 11–20 × 4–7 mm, apex acute. Petals longer than inner sepals, horn-shaped, to 2 cm, tapering from swollen but lamina-less base. Stamens ca. 4 mm; anthers ca. 3 mm, valved, revolute. Capsules oblong, 1.5–2 cm; style rostriform. Fl. Mar–Apr, fr. Apr–May.

• Forests, thickets; 400–1500 m. Guangxi, Guizhou, Hubei, Hunan, Sichuan.

18. *Epimedium pauciflorum* K. C. Yen, Guihaia 14: 124. 1994.

少花淫羊藿 shao hua yin yang huo

Herbs, 6–20 cm tall. Rhizome long creeping, 1–3 mm in diam.; internodes sometimes to 20 cm. Leaves basal and cauline, trifoliolate; leaflets ovate or suborbicular, 1.3–2.5 × 1.2–2.5 cm, abaxially sparsely puberulent, adaxially glabrous, base deeply cordate with rounded lobes nearly touching, those of lateral leaflets conspicuously unequal, margin coarsely serrate, apex acute or shortly acuminate. Flowering stem with 1 trifoliolate leaf. Inflorescence simple, racemose, few flowered (ca. 3-flowered), 4–7 cm; rachis and pedicels glandular, pubescent. Pedicel 1–2.3 cm; bracts ovate, 0.8–1.4 mm. Outer sepals caducous, narrowly obovate, ca. 4 × 3 mm; inner sepals white, broadly lanceolate, ca. 12 × 5 mm, apex obtuse. Petals declined, white, horn-shaped, longer than inner sepals, blunt spurs ca. 1.7 cm. Stamens 4; anthers ca. 2.5 mm, valved. Pistil ca. 6 mm; style 2–2.8 mm. Fruit unknown. Fl. Mar–Apr, fr. unknown.

• Weedy slopes; ca. 1700 m. Sichuan.

19. *Epimedium shuichengense* S. Z. He, Acta Bot. Yunnan. 18: 209. 1996.

水城淫羊藿 shui cheng yin yang huo

Herbs, 15–30 cm tall. Rhizome creeping, longer than 15 cm, 1.5–2.5 mm in diam. Leaves basal and cauline, trifoliolate; petiole of basal leaf 10–17 cm, petiole of cauline leaf 3–6 cm; leaflets ovate, 4–5.5 × 2–2.5 cm, abaxially appressed whitish puberulent, adaxially glabrous, base deeply cordate with lobes rounded or acute, those of lateral leaflets conspicuously unequal, margin spinose-serrulate, apex long acuminate. Flowering stem with 2 trifoliolate opposite leaves. Inflorescence simple, racemose, few flowered (6–9-flowered), 6–7 cm, glabrous or sparsely glandular pubescent; bracts broadly lanceolate, ca. 1.5 mm, spinulose-serrulate, apex dentiform. Flowers ca. 1 cm in diam. Outer sepals purple, lanceolate, ca. 5 × 2 mm; inner sepals pale yellow, ovate, ca. 4 × 3 mm. Petal spur curved, yellow, shortly horn-shaped, 4–5 mm. Stamens ca. 4 mm; filaments ca. 2 mm. Pistil ca. 4 mm; style ca. 2 mm. Capsules ca. 1 cm; style ca. 3 mm. Fl. Apr–May, fr. May–Jun.

• Thickets on slopes; ca. 1800 m. Guizhou (Shuicheng).

20. *Epimedium epsteinii* Stearn, Kew Bull. 52: 662. 1997.

紫距淫羊藿 zi ju yin yang huo

Herbs, ca. 15 cm tall. Rhizome long creeping, slender, 2–3 mm in diam. Leaves basal and cauline, trifoliolate; leaflets adaxially deep green, ovate, 4–5 × 2–3 cm, abaxially glaucous,

with sparse minute prostrate hairs, adaxially glabrous, base shallowly cordate with lobes separated by a moderately broad sinus, those of terminal leaflet rounded, lateral leaflets with smaller lobe rounded and larger lobe acute, margin closely spinulose-subserrulate, apex acuminate. Flowering stem with 2 opposite leaves or only 1 leaf. Inflorescence simple, racemose, 6–15-flowered, ca. 6 cm or longer; bracts entire. Pedicel ca. 3 cm, glabrous. Flowers large, ca. 3 cm in diam. Outer sepals caducous, greenish, suborbicular, 2.5–3.5 mm; inner sepals white, ovate, ca. 13 × 9 mm, apex acute. Petals pale purple, slightly longer than inner sepals; spur basally deeper purple, slightly curved, subulate, elongated, 1.5–1.6 cm, basally expanded to 5 mm high. Stamens enclosed, ca. 4 mm; filaments ca. 0.5 mm. Pistil ca. 4.2 mm; style ca. 3 mm. Fruit unknown. Fl. Apr, fr. unknown.

• Forest margins, shaded places by streamsides; 400–1000 m. Hunan (Tianping Shan).

21. *Epimedium fangii* Stearn, Bot. Mag., n.s., 12: 18. 1995.

方氏淫羊藿 fang shi yin yang huo

Herbs, ca. 25 cm tall. Rhizome long creeping, slender, 1.5–2 mm in diam. Leaves basal and cauline, trifoliolate; leaflets adaxially pale green, narrowly ovate, 4–8 × 2.5–5.5 cm, leathery, abaxially glaucous, nearly glabrous except for scattered appressed minute hairs, adaxially glabrous, base moderately cordate with lobes rounded and separated by a narrow sinus, those of lateral leaflets moderately unequal, margin spinulose-serrulate, apex obtuse or nearly acute. Inflorescence simple, racemose, loosely 6–10-flowered, to 13 cm. Pedicel ca. 2 cm, glabrous. Flowers pale yellow, large, ca. 4.5 cm in diam. Outer sepals caducous, 2.5–3.5 mm; inner sepals spreading horizontally, reddish, cymbiform, ca. 6 × 2.5 mm, obtuse. Petals pale yellow, much longer than inner sepals; spur nearly straight and horizontally spreading, subulate, elongated, ca. 2.2 cm, expanded at base into a lamina ca. 1 cm high. Stamens included, ca. 3.5 mm; filaments ca. 1 mm; anthers pale yellow, ca. 2.5 mm, valved. Capsules unknown. Fl. Apr, fr. unknown.

• Forests; 1800–1900 m. Sichuan (Emei Shan).

A natural hybrid swarm (*Epimedium × omeiense* Stearn, Bot. Mag., n.s., 12: 22. 1995) reportedly results when *Epimedium fangii* and *E. acuminatum* occur together (see also Stearn, Gen. *Epimedium*, 183. 2002).

22. *Epimedium latisepalum* Stearn, Bot. Mag. (Kew Mag.) 10: 180. 1993.

宽萼淫羊藿 kuan e yin yang huo

Herbs, ca. 30 cm tall. Rhizome creeping, slender. Leaves basal and cauline, trifoliolate; petiole to 10 cm; leaflets adaxially deep green, narrowly ovate, 6–9 × 2.5–4 cm, leathery, abaxially glaucous, with short erect scattered hairs, adaxially glabrous, base deeply cordate with lobes acute or rounded and touching or slightly overlapping, those of lateral leaflets unequal, margin spinulose-subserrulate, apex shortly acuminate or acute. Flowering stem with 2 trifoliolate opposite leaves. Inflorescence simple, racemose, loose, few flowered (ca. 8-flowered), ca. 20 cm. Pedicel 2.5–5 cm, glabrous. Flowers pendulous, large, 4–5 cm in diam. Outer sepals caducous, green, ob-

long, 3–5 mm, margin emarginate or repand; inner sepals spreading horizontally, white, elliptic, ca. 16×8 –9 mm, apically shortly acuminate. Petals white but slightly yellowish or purplish tinged at base, much longer than inner sepals; spur slightly curved, horn-shaped, elongated, ca. 2.5 cm, basally expanded into lamina ca. 7 mm. Stamens included, ca. 4 mm; anthers yellow, ca. 2.5 mm, valved, apex blunt. Pistil ca. 7 mm; style ca. 3.5 mm. Fl. and fr. unknown.

- About 900 m. Sichuan (Baoping).

Epimedium latisepalum was described from plants cultivated in the Royal Botanic Gardens, Kew, but originally from Sichuan.

23. *Epimedium ogisui* Stearn, Bot. Mag. (Kew Mag.) 10: 182. 1993.

芦山淫羊藿 *lu shan yin yang huo*

Herbs, 25–35 cm tall. Rhizome long creeping, slender, ca. 1 mm in diam. Leaves basal and cauline, basal leaves with 1 or 3 leaflets, petiole 5–13 cm. Flowering stem with 2 trifoliolate opposite leaves, petiole 2–5 cm; leaflets adaxially deep green, ovate or narrowly ovate, 3 – 6×1 –3 cm, abaxially glaucous, nearly glabrous except for scattered erect short hairs, adaxially glabrous, base moderately cordate with lobes rounded and separated by a narrow sinus, those of lateral leaflets moderately unequal, margin spinulose-suberrulate, apex acute. Inflorescence simple, racemose, loosely 3–12-flowered, 12–14 cm. Pedicel 2–3 cm, glabrous. Flowers white, ca. 2.5 cm in diam. Outer sepals caducous, 2–3.5 mm; inner sepals spreading, white, lanceolate, 16 – 19×7 –9 mm, apex acuminate. Petals white, ca. as long as inner sepals; spur slightly curved, subulate, elongated, 1.5–1.8 cm, basally expanded into lamina 7–8 mm high. Stamens included, ca. 4.5 mm; filaments flat, ca. 1.5 mm; anthers ca. 3 mm, valved, revolute, apex obtuse. Pistil ca. 6 mm. Fruit unknown. Fl. Apr, fr. unknown.

- Rocky cliffs by waterfalls; 900–1000 m. Sichuan (Lushan).

24. *Epimedium fargesii* Franchet, J. Bot. (Morot) 8: 281. 1894.

川鄂淫羊藿 *chuan e yin yang huo*

Herbs, 30–70 cm tall, sometimes to 80 cm tall. Rhizome creeping, stout, 2–8 mm in diam. Leaves basal and cauline, trifoliolate; leaflets adaxially dark green, narrowly ovate, 4 – 15×1.3 –7 cm, leathery, abaxially glaucous, glabrous or sparsely pilose, adaxially glabrous, both surfaces with conspicuous reticulate veins, base deeply cordate with usually rounded lobes, those of lateral leaflets unequal, outer lobe large, deltoid, and acute, inner lobe smaller and rounded, margin closely spinose-serrate, apex acuminate. Flowering stem normally with 2 (abnormally 3) trifoliolate opposite leaves. Inflorescence simple, racemose, or compound with lower peduncles loosely 2- or 3-flowered, rachis glandular pubescent, 14–25-flowered, 14–30 cm. Pedicel 1.5–4 cm, glandular pubescent. Flowers purplish red, ca. 2 cm. Outer sepals violet-tinged, narrowly ovate, 3 – $4 \times$ ca. 1.5 mm, apex blunt; inner sepals reflexed, white or pinkish, narrowly lanceolate, 1.5 – $1.8 \text{ cm} \times$ ca. 4 mm, apically acuminate. Petals dark violet, much shorter than inner sepals, slightly 2- or 3-lobed; spur straight, cylindric-subulate, blunt, 7–8 mm.

Stamens conspicuously prolonged, ca. 9 mm; anthers purple, 3–4 mm. Ovary ca. 1.3 cm. Capsules included; style ca. 2 cm. Fl. Mar–Apr, fr. Apr–Jun.

- Coniferous and broad-leaved mixed forests, thickets; 200–1700 m. Hubei, Sichuan.

25. *Epimedium enshiense* B. L. Guo & P. K. Hsiao, Acta Phytotax. Sin. 31: 194. 1993.

恩施淫羊藿 *en shi yin yang huo*

Herbs, 25–70 cm tall. Rhizome shortly creeping, nodes many. Leaves basal and cauline, usually trifoliolate, rarely basal leaves simple; leaflets abaxially glaucous, slightly pruinose, adaxially dark green, ovate or broadly ovate, 3.2 – 9.5×2.5 –6 cm, leathery, abaxially glabrous or sparsely white pubescent, adaxially glabrous, base cordate with lobes rounded, base of terminal leaflet with subequal lobes rounded, those of lateral leaflets slightly unequal, rounded or obtuse, margin remotely spinose-serrate, apex acuminate or shortly acuminate. Flowering stem with 2 trifoliolate opposite leaves. Inflorescence simple, racemose, 10–20-flowered, 14–33 cm, glandular. Flowers large, 1.5–2.5 cm in diam. Outer sepals 4, pale brown, outer pair ovate-orbicular, ca. 1.5 mm, inner pair ovate, ca. 2.5×1.5 mm; inner sepals pale yellow, ovate, 6 – 7×3.2 –3.7 mm, apically acute. Petal spur pale yellow, horn-shaped, longer than inner sepals, 7–12 mm, base lamina-less. Stamens slightly prolonged, ca. 3 mm; anther ca. 2 mm, valved. Capsules 1–1.4 cm; style ca. 5 mm. Seeds 10. Fl. Apr–May, fr. May–Jun.

- Slopes; ca. 400 m. Hubei (Enshi).

26. *Epimedium franchetii* Stearn, Kew Bull. 51: 396. 1996.

木鱼坪淫羊藿 *mu yu ping yin yang huo*

Herbs, 20–60 cm tall. Rhizome compact, ca. 7 mm in diam. Leaves basal and cauline, trifoliolate, leathery; basal petioles 4–10 cm; leaflets abaxially occasionally reddish tinged, adaxially shiny, narrowly ovate, 9 – 14×6 –7 cm, abaxially glaucous, with extremely minutely appressed hairs, adaxially glabrous, base deeply cordate with a narrow sinus, lobes of terminal leaflet equal and obtuse or acute, those of lateral leaflets unequal with inner lobe smaller and acute or obtuse, outer lobe much longer and acuminate, margin closely spinose-serrate, apex acute or acuminate. Flowering stem with 2 trifoliolate opposite leaves or 3 whorled leaves. Inflorescence simple, 14–25-flowered, 15–30 cm. Pedicel 1–3 cm, glandular hairy. Flowers large, ca. 4.5 cm in diam. Outer sepals caducous, green, to 5 mm; inner sepals pale yellow, narrowly ovate, ca. 10×4 –5 mm, apically acuminate. Petals pale sulfur-yellow, much longer than inner sepals; spur much curved, subulate, elongate, ca. 2 cm, lamina-less. Stamens exposed, ca. 4.5 mm; filaments pale yellow, ca. 2 mm; anthers pale yellow, valved. Pistil ca. 5 mm. Fruit unknown. Fl. Apr, fr. unknown.

- Forests; ca. 1200 m. Guizhou, Hubei.

27. *Epimedium lishihchenii* Stearn, Kew Bull. 52: 664. 1997.

时珍淫羊藿 *shi zhen yin yang huo*

Epimedium membranaceum K. Meyer subsp. *orientale* Stearn.

Herbs, 30–40 cm tall. Rhizome long creeping, slender, 2–3 mm in diam. Leaves basal and cauline, trifoliolate; leaflets adaxially dark green, narrowly ovate, 5–11 × 3.5–5 cm, leathery, abaxially glaucous, with long multicellular hairs or subglabrous, base cordate with a narrow or open sinus, lobes of terminal leaflet equal and obtuse, those of lateral leaflets unequal, with inner one smaller and rounded or obtuse, outer one longer and acute, margin closely spinulose-serrulate, apex acuminate or sometimes acute. Flowering stem with 2 opposite leaves. Inflorescence simple, 5–11-flowered, 7–12 cm. Pedicel 1–2 cm, glandular hairy. Flowers yellow, large. Outer sepals caducous, 4–5 mm, with white margins; inner sepals appressed to petals, yellowish, ovate or narrowly oblong, 10–11 × 6–7 mm, apically acute. Petals pale sulfur-yellow, much longer than inner sepals, lamina-less; spur strongly curved, subulate, elongated, 2–2.5 cm. Stamens exposed, pale yellow, ca. 5 mm; filaments ca. 1 mm; anthers ca. 3.5 mm. Pistil ca. 7 mm. Fruit unknown. Fl. Apr–May, fr. unknown.

- Forests on slopes. Jiangxi (Lu Shan).

28. *Epimedium davidii* Franchet, *Nouv. Arch. Mus. Hist. Nat.*, sér. 2, 8: 195. 1885 [“*davidii*”].

宝兴淫羊藿 *bao xing yin yang huo*

Epimedium membranaceum K. Meyer.

Herbs, 30–50 cm tall. Rhizome shortly creeping, stout. Leaves basal and cauline, (3 or)5-foliolate, basal leaf usually much shorter than flowering stem leaf, 12–25 cm; leaflets abaxially glaucous, adaxially deep green, shiny, ovate or broadly ovate, 6–12 × 2–5 cm, leathery or papery, abaxially papillose and sparsely pubescent with short appressed hairs, both surfaces with distinct reticulate veins, base deeply or shallowly cordate with subequal rounded lobes, margin spinose-serrate, apex obtuse or acute. Flowering stem with 2 trifoliolate opposite leaves, rarely alternate or 3 leaves. Panicle loosely 6–24-flowered, 15–25 cm. Pedicel 1.5–2 cm, slender, glandular. Flowers pale yellow, 2–3 cm in diam. Outer sepals ovate, 2–4 mm, blunt; inner sepals pale reddish, narrowly ovate, 6–7 × 3–4 mm, apex acute. Petals much longer than inner sepals, lamina distinct, petaloid, rounded, forming a cup 7–13 mm deep; spur slender, curved, subulate, 1–1.5 cm. Stamens included, 3–4 mm; filaments flat, ca. 7 mm; anthers ca. 4 mm, valved. Ovary ca. 5 mm. Capsule 1.5–2 cm; style ca. 5 mm, rostrate. Fl. Apr–May, fr. May–Aug.

- Forests, thickets, mixed forests by streams, rock crevices; 1400–3000 m. Sichuan, Yunnan.

29. *Epimedium dolichostemon* Stearn, *Kew Bull.* 45: 685. 1990.

长蕊淫羊藿 *chang rui yin yang huo*

Herbs, ca. 30 cm tall. Rhizome shortly creeping. Leaves basal and cauline, trifoliolate; leaflets adaxially deep green, ovate-lanceolate or lanceolate, to 8 × 3 cm, leathery, abaxially glabrous, base deeply cordate with subequal acute lobes, those of lateral leaflets unequal, acuminate, margin remotely spinose-serrate, apex acuminate. Flowering stem with 2 trifoliolate op-

posite leaves. Panicle loosely many flowered (to 38-flowered), ca. 15 cm, with lower peduncles 1–2 cm, each 2- or 3-flowered at base of rachis. Pedicel 1–1.5 cm, glabrous. Outer sepals caducous, 2.5–3 mm; inner sepals white, narrowly elliptic, 8–9 × ca. 2.5 mm. Petals reddish purple, cucullate, much shorter than inner sepals, ca. 3 mm, with slight lamina and blunt incurved spur. Stamens conspicuously prolonged, ca. 8 mm; filaments yellowish, 4.5–5 mm; anthers ca. 2.5 mm, valved, revolute. Fruit unknown. Fl. Apr, fr. unknown.

- Habitat unknown, described from plants in cultivation in England; ca. 1400 m. Sichuan (Shizhu).

30. *Epimedium mikinorii* Stearn, *Kew Bull.* 53: 214. 1998.

直距淫羊藿 *zhi ju yin yang huo*

Herbs, 30–40 cm tall. Rhizome shortly repent, compact. Leaves basal and cauline, trifoliolate; leaflets adaxially dark green, lanceolate, 8–11 × 3–4 cm, leathery, abaxially glaucous, glabrous, base cordate with equal lobes rounded, those of lateral leaflets oblique with outer lobe large and acute, inner lobe smaller and rounded, margin closely spinose-serrulate, apex long acuminate. Flowering stem with 2 trifoliolate opposite leaves. Panicle ca. 30-flowered, ca. 18 cm, glabrous, with lower peduncles 3–5-flowered. Pedicel ca. 1 cm. Flowers large. Outer sepals caducous, oblong, ca. 3.5 mm; inner sepals rose-tinged, elliptic, 11–12 × 4–5.5 mm. Petals much longer and narrower than inner sepals, with yellow-edged lamina ca. 3.5 mm high; spur slightly curved, nearly straight, purple, subulate, elongated, 1.7–2 cm. Stamens enclosed, whitish, ca. 3 mm; filaments ca. 1 mm; anthers ca. 2 mm, valved. Pistil ca. 5.8 mm; style slightly curved. Fruit unknown. Fl. Apr, fr. unknown.

- Forests on slopes; ca. 700 m. Hubei (Enshi).

31. *Epimedium chlorandrum* Stearn, *Kew Bull.* 52: 660. 1997.

绿药淫羊藿 *lü yao yin yang huo*

Herbs, 35–65 cm tall. Rhizome compact. Leaves basal and cauline, trifoliolate; leaflets adaxially green, mottled with brown when young, narrowly ovate or sublanceolate, 5–11 × 2–4.5 cm, leathery, abaxially glaucous, with numerous minutely appressed hairs, base moderately cordate, terminal leaflet with equal rounded lobes, lateral leaflets oblique with outer lobe large and obtuse or rounded, inner lobe smaller and rounded, margin slightly undulate, sparsely or closely spinulose-subserulate, apex shortly acuminate. Panicle 12–30-flowered, 25–36 cm, lower peduncles 3–5-flowered. Pedicel ca. 2.5 cm, glabrous. Flowers large, ca. 4 cm in diam. Outer sepals caducous, green, 2–3 mm; inner sepals not appressed to petals, greenish, narrowly ovate, unequal, outer pair ca. 8 × 4.5 mm, inner pair ca. 10 × 4.5 mm. Petals pale yellow, much longer than inner sepals; spur strongly curved, subulate, elongated, lamina-less. Stamens prolonged, ca. 4.5 mm; filaments white, with slightly pink tinge; anthers green, ca. 3 mm; pollen green. Fruit unknown. Fl. Apr, fr. unknown.

- Forests on slopes; ca. 900 m. Sichuan (Baoping).

32. *Epimedium wushanense* T. S. Ying, *Acta Phytotax. Sin.* 13(2): 55. 1975.

巫山淫羊藿 *wu shan yin yang huo*

Herbs, evergreen, 50–80 cm tall. Rhizome short, stout, nodose. Leaves basal and cauline, trifoliolate; leaflets lanceolate to narrowly lanceolate, 9–23 × 1.8–4.5 cm, leathery, abaxially lanate or becoming glabrous, adaxially glabrous, base cordate, terminal leaflet with equal rounded lobes, lateral leaflets oblique with outer lobe large, deltoid, and acute, inner lobe smaller and rounded, margin coarsely aristate-dentate, apex acuminate or long acuminate. Flowering stem with 2 trifoliolate opposite leaves. Panicle many flowered (25–70-flowered), 15–30(–50) cm; rachis glabrous. Pedicel 1–2 cm, sparsely glandular pubescent or glabrous. Flowers pale yellow, to 3.5 cm in diam. Outer sepals suborbicular, 2–5 × 1.5–3 mm; inner sepals pale yellow, broadly elliptic, 3–15 × 1.5–8 mm, apex obtuse. Petals slightly curved, pale yellow or sometimes purplish at base, horn-shaped, longer than inner sepals, 0.6–2 cm. Stamens ca. 5 mm; filaments 1–1.5 mm; anthers ca. 4 mm, valved, revolute. Pistil ca. 5 mm; ovary obliquely terete; ovules 10–12. Capsule ca. 1.5 cm; style ca. 4.5 mm, rostrate. Fl. Apr–May, fr. May–Jun.

• Forests, thickets, weedy places, crevices; 300–1700 m. Chongqing, Guangxi, Guizhou, Hubei, Sichuan.

33. *Epimedium stellulatum* Stearn, Kew Bull. 48: 810. 1993.

星花淫羊藿 *xing hua yin yang huo*

Herbs, 20–35 cm tall. Rhizome shortly creeping. Leaves basal and cauline, trifoliolate; leaflets adaxially dark green, shiny, ovate, 8–9 × 4–7 cm, leathery, abaxially conspicuously puberulent, base deeply cordate, terminal leaflet with equal rounded lobes, lateral leaflets moderately oblique with outer lobe and inner lobe smaller, acute, margin spinose-serrate, apex acute or shortly acuminate. Flowering stem with 2 trifoliolate opposite leaves, rarely with 1 leaf. Panicle loosely 20–40-flowered, 15–20 cm, with lower peduncles to 3 cm, each 3-flowered. Pedicel 5–15 mm, with numerous glandular hairs; bracteole ca. 2.2 mm, apex shortly acuminate. Outer sepals 4, caducous, unequal, 2.5–3 mm; inner sepals white, lanceolate, ca. 12 × 3 mm, apically acuminate. Petals nearly straight, brown suffuse but orange toward base, much shorter than inner sepals, ca. 2.5 mm, with slight lamina and blunt spur. Stamens conspicuously prolonged, ca. 3.5 mm; filaments yellowish, ca. 1.5 mm; anthers yellow, ca. 2 mm, valved. Pistil ca. 4.5 mm; style ca. 2.5 mm. Fruit unknown. Fl. Apr, fr. unknown.

• Slopes; ca. 900 m. Hubei, Sichuan.

34. *Epimedium reticulatum* C. Y. Wu ex S. Y. Bao, Acta Phytotax. Sin. 25: 156. 1987.

革叶淫羊藿 *ge ye yin yang huo*

Herbs, 30–40 cm tall. Rhizome purplish red, shortly creeping. Leaves basal and cauline, trifoliolate; petiole of basal leaves ca. 20 cm, petiole of cauline leaves 5–6 cm; leaflets adaxially dark green, ovate, 5–7 × 3.5–5 cm, thickly leathery, glabrous, abaxially pilose in axils of veins, adaxially with 5 slightly impressed veins, both surfaces with conspicuous reticulate veins, base deeply cordate with usually rounded lobes, those of lateral leaflets conspicuously unequal, margin spinose-

serrate, apex acute or acuminate. Flowering stem with 2 opposite trifoliolate leaves, sometimes 3 or 4 leaves whorled. Panicle 40–45-flowered, 30–35 cm, with lower peduncles 2–20-flowered; rachis glandular pubescent. Pedicel ca. 1.5 cm, slender, glandular pubescent. Flowers yellow. Outer sepals oblong, ca. 5 mm; inner sepals elliptic, ca. 6 mm, apex rounded. Petal spur yellow, horn-shaped, shorter than inner sepals, ca. 4.5 mm. Stamens ca. 3 mm; filaments flat, short. Capsule 1.2–1.5 cm; style rostrate. Seeds 3–5, reniform. Fl. Apr–May, fr. Jun–Jul.

• Forests; ca. 1100 m. Sichuan.

35. *Epimedium ilicifolium* Stearn, Kew Bull. 53: 213. 1998.

镇坪淫羊藿 *zhen ping yin yang huo*

Herbs, 28–42 cm tall. Rhizome compact. Leaves basal and cauline, trifoliolate; leaflets adaxially glossy, lanceolate, 8–11 × 3–4 cm, leathery, abaxially puberulent, adaxially glabrous, base cordate with an open sinus and acute lobes, terminal leaflet with equal rounded lobes, lateral leaflets oblique with outer lobe large and inner lobe smaller, margin undulate-sinuate and sparsely spinose-serrate, apex long acuminate. Flowering stem with 2 opposite trifoliolate leaves. Panicle loosely 25–32-flowered, 18–23 cm. Pedicel ca. 2 cm, glandular. Flowers yellow, large. Outer sepals caducous, black, white-margined, obovate, ca. 4.2 × 4 mm, apex emarginate; inner sepals pale yellow, elliptic or narrowly ovate, 10–12 × 5–6 mm, apex acute. Petals pale yellow, much longer than inner sepals, ca. 2 mm; spur strongly curved, subulate, elongated, basal lamina ca. 7 mm high. Stamens enclosed, yellow, ca. 4 mm; filaments ca. 1 mm; anthers ca. 3 mm, valved. Pistil ca. 5.5 mm; style ca. 3 mm. Fruit unknown. Fl. Apr, fr. unknown.

• 1600–1700 m. Shaanxi (Zhenping).

36. *Epimedium acuminatum* Franchet, Bull. Soc. Bot. France 33: 109. 1886.

粗毛淫羊藿 *cu mao yin yang huo*

Epimedium komarovii H. Léveillé.

Herbs, 30–70 cm tall. Rhizome stout, short, sometimes long creeping, 0.5–2.5 cm in diam. Leaves basal and cauline, trifoliolate; leaflets adaxially deep green, narrowly ovate or lanceolate, 3–18 × 1.5–7 cm, thinly leathery, abaxially glaucous, with dense or sparse shortly appressed fairly stout bristles, sometimes nearly glabrous, adaxially glabrous, base cordate, terminal leaflet with equal rounded lobes, lateral leaflets oblique with outer lobes large and rounded, inner lobes smaller and rounded, margin closely spinose-serrate, apex long acuminate. Flowering stem with 2 trifoliolate opposite leaves, sometimes 3-whorled. Panicle 10–50-flowered, 12–25 cm, with lower peduncles loosely 3–5-flowered, glabrous or glandular pubescent. Pedicel 1–4 cm. Flowers yellow, white, rose-purple, or pale violet, large, 3–4 cm in diam. Outer sepals 4, outer pair ovate-oblong, ca. 3 × 2 mm, inner pair broadly obovate, ca. 4.5 × 4 mm; inner sepals ovate-elliptic, 8–12 × 3–7 mm, apically acute. Petals curving outward, horn-shaped, much longer than inner sepals, 1.5–2.5 cm, tapering from swollen but lamina-less base. Stamens 3–4 mm; anthers ca. 2.5 mm, valved, revolute. Capsule ca. 2 cm; style long rostrate. Seeds numerous. Fl. Apr–May, fr. May–Jul. $2n = 12^*$.

• Forests, thickets, bamboo forests, weedy slopes; 300–2400 m. Guangxi, Guizhou, Sichuan, Yunnan.

37. *Epimedium hunanense* (Handel-Mazzetti) Handel-Mazzetti, *Symb. Sin.* 7: 324. 1931.

湖南淫羊藿 hu nan yin yang huo

Epimedium davidii Franchet var. *hunanense* Handel-Mazzetti, *Anz. Akad. Wiss. Wien, Math.-Naturwiss. Kl.* 62: 131. 1925; *E. kunawarensense* S. Clay.

Herbs, ca. 40 cm tall. Rhizome shortly creeping, 3–5 mm in diam. Leaves basal and cauline, trifoliolate; leaflets abaxially glaucescent, adaxially deep green, oblong-elliptic or narrowly ovate, 10–13 × ca. 6 cm, leathery, abaxially papillose and sparsely pubescent or nearly glabrous, adaxially glabrous, base deeply cordate, terminal leaflet with equal rounded lobes, lateral leaflets conspicuously oblique with outer lobe large, deltoid, and acute or rounded, inner lobe smaller and rounded, margin closely spinulose-suberrulate, apex acuminate. Flowering stem with 2 trifoliolate opposite leaves. Panicle loosely 10–20-flowered, nearly glabrous, with lower peduncles 2- or 3-flowered. Pedicel 1–2 cm, sparsely glandular pubescent. Flowers yellow, ca. 3.5 cm in diam. Outer sepals oblong-elliptic, ca. 4 × 2 mm, apex obtuse; inner sepals broadly elliptic, 5–6 × 3–4 mm, apically obtuse. Petals nearly cylindrical and horizontally spreading, much longer than inner sepals, with distinct petaloid rounded lamina forming a cup ca. 8 mm deep and fairly stout; spurs straight, 1.5–1.8 cm, blunt. Stamens ca. 4 mm; filaments ca. 1 mm; anther ca. 3 mm, valved, revolute. Capsules narrowly ellipsoid, ca. 1.3 cm; style 2–3 mm, rostrate. Fl. Mar–Apr, fr. Apr–Jun.

• Forests, thickets, slopes, roadsides; 400–1400 m. Guangxi, Hubei, Hunan.

38. *Epimedium rhizomatosum* Stearn, *Kew Bull.* 53: 220. 1998.

强茎淫羊藿 qiang jing yin yang huo

Herbs, 38–42 cm tall. Rhizome creeping, elongated, ca. 8 cm or longer, slender, 1.5–2 mm in diam. Leaves basal and cauline, trifoliolate; leaflets adaxially green, narrowly ovate, 4–6 × 2–3 cm, leathery, abaxially glaucous, with scattered minute erect hairs, adaxially glabrous, base shallowly cordate, with narrow sinus and basal lobes rounded or acute, lateral leaflets conspicuously oblique with outer lobe large, inner lobe smaller, margin closely spinulose-suberrulate, apex acuminate. Flowering stem with 2 opposite or alternate leaves. Panicle 5–30-flowered, 9–30 cm, with lower peduncles 2–5-flowered. Pedicel 1.5–2 cm, glandular hairy. Flowers large, 4–6 cm in diam. Outer sepals caducous, white with purple tinge, ca. 4 mm; inner sepals appressed, white or reddish, narrowly ovate, ca. 6 × 2.5 mm, apically acute. Petals pale yellow, much longer than inner sepals; spur curved, subulate, elongated, 2–3.5 cm, lamina-less. Stamens nearly enclosed, pale yellow, ca. 3.5 mm; filaments ca. 1.5 mm; anthers ca. 2 mm, valved. Pistil ca. 4.3 mm. Capsules ca. 2.5 cm; style ca. 7 mm. Fl. Apr, fr. Jul.

• Forests, thickets; 2000–2200 m. Sichuan.

39. *Epimedium sutchuenense* Franchet, *J. Bot. (Morot)* 8: 282. 1894.

四川淫羊藿 si chuan yin yang huo

Herbs, 15–60 cm tall. Rhizome long creeping, 1–4 mm in diam., with internodes to 14 cm. Leaves basal and cauline, trifoliolate; leaflets adaxially green, ovate or narrowly ovate, 5–13 × 2–5 cm, thinly leathery, abaxially glaucous, papillose, sparsely gray pubescent, reticulate veins conspicuous, adaxially glabrous, base deeply cordate, terminal leaflet with equal rounded lobes, lateral leaflets conspicuously oblique with outer lobe large and acute, inner lobe smaller and rounded, apex long acuminate. Flowering stem with 2 trifoliolate opposite leaves. Inflorescence simple, racemose, 4–10-flowered, 8–15 cm, glandular. Pedicel 1.5–2.5 cm, glandular. Flowers rose or mauve-purple, 3–4 cm in diam. Outer sepals 4, outer pair ovate, ca. 3 mm, apex rounded, inner pair broadly obovate, ca. 4 mm; inner sepals reflexed, narrowly lanceolate, 1.5–1.7 cm × ca. 3 mm, apex long acuminate. Petals reflexed, pale purplish red, spur horn-shaped, ca. as long as inner sepals or slightly longer, 1.5–2 cm, lamina-less. Stamens prolonged, 4–5 mm; filaments 1–2 mm; anthers 3–4 mm, valved. Capsules 1.5–2 cm; style rostrate. Fl. Mar–Apr, fr. May–Jun.

• Forests, thickets, grasslands, streamsides; 400–1900 m. Guizhou, Hubei, Sichuan.

40. *Epimedium brevicornu* Maximowicz, *Trudy Imp. S.-Peterburgsk. Bot. Sada* 11: 42. 1889.

淫羊藿 yin yang huo

Epimedium rotundatum K. S. Hao.

Herbs, 20–60 cm tall. Rhizome short, clumped, 3–5 mm in diam. Leaves basal and cauline, usually biternate, 9-foliolate, rarely 5-foliolate; leaflets abaxially glaucous, adaxially usually shiny, ovate or broadly ovate, 1.5–7.5 × 1–6 cm, papery or thickly so, abaxially glabrous or scarcely pubescent, adaxially with conspicuous reticulate veins, base deeply cordate, terminal leaflet with equal rounded lobes, lateral leaflets slightly oblique with outer lobes large and acute or rounded, inner lobe smaller and rounded, margin spinose-serrate, apex rounded or acute to acuminate. Flowering stem with 2 opposite usually biternate leaves. Panicle 10–35 cm, loosely 20–50-flowered; rachis and pedicel glandular. Pedicel 5–20 mm. Flowers white or pale yellow, ca. 1.5 cm in diam. Outer sepals dark green, ovate-triangular, 1–3 mm; inner sepals white or pale yellow, lanceolate, ca. 10 × 4 mm. Petals much shorter than inner sepals, with slight lamina and blunt spurs; spur narrow, conical, 2–3 mm. Stamens exerted, 3–4 mm; anthers ca. 2 mm, valved. Capsules ca. 1 cm; style 2–3 mm, rostrate. Fl. May–Jun, fr. Jun–Aug.

• Forests, thickets, slopes; 600–3500 m. Gansu, Henan, Hubei, Qinghai, Shaanxi, Shanxi, Sichuan.

41. *Epimedium elongatum* Komarov, *Trudy Imp. S.-Peterburgsk. Bot. Sada* 29: 139. 1908.

川西淫羊藿 chuan xi yin yang huo

Herbs, 25–60 cm tall. Rhizome moderately long creeping, 2–5 mm in diam. Leaves basal and cauline, bi- or triternate, 9-foliolate or occasionally 5-foliolate; leaflets adaxially green, ovate or suborbicular, 1.5–7.5 × 1–6 cm, papery, abaxially sparsely pubescent or glabrous, adaxially glabrous, both surfaces with conspicuous reticulate veins, base deeply cordate, terminal leaflet with equal rounded lobes, lateral leaflets slightly oblique with outer lobe large and rounded or acute, inner lobe smaller and rounded, margin spinose-serrate, apex rounded or acute. Flowering stem with 3 alternate or rarely opposite leaves, upper biternate or trifoliolate, lower biternate or triternate. Panicle 17–30-flowered, 15–30 cm, sparsely glan-

dular, with lower peduncles 3–5-flowered. Pedicel 1–2 cm, sparsely glandular. Flowers yellow, large, 2.5–3 cm in diam. Outer sepals whitish, ovate, 3–4 × ca. 2 mm, blunt; inner sepals purple, lanceolate, ca. 4 × 1.5 mm, apically acute. Petals yellow, longer than inner sepals; spur horizontally spreading or upwardly curved, ca. 1.5 cm, slender, lamina-less. Stamens slightly prolonged, ca. 3 mm; anthers ca. 2 mm, valved, revolute. Pistil ca. 4 mm. Capsules elongated, 2–2.5 cm, slender; style ca. 8 mm. Fl. May–Jun, fr. Jun–Jul.

- Forests, forest margins, thickets; 2600–3700 m. Sichuan.

Insufficiently known species

Epimedium baojingense Q. L. Chen & B. M. Yang, Acta Phytotax. Sin. 20: 482. 1982 [*“baojingensis”*].

Epimedium baojingense is known only from the type gathering (Hunan: Baojing County, Lüdong Shan, 23 Apr 1956, B. M. Yang 34, holotype, HNNU). As mentioned by Stearn (Gen. *Epimedium*, 113. 2002), *E. baojingense* has stem leaves with only a single leaflet, as in *E. simplicifolium*. It is reported to differ from *E. simplicifolium* by having a simple inflorescence with dark yellow hairs.

Epimedium campanulatum Ogisu, Kew Bull. 51: 401. 1996.

According to the author, *Epimedium campanulatum* is morphologically similar to *E. ecalcaratum* G. Y. Zhong and *E. platypetalum* K. I. Meyer. *Epimedium campanulatum* is reported to differ from *E. ecalcaratum* in having 1 or 2 leaves per flowering stem, and basal and cauline leaves with only 3, never 5 or 7, leaflets. *Epimedium campanulatum* differs from *E. platypetalum* in having compact or shortly creeping rhizomes and compound, rarely simple, inflorescences. It flowers in mid to late May and occurs at ca. 2000 m in Sichuan (Dujiangyan).

Epimedium grandiflorum C. Morren, Belgique Hort. 2: 141. 1852.

Epimedium grandiflorum was described from cultivated plants brought to Belgium (Ghent) from Japan by Philipp Franz von Siebold in 1830. Stearn includes in the range of *E. grandiflorum* “southern Manchuria,” but we have seen no specimens from China. The reports of *E. grandiflorum* in the Flora of Anhui (see X. H. Qian, Fl. Anhui 2: 346. 1986) and Flora of Zhejiang (see C. S. Ding, Fl. Zhejiang 2: 307–320. 1992) are probably based on plants here treated as *E. koreanum*.

Epimedium jingzhouense G. H. Xia & G. Y. Li, Nordic J. Bot. 27: 472. 2009.

Epimedium jingzhouense is known only from the type gathering (Hunan: Jingzhou County, Pukou village, 300 m, 8 Apr 2008, Xia et al. s.n., holotype, ZJFC).

Epimedium pseudowushanense B. L. Guo, Acta Phytotax. Sin. 45: 814. 2007.

According to the authors, *Epimedium pseudowushanense* is morphologically similar to *E. wushanense* but differs in flower structure. It differs from *E. mikinorii* in having leaves abaxially villous and glaucous, more slender spurs, 10–15 mm, inner sepals broadly ovate or ovate, and purplish or yellow petals with purple lamina. Its flowering time is from Mar–Apr, fruiting is in May, and it occurs at 900–1400 m in Guangxi and Guizhou.

Epimedium pudingense S. Z. He, Y. Y. Wang & B. L. Guo, Ann. Bot. Fenn. 47: 226. 2010.

Epimedium pudingense is known only from the type gathering

(Guizhou: Puding County, 1300 m, 13 Apr 1995, S. Z. He 95413, holotype, HGCM).

Epimedium qingchengshanense G. Y. Zhong & B. L. Guo, Acta Phytotax. Sin. 45: 817. 2007.

Epimedium qingchengshanense is reported to differ from *E. fargesii* in having smaller flowers but larger rounded petal lamina and purple filaments. Its flowering time is from May–Jun and it occurs at 900–1500 m in Sichuan (Qingcheng Shan).

Epimedium shennongjiaense Yan J. Zhang & J. Q. Li, Novon 19: 567. 2009 [*“shennongjiaensis”*].

Epimedium shennongjiaense is known only from the type gathering (Hubei: cultivated at Wuhan Botanical Garden from material collected at Muyuping, Shennongjia National Nature Reserve, 30 Mar 2007, Y. J. Zhang 148, holotype, HIB; isotype, HIB).

