

17. STEPHANIA Loureiro, Fl. Cochinch. 2: 598, 608. 1790.

千斤藤属 qian jin teng shu

Clypea Blume.

Herbaceous or woody vines. Rootstock often tuberous, sometimes above ground; branches striate, slightly twining. Petiole often very long, swollen at both ends; leaf blade deltoid, deltoid-rotund, or deltoid-subovate, peltate, papery, rarely membranous or sub-leathery, palmately veined. Inflorescences axillary or from axillary stems with leaves reduced or absent, rarely from old stems, usually umbelliform cymes, sometimes condensed into heads on discoid receptacles, often in compound umbels, rarely along thyrsoid axis. Male flowers: sepals in (1 or)2 symmetrical whorls of 3 or 4, free or occasionally connate at base; petals 3 or 4 in 1 whorl, rarely in 2 whorls or absent; stamens 2–6, usually 4, connate into a peltate synandrium, anthers dehiscing transversely. Female flowers: perianth symmetrical; sepals and petals each in 1 whorl of 3 or 4, or asymmetrical, sepal 1(or 2) and petals 2(or 3); staminodes absent; carpel 1, subovoid. Drupes red or orangish red, subglobose, slightly flattened on both sides, style scar near base; endocarp usually bony, obovoid to obovoid-rotund, abaxially bearing 1 or 2 rows of transverse ridges or columnar ornamentation on each side; condyle slightly concave on each side, perforate or not. Seed horseshoe-shaped; embryo horseshoe-shaped; endosperm fleshy; cotyledons subequal to or shorter than radicle.

About 60 species: tropical and subtropical Asia and Africa, a few in Oceania; 37 species (30 endemic) in China.

Plants of this genus contain more than 50 kinds of alkaloids. Their tuberous roots are widely used in traditional Chinese medicine and as local medicines.

- 1a. Perianth in female flowers symmetrical; sepals and petals each in whorls of 3 or 4; male and female flowers similar; main root cylindrical and fleshy or roots not enlarged.
 - 2a. Inflorescences mostly slender axillary thyrses; male flowers with sepals usually in 1 whorl of 4; endocarp abaxially bearing 4 rows of ornamentation, 2 inner rows columnar and very prominent; condyle usually not perforate; [leaf blade abaxially densely pubescent]; main root cylindrical, fleshy (*S. subg. Botryodiscia*) 11. *S. tetrandra*
 - 2b. Inflorescences umbelliform cymes, simple or compound, sometimes forming a terminal thyrse by reduction of apical leaves; male flowers with sepals in 2 whorls each of 3 or 4; endocarp abaxially bearing 2, 4, or 10 or more rows of ornamentation; [leaf blade abaxially often glabrous]; roots not tuberous and fleshy (*S. subg. Stephania*).
 - 3a. Cymelets and flowers sessile or nearly so, tightly condensed into compound umbelliform cymes; endocarp abaxially ornamented with rows of 10 or slightly more (*S. sect. Stephania*).
 - 4a. Leaf blade ca. as long as wide, abaxial surface glaucous 9. *S. japonica*
 - 4b. Leaf blade longer than wide, abaxial surface usually green 10. *S. longa*
 - 3b. Cymelets and flowers conspicuously pedicellate, loose, in simple, seldom compound, umbelliform cymes; endocarp abaxially ornamented with rows of 2 or 4 (*S. sect. Laxithyrsa*).
 - 5a. Inflorescence compound with umbel-like cymelets themselves in secondary umbels; condyle perforate.
 - 6a. Endocarp 10–12 mm, abaxially with 4 rows of columnar processes with ends swollen; palmate veins thick, conspicuously raised abaxially 7. *S. merrillii*
 - 6b. Endocarp 4–5 mm, abaxially ornamented with 2 rows of transverse ridges; palmate veins slender, slightly raised abaxially 8. *S. delavayi*
 - 5b. Inflorescence simple with cymelets borne directly on peduncle; endocarp abaxially ornamented with 2 or 4 rows each of less than 10 transverse ridges; condyle perforate or not.
 - 7a. Sepals apically mucronate or acutely acuminate, never caudate.
 - 8a. Condyle perforate 3. *S. gracilentia*
 - 8b. Condyle not perforate.
 - 9a. Leaf blade broadly ovate-triangular, usually wider than long 1. *S. herbacea*
 - 9b. Leaf blade narrowly triangular, longer than wide 2. *S. elegans*
 - 7b. Sepals conspicuously caudate at apex.
 - 10a. Leaf blade margin repand dentate 6. *S. chingtungensis*
 - 10b. Leaf blade margin entire.
 - 11a. Petiole inserted 1–2 mm from base of leaf blade; leaf blade subpeltate, ovate-triangular or broadly triangular to subtriangular, longer than wide; condyle not perforate 4. *S. subpeltata*
 - 11b. Petiole inserted ca. 10 mm from base of leaf blade; leaf blade conspicuously peltate, triangular, ca. as long as wide; condyle perforate 5. *S. sutchuenensis*
 - 1b. Perianth in female flowers asymmetrical, occasionally also symmetrical within same inflorescence; sepal

- 1(–3), scalelike; petals 2(or 3); rootstock tuberous, often huge, often partly above ground (*S.* subg. *Tuberiphania*).
- 12a. Endocarp abaxially ornamented with transverse ridges; male and female inflorescences ± similar (*S.* sect. *Transcoctula*).
- 13a. Peduncle of inflorescence with disciform receptacle at apex, both male and female inflorescences capitate 18. *S. cephalantha*
- 13b. Peduncle of inflorescence without disciform receptacle at apex.
- 14a. Leaves with margin dentate; branches and leaves containing red juice 17. *S. dentifolia*
- 14b. Leaves entire or horned; branches and leaves not containing red juice.
- 15a. Endocarp abaxially ornamented with rows of 20–25 transverse ridges; condyle perforate; petals of male flowers with granular glands 16. *S. glabra*
- 15b. Endocarp abaxially ornamented with rows of less than 20 transverse ridges; condyle not perforate; petals of male flowers with or without glands.
- 16a. Inflorescence with simple umbelliform cymes; flowers purple; male petals not adaxially glandular; leaf blade usually less than 7(–9) cm long and wide.
- 17a. Male sepals ovate, 1.3–1.6 mm; leaves abaxially glabrous; peduncle 1–4 cm 12. *S. epigaea*
- 17b. Male sepals rounded, ca. 0.5 mm in diam.; leaves abaxially whitish puberulent; peduncle 0.5–1.5 cm 13. *S. brevipedunculata*
- 16b. Inflorescence with compound umbelliform cymes; flowers greenish yellow; leaf blade usually more than 10 cm long and wide.
- 18a. Male petal with margin extended, with 2 adaxial glands 14. *S. sinica*
- 18b. Male petal with margin involute, without adaxial glands 15. *S. intermedia*
- 12b. Endocarp abaxially ornamented with rows of columnar tubercles; male and female inflorescences ± different (*S.* sect. *Tuberiphania*).
- 19a. Endocarp tubercles apically obtuse, or slightly swollen and capitate; condyle perforate.
- 20a. Peduncles and umbellet pedicels not bracteate and bracteolate or occasionally with 1 or 2 reduced bracts; petals with verruculose or tuberculate processes inside.
- 21a. Sepals ca. 3 mm, abaxially densely papillate; leaf blade margin horned or horned dentate; fruit unknown 25. *S. macrantha*
- 21b. Sepals ca. 2 mm, abaxially not papillate; leaf blade margin entire; fruiting pedicels fleshy 26. *S. officinarum*
- 20b. Peduncles and umbellet pedicels bracteate and bracteolate; petals with or without processes inside.
- 22a. Petals of male flowers with lateral margins involute.
- 23a. Endocarp 5–6 mm; male petals abaxially conspicuously depressed, with many verruculose or lobed processes 19. *S. viridiflavens*
- 23b. Endocarp 9–10 mm; male petals abaxially not depressed, without verruculose processes 20. *S. brachyandra*
- 22b. Petals of male flowers with lateral margins not involute, with 2 large glands inside.
- 24a. Sepals and petals purple; branches and leaves containing purplish red juice 21. *S. yunnanensis*
- 24b. Sepals green; petals orangish yellow; branches and leaves not containing red juice.
- 25a. Branches and leaves black when dried; sepal margins involute when flower blooming 22. *S. lincangensis*
- 25b. Branches and leaves not black when dried; sepal margins not involute.
- 26a. Fruiting pedicel not fleshy; endocarp with columnar tubercles apically obtuse 23. *S. kuinanensis*
- 26b. Fruiting pedicel fleshy; endocarp with columnar tubercles apically swollen and capitate 24. *S. dicentrinifera*
- 19b. Endocarp tubercles abaxially with columnar ornamentation apically curved.
- 27a. Petals of male flowers with 2 large glands inside.
- 28a. Condyle not perforate 37. *S. miyiensis*
- 28b. Condyle perforate.
- 29a. Fruiting pedicel not fleshy; condyle perforate in middle 34. *S. kwangsiensis*
- 29b. Fruiting pedicel fleshy; condyle perforate laterally.
- 30a. Sepals of male flowers free without conspicuous claw; peduncle apically bracteate 35. *S. excentrica*
- 30b. Sepals of male flowers connate, inner whorl with conspicuous claw 36. *S. ebracteata*

- 27b. Petals in male flowers without glands inside.
- 31a. Fruiting pedicel fleshy.
- 32a. Branches and leaves containing red juice; sepals and petals purple; endocarp with columnar ornamentation short, apically slightly curved and hooklike; leaf blade less than 10 cm 32. *S. succifera*
- 32b. Branches and leaves containing light yellow or white juice; sepals green; petals orange; endocarp with columnar ornamentation conspicuously curved and hooklike; leaf blade 10–16 cm 33. *S. hainanensis*
- 31b. Fruiting pedicel not fleshy.
- 33a. Petals of male flowers with margin conspicuously thickened; sepals abaxially hispidulous or pubescent 27. *S. dolichopoda*
- 33b. Petals of male flowers with margin not thickened; sepals abaxially not glabrous.
- 34a. Branches and leaves without red juice; sepals green; petals yellow or orange.
- 35a. Endocarp bearing columnar ornamentation, each row of 18–20; leaves more than 10 cm 28. *S. mshanica*
- 35b. Endocarp bearing columnar ornamentation, each row of 20–25; leaves usually less than 10 cm 29. *S. micrantha*
- 34b. Branches and leaves with red juice; sepals and petals purple.
- 36a. Umbellet pedicels transparent when dry; sepals of male flowers with margin membranous; petiole rarely less than 2 × as long as leaf blade 30. *S. longipes*
- 36b. Umbellet pedicels not transparent when dry; sepals of male flowers with margin not membranous; petiole subequal to or slightly longer than leaf blade 31. *S. dielsiana*

1. *Stephania herbacea* Gagnepain, Bull. Soc. Bot. France 55: 40. 1908.

草质千金藤 *cao zhi qian jin teng*

Herbaceous vines; neck of rootstock slender, prostrate, node growing fiberlike roots. Branchlets thin, glabrous. Petiole longer than leaf blade; leaf blade peltate, broadly ovate-triangular, 4–6 × 4.5–8 cm, submembranous, whitish green abaxially, glabrous on both surfaces, base subtruncate, margin entire or lobed, apex obtuse, sometimes finely mucronate, palmately 7- or 8-veined, slender, slightly prominent abaxially, fine reticulation slightly conspicuous, marginal vein well defined. Inflorescences simple umbelliform cymes, axillary; peduncle filamentous, 2–4 cm; cymelets 7 or 8, often reduced to single flowers. Male flowers: sepals 6 in 2 whorls, membranous, obovate, 1.8–2 × ca. 1.3 mm, base attenuate or sharply narrow, 1-nerved; petals 3, rhombic-rounded, 0.7–1 × ca. 1 mm; synandrium shorter than petals. Female flowers: sepals and petals (2 or)3, subequal to sepals of male flowers, petals shorter and thicker; stigma 3-lobed. Drupes red, rotund, 7–8 mm; condyle not perforate. Fl. summer.

• Roadside shrublands on slopes. Guizhou, W Hubei, Hunan, SE and SW Sichuan.

2. *Stephania elegans* J. D. Hooker & Thomson, Fl. Ind. 1: 195. 1855.

雅丽千近藤 *ya li qian jin teng*

Herbaceous vines. Branches slender, striate, glabrous or subglabrous. Petiole 2–4 cm; leaf blade conspicuously peltate, narrowly triangular or ovate-triangular (sometimes subtriangular), 5–10 × 2.5–5.5 cm, papery, usually brown when dry, adaxially glossy, both surfaces glabrous, base subtruncate to slightly concave, sometimes cordate, apex slightly acuminate, sometimes obtuse, minutely mucronate, upward and downward

each palmately 4- or 5-veined, raised abaxially, reticulation slightly conspicuous. Inflorescences simple (or compound) umbelliform cymes; peduncles slender and straight; flowers with pedicels, light green or purple. Male flowers: sepals 6, dark purple, obovate, ca. 1.6 × 1 mm, glabrous. Female flowers: perianth as in male flowers. Drupes red, broadly obovate-globose, ca. 7 mm, base subtruncate; endocarp 5–6 mm; condyle not perforate. Fr. Nov.

Yunnan (Tengchong, Zhenyuan) [NE India, Nepal].

3. *Stephania gracilentia* Miers, Ann. Mag. Nat. Hist., ser. 3, 18: 15. 1866.

纤细千斤藤 *xian xi qian jin teng*

Herbaceous vines, glabrous. Branches slender, brown when dry, longitudinally striate. Petiole 3–10 cm; leaf blade conspicuously peltate, triangular-rotund, 3–7 cm, width subequal to length or slightly wider, thinly papery or submembranous, pale on both surfaces, especially abaxially, base subtruncate, apex often finely mucronate, palmately 8- or 9-veined, fine reticulation slightly conspicuous. Inflorescences simple umbelliform cymes, axillary or on short axillary branches with reduced leaves; peduncle rather slender, 1–4 cm; cymelets 5 or 6; flowers purple; pedicel filamentous, 0.5–1 mm. Male flowers: sepals 6, obovate-oblong to broadly elliptic, 1.5–2 mm; petals 3 or 4, slightly fleshy, broadly cuneate to obcordate or rotund, 0.8–1 mm; synandrium ca. 1 mm. Female flowers: perianth as in male flowers. Drupes obovate, slightly flattened; condyle perforate. Fl. Jun.

Forests on mountain slopes; 1700–2400 m. S Xizang (Nyalam) [Nepal].

4. *Stephania subpeltata* H. S. Lo, Acta Phytotax. Sin. 16(1): 22. 1978.

西南千金藤 *xi nan qian jin teng*

Herbaceous and climbing vines, glabrous. Stems slender, with roots on lower part, rarely branched; branches green, longitudinally striate. Petiole slender and straight, shorter than leaf blade; leaf blade subpeltate, insertion 0.1–0.2 cm from margin, ovate-triangular or broadly triangular to subtriangular, 3.5–10 × 2.5–5.5 cm, thinly leathery, often dark green when dry, base slightly concave, rarely conspicuously cordate or slightly concave, apex often conspicuously contracted, caudate-acuminate, or acutely acuminate, slightly obtuse, palmately 5-veined, fine reticulation slightly raised on both surfaces. Male and female inflorescences similar, simple umbelliform cymes, sparse and few flowered; peduncle filamentous, 1.5–6.5 cm; cymelets 3–5, fascicled; bracteole narrowly lanceolate; flowers purple. Male flowers: sepals 6, outer whorl ovate, inner whorl sub lanceolate, 1.2–1.4 mm, apex caudate; petals 3, broadly cuneate, ca. 0.5 mm. Female flowers: sepals 3, broadly ovate, ca. 1.5 mm, caudate; petals 3, oblate to broadly cuneate, ca. 0.6 mm; stigma 3-lobed. Drupes red, obovate-globose; endocarp 4.5–5 × ca. 3 mm; condyle not perforate. Fl. Nov.

• Shrublands. Guangxi (Longlin), Sichuan (Miyi), Yunnan (Chenggao, Weixi, Wenshan, Yangbi).

5. *Stephania sutchuenensis* H. S. Lo, Acta Phytotax. Sin. 16(1): 25. 1978.

四川千斤藤 *si chuan qian jin teng*

Herbaceous vines, glabrous. Branches slender, slightly hard, straightly striate. Petiole 4–7 cm; leaf blade peltate, insertion ca. 1 cm from margin, triangular, usually 6–10 × 5.5–9.5 cm, thinly leathery, base subtruncate, apex sometimes obtuse, palmately 7- or 8-veined, conspicuously raised abaxially, reticulation slightly conspicuous. Inflorescences simple umbelliform cymes, axillary, slightly fleshy; peduncle of male inflorescences slender and straight, as long as petiole, apex ebracteolate; cymelets 4–8, fascicled, 3–7-flowered. Male flowers: sepals 6 in 2 whorls, ovate-rounded or ovate, 1.7–2 mm, cuneate base 0.6–0.9 mm, apex caudate-acuminate; petals 3, slightly fleshy, conchiform, 0.6–0.7 × 1–1.2 mm. Female flowers: sepals and petals 3, size and shape as in male flowers; pistillate style subequal to petal. Inflorescences axillary, similar to male inflorescences in structure; fruiting peduncle 8–9 cm. Endocarp red, obovate, ca. 7 × 3 mm; condyle perforate. Fl. summer.

• Forests. Sichuan (Emei Shan and vicinity).

6. *Stephania chingtungensis* H. S. Lo, Acta Phytotax. Sin. 16(1): 25. 1978.

景东千斤藤 *jing dong qian jin teng*

Herbaceous vines, glabrous. Stems slender, longitudinally striate, 1.5–2 mm in diam. Petiole longer than leaf blade; leaf blade conspicuously peltate, broadly triangular to oblate-triangular, 5–11 × 6–10 cm, papery or thinly papery, abaxially olive green, adaxially dark green when dry, base subtruncate, sometimes slightly rounded or concave, margin conspicuously repand dentate, apex obtuse or acuminate, palmately 10- or 11-veined, reticulation conspicuous. Inflorescences simple umbelliform cymes, axillary, usually on leafless short branches,

slender and slightly fleshy; peduncle 1.5–2.5 cm; cymelets 3 or 4; pedicel slender, 1–2 mm. Male flowers: sepals 6 in 2 whorls, inner and outer whorls ± similar, elliptic, ca. 2 mm, apex caudate; petals 3, slightly fleshy, to 1 mm; synandrium ca. 1 mm. Female flowers unknown. Inflorescences axillary, slightly twining, on leafless or microphylline short branches; fruiting peduncle slender, 3–5 cm; fruiting pedicels ca. 4 mm. Endocarp obovate, ca. 7 × 5 mm; condyle perforate.

• S Yunnan.

7. *Stephania merrillii* Diels in Engler, Pflanzenr. 46(IV.94): 268. 1910.

台湾千近藤 *tai wan qian jin teng*

Stephania sasakii Hayata ex Yamamoto.

Woody vines, 3–5 m or longer. Root thick, rough and contracted, 1–2 cm in diam. Old branches brown, longitudinally 10-grooved, ca. 1 cm in diam.; young branches green, ca. 4 mm in diam. Petiole 7–9 cm or longer, compressed laterally, striate; leaf blade peltate, insertion ca. 2 cm from margin, broadly ovate, 9–10(–16) × 8.5–9(–15) cm, thinly leathery or thickly papery, base usually rounded, margin slightly involute, apex mucronate, palmately ca. 12-veined, veins thicker, very prominent abaxially, fine reticulation very conspicuous. Inflorescences compound umbelliform cymes, axillary or on old leafless stems; peduncle 6–12 cm; umbellet pedicels ca. 8; bracts small, linear. Male flowers: sepals 6(or 8) in 2 whorls, membranous, outer 3 usually lanceolate or suboblong, 1.2–1.5 mm, ciliate, mucronate, inner whorl obovate, rarely spatulate, concave, ca. 2 mm, base clawed, margin dentate, apex rounded; petals 3(or 4), light yellow or white, broadly ovate or rotund, deeply concave, with tuberculate processes inside; synandrium with 6 anthers. Female flowers unknown. Drupes red, broadly obovate to rotund, ca. 12 × 10 × 4 mm, compressed laterally; endocarp 10–12 mm, abaxially with 4 rows of columnar processes with ends swollen. Fl. spring and summer.

• Taiwan (Lan Yu).

8. *Stephania delavayi* Diels in Engler, Pflanzenr. 46(IV.94): 275. 1910.

一文钱 *yi wen qian*

Stephania graciliflora Yamamoto.

Slender herbaceous vines, 1–2 m. Stems and branches slender, striate, glabrous. Petiole usually equal to leaf blade in length; leaf blade conspicuously peltate, triangular-rotund, 3–5(–7) cm, width equal to length or slightly longer, thinly papery, abaxially pinkish green, both surfaces glabrous, base subtruncate, apex obtuse, with a finely mucronate acumen, palmately 9- or 10-veined, slender, together with dense fine reticulation slightly raised abaxially, brown when dry. Inflorescences axillary or on short axillary branches with reduced leaves, compound umbelliform cymes; peduncle 1–3.5 cm or longer; umbellet rays 3–7, 0.3–1.2 cm, slender; pedicel slender, less than 0.5 mm. Male flowers: sepals 6(or 8) in 2 whorls, thin, obovate-cuneate or broadly obovate-cuneate, rarely obovoid-rounded, 1–1.2 × 0.5–0.8(–1) mm; petals 3 or 4, slightly fleshy, sub-

obdeltoid or broadly cuneate, ca. 0.5 mm; synandrium ca. 0.7 mm. Female flowers: sepals and petals 3(or 4), size and shape as in male flowers; carpel glabrous, stigma often 3-lobed, lobes long and pointed. Drupes red, glabrous; endocarp obovate, 4–5 mm, abaxially ornamented with 2 rows of transverse ridges.

• Shrublands, along fences, roadsides. S Guizhou, S Sichuan, Yunnan.

9. *Stephania japonica* (Thunberg) Miers, Ann. Mag. Nat. Hist., ser. 3, 18: 14. 1866.

千斤藤 qian jin teng

Vines, glabrous or pubescent. Root woody, not tuberous, brownish yellow. Stems slender, slightly woody when old, sometimes prostrate and rooting at nodes. Petiole 3–12 cm; leaf blade conspicuously peltate, usually triangular-rotund or broadly triangular-ovate to rotund, 5–12(–15) cm, as wide as or slightly wider than long, papery to thinly leathery, abaxially glabrous or hirsute, often glaucous, adaxially glossy, base usually broadly rounded, apex with a finely mucronate acumen, palmately 8–11-veined, raised abaxially, reticulation slightly raised, conspicuous. Inflorescences compound umbelliform cymes, usually axillary, rarely 2 or few on short axillary branches; peduncle to 6 cm; rays often very short, umbellet very condensed, headlike; axes glabrous or pubescent; pedicels almost absent. Male flowers: sepals 6 or 8 in 2 whorls, membranous, yellowish green, oblanceolate or obovate-elliptic to spatulate or narrowly elliptic, 1–1.5 mm, glabrous or pubescent; petals 3 or 4, slightly fleshy, yellow, broadly obovate to rotund, 0.5–1 mm, glabrous, rarely apex slightly concave; synandrium 0.5–1 mm, exerted or not, anthers 6. Female flowers: sepals 3 or 4, shape and size as in male or smaller; petals 3 or 4, shape and size as in male or slightly smaller; carpel ovoid, stigma lacerate. Infructescences with hard and slightly curved umbellet pedicels. Drupes red, obovate to subglobose, 6–8 mm; endocarp 5–6 mm, abaxially ornamented with 10 or slightly more rows of transvers ridges; condyle perforate or not. Fl. spring and summer, fr. autumn and winter.

Village margins, shrublands, open forests, forest margins, limestone mountains. Anhui, Chongqing, Fujian, Guangxi, S Guizhou, Hainan, S Henan, Hubei, Hunan, Jiangsu, Jiangxi, E and SW Sichuan, NE and S Yunnan, Zhejiang [Bangladesh, India, Indonesia (Java), Japan, Korea, Laos, Malaysia, Myanmar, Nepal, Sri Lanka, Thailand, ?Vietnam; Australia, Pacific islands].

- 1a. Inflorescences glabrous; condyle usually not perforate 9a. var. *japonica*
- 1b. Inflorescences pubescent; condyle perforate.
 - 2a. Leaf blade abaxially hirsute 9b. var. *discolor*
 - 2b. Leaf blade abaxially glabrous 9c. var. *timoriensis*

9a. *Stephania japonica* var. *japonica*

千斤藤(原变种) qian jin teng (yuan bian zhong)

Menispermum japonicum Thunberg in Murray, Syst. Veg., ed. 14, 892. 1784.

Stems glabrous or sparsely pubescent. Petiole 3–12 cm; leaf blade abaxially glabrous except sometimes near petiole.

Peduncle almost absent; inflorescence axes glabrous. Male flowers: sepals obovate-elliptic to spatulate, glabrous. Drupes obovate to suborbiculate, ca. 8 mm; condyle usually not perforate.

Village margins, shrublands in open fields. Anhui, Fujian, Hainan, S Henan (Jigong Shan), Hubei, Hunan, Jiangsu, Jiangxi, Zhejiang [India, Japan, Korea, Malaysia, Sri Lanka, Thailand; Australia, Pacific islands].

9b. *Stephania japonica* var. *discolor* (Blume) Forman, Kew Bull. 11: 56. 1956.

桐叶千斤藤 tong ye qian jin teng

Clypea discolor Blume, Bijdr. 26. 1825; *Cissampelos hernandiifolia* Willdenow; *Stephania hernandiifolia* (Willdenow) Walpers; *S. hernandiifolia* var. *discolor* (Blume) Miquel.

Stems pubescent. Petiole 3–7 cm or slightly longer; leaf blade abaxially hirsute. Peduncle 1.5–5.5 cm; inflorescence axes pubescent. Male flowers: sepals oblanceolate to spatulate, sometimes narrowly elliptic, pubescent. Drupes obovoid-subglobose; condyle perforate. Fl. summer, fr. autumn.

Open forests or shrublands, limestone mountains. Guangxi, S Guizhou, E and SW Sichuan, NE and S Yunnan [India, ?Laos, Malaysia, Myanmar, Nepal, Thailand, ?Vietnam; E Australia].

9c. *Stephania japonica* var. *timoriensis* (Candolle) Forman, Kew Bull. 11: 49. 1956.

光叶千金藤 guang ye qian jin teng

Cocculus japonicus Candolle var. *timoriensis* Candolle, Prodr. 1: 96. 1824; *C. forsteri* Candolle; *Stephania forsteri* (Candolle) A. Gray.

Stems glabrous. Petiole usually shorter than or subequal to leaf blade; leaf blade abaxially glabrous except sometimes near petiole. Peduncle 1.5–6 cm; inflorescence axes pubescent. Male flowers: sepals spatulate-oblong to narrowly elliptic, glabrous. Drupes obovoid, 6–7 mm; condyle perforate. Fl. spring, fr. autumn and winter.

Forest margins. N Guangxi (Longlin), S Yunnan (Xishuangbanna) [Bangladesh, Indonesia (Java); Australia, Pacific islands].

10. *Stephania longa* Loureiro, Fl. Cochinch. 2: 608. 1790.

萋箕笃 fen ji du

Stephania hispidula (Yamamoto) Yamamoto; *S. japonica* (Thunberg) Miers var. *hispidula* Yamamoto.

Herbaceous vines, 1–4 m or longer, glabrous except for inflorescence. Branches slender, striate. Petiole 1–4.5 cm, often twining at base; leaf blade conspicuously peltate, triangular-ovate, 3–9 × 2–6 cm, papery, adaxially dark brown, abaxially light green, sometimes pinkish green, base subtruncate or slightly rounded, rarely slightly concave, apex obtuse, with a finely mucronate acumen, palmately 10- or 11-veined. Inflorescences compound umbelliform cymes, axillary; peduncle 1–4 cm; male inflorescences more slender, hispidulous; umbellet very condensed, headlike; pedicels ± concealed by flowers. Male flowers: sepals (6 or)8 in 2 whorls, cuneate or obovate, ca.

1 mm, abaxially with short papillary hairs; petals 4, sometimes 3, greenish yellow, usually rotund, ca. 0.4 mm; synandrium ca. 0.6 mm. Female flowers: sepals and petals (3 or)4, ca. 0.6 mm; ovary glabrous, stigma lobes divaricate. Drupes red, 5–6 mm; endocarp abaxially ornamented with rows of 10 or slightly more. Fl. late spring–early summer, fr. autumn.

Shrublands, forest margins. Fujian, Guangdong, Guangxi, Hainan, Taiwan, SE Yunnan [Laos].

11. *Stephania tetrandra* S. Moore, J. Bot. 13: 225. 1875.

粉防己 *fen fang ji*

Herbaceous vines, 1–3 m high. Main root fleshy, cylindrical. Branchlets longitudinally striate. Petiole 3–7 cm; leaf blade narrowly peltate, broadly triangular, sometimes triangular-rotund, 4–7 × 5–8.5 cm, papery, both surfaces pubescent or only abaxially, base slightly emarginate or truncate, apex with a mucronate acumen, palmately 9- or 10-veined, more slender, reticulation very dense, conspicuous. Inflorescences capitate; bracts small or very small. Male flowers: sepals 4 or sometimes 5, usually obovate-elliptic, including claw ca. 0.8 mm; petals 5, fleshy, ca. 0.6 mm, margin involute; synandrium ca. 0.8 mm, anthers 4. Female flowers: sepals and petals as in male flowers. Drupes red, subglobose when mature; endocarp ca. 5.5 mm in diam., abaxially bearing 4 rows of ornamentation, 2 inner rows columnar and very prominent; condyle usually not perforate. Fl. summer, fr. autumn.

• Shrublands at village margins, open fields, roadsides. Anhui, Fujian, Guangdong, Guangxi, Hainan, Hubei, Hunan, Jiangxi, Taiwan, Zhejiang.

12. *Stephania epigaea* H. S. Lo, Acta Phytotax. Sin. 16(1): 34. 1978.

地不容 *di bu rong*

Herbaceous deciduous vines, glabrous. Root tuberous, huge, usually oblate, dark and grayish brown. Young branches slightly fleshy, often purplish red, glaucous, striate when dry. Petiole usually 4–6(–11) cm; leaf blade peltate, insertion 1–2 cm from margin, oblate, rarely rotund, 3–5(–7) × 5–6.5(–9) cm, membranous when dry, abaxially slightly glaucous, base usually rounded, apex rounded or occasionally cuspidate, palmately 8- or 9-veined, slender. Inflorescences simple umbelliform cymes, axillary, slightly fleshy, often purplish red and glaucous; peduncle of male inflorescences (0.5–)1–4 cm; cymelets few to 10, fascicled, 2- or 3(–7)-flowered. Male flowers: sepals 6, often purple, ovate or elliptic-ovate, 1.3–1.6 mm; petals 3 or occasionally 5 or 6, slightly fleshy, purple or orange with purple dots, broadly cuneate or subdeltoid, 0.4–0.7 mm; synandrium 0.4–0.5 mm. Female inflorescences similar to male inflorescences but denser; peduncle 1–3 cm. Female flowers unknown. Fruiting pedicels short and fleshy. Drupes red; endocarp obovate, 6–7 × ca. 5 mm. Fl. spring, fr. summer.

• Shrublands, along fences, roadsides. S Guizhou, S Sichuan, Yunnan.

Stephania epigaea is regarded as over-harvested for medicinal usage (Annex 2 of Identification and Conservation of Important Plant Areas for Medicinal Plants in the Himalaya, Plantlife).

13. *Stephania brevipedunculata* C. Y. Wu & D. D. Tao in C. Y. Wu, Fl. Xizang. 2: 159. 1985.

短梗地不容 *duan geng di bu rong*

Vines. Root tuberous. Stems striate. Petiole ca. 4 cm; leaf blade deltoid, length subequal to width, ca. 4.5 cm long and wide, abaxially grayish green, adaxially green, abaxially sparsely whitish puberulent. Inflorescences simple umbelliform cymes; peduncle short, 0.5–1.5 cm, very few flowered; bracts 2 or 3, 1.8–2.2 mm. Male flowers: sepals 3, purple, rounded, less than 0.5 mm in diam.; petals 3, spatulate, alternate to sepals, very shortly sessile. Female flowers unknown. Fruit unknown. Fl. early summer.

• Slopes; 2000–2400 m. S Xizang (Gyirong, Nyalam).

14. *Stephania sinica* Diels in Engler, Pflanzenr. 46(IV:94): 272. 1910.

汝兰 *ru lan*

Deciduous vines slightly fleshy, glabrous. Branches thick, longitudinally striate, often hollow. Petiole to 30 cm, twining when dry, apex swollen; leaf blade conspicuously peltate, triangular to triangular-rotund, 10–15 cm or longer, membranous when dry or ± papery, base subtruncate to slightly rounded, rarely slightly emarginate, margin sinuate to entire, palmately 9- or 10-veined, slightly wide and flat, slightly raised abaxially, reticulation conspicuous abaxially. Inflorescences compound umbelliform cymes, axillary; peduncle and umbellet pedicels fleshy, without bract and bracteole. Male flowers: sepals 6, slightly fleshy, transparent when dry, subobovate-oblong, 1–1.3 mm, inner whorl slightly wider; petals 3, sometimes 4, shortly and broadly obovate, ca. 0.8 mm inside, with 2 large glands; synandrium 0.7–0.8 mm. Female inflorescences also composed of compound umbelliform cymes with umbellet pedicels shorter and thicker. Female flowers: sepal 1; petals 2, glands inside sometimes not conspicuous. Infructescences with peduncles 5 cm or longer; umbellet pedicels 1–1.5 cm; fruiting pedicel fleshy, black when dry. Drupes with endocarp 6–7 mm. Fl. Jun, fr. Aug–Sep.

• Margins of forest clearings. N Guizhou, SW and W Hubei, Hunan, C, E, and S Sichuan, NE Yunnan.

15. *Stephania intermedia* H. S. Lo in C. Y. Wu & H. W. Li, Fl. Yunnan. 3: 247. 1983.

河谷地不容 *he gu di bu rong*

Deciduous vines herbaceous or slightly woody at base, glabrous. Branches and branchlets terete, grayish brown when dry, longitudinally striate. Petiole longer than or subequal to leaf blade, slightly thick; leaf blade peltate, insertion 2–3 cm from margin, usually inconspicuously triangular-rotund, 8–15 cm, width subequal to length, papery, both surfaces dull, base subtruncate or slightly emarginate, apex obtuse or slightly rounded, often with a finely mucronate acumen, palmately 9–12-veined, veins thick, together with fine reticulation raised abaxially, becoming brown when dry, slightly glossy. Inflorescences compound umbelliform cymes, axillary; male peduncle 3–5 cm; umbellet rays 5 or 6, ca. 2 cm; cymelets 4–6

fascicled at end of umbellet pedicel; bracts and bracteoles linear or linear-subulate. Male flowers: sepals 6 in 2 whorls, outer whorl elliptic-obovate, 2–2.3 mm, apex obtuse or mucronate, inner whorl slightly smaller, base abruptly narrowed, apex rounded; petals 3, orangish yellow, very broad, 0.8–1 × 1.5–1.8 mm, margin involute, imbricate; synandrium 0.6–0.7 mm. Female inflorescences and flowers unknown. Infructescences compound umbelliform with peduncle thick, 5–7 cm; umbellet pedicels 7–9, 1–2 cm, prostrately extended; fruiting pedicel not fleshy. Drupes obovate, ca. 6 mm. Fl. May–Jul, fr. Jul–Aug.

- Stony slopes in hot valleys. Yunnan (Gejiu).

16. *Stephania glabra* (Roxburgh) Miers, Ann. Mag. Nat. Hist., ser. 3, 18: 14. 1866.

西藏地不容 xi zang di bu rong

Cissampelos glabra Roxburgh, Fl. Ind., ed. 1832, 3: 840. 1832.

Herbaceous vines. Stems striate, glabrous, hollow. Petiole relatively slender, 5–15 cm or longer, geniculate and thickened at base; leaf blade narrowly peltate, broadly ovate or rotund, 4–14 × 4–12 cm or slightly longer, papery or membranous, abaxially pale, both surfaces glabrous, base rounded, apical margin horned, palmately veined, 5 veins upward and raised abaxially. Male inflorescences axillary or on leafless old stems; peduncle 4–8 cm; umbellet rays usually 6, filamentous. Male flowers: sepals 6, outer 3 linear-oblong, 2–2.5 × ca. 0.5 mm, inner whorl obspatulate, 2–2.8 × 0.5–0.7 mm; petals 3, thicker, obspatulate, ca. 1.8 × 0.8 mm, with granular glands above middle part, apex often 3-lobed; synandrium 1.5–2 mm. Female flowers unknown. Infructescences with condensed umbellet pedicels ca. 1.5 cm; fruiting pedicels 0.6–0.8 mm. Drupes obovate, flattened; endocarp ornamented abaxially with rows of 20–25 transverse ridges; condyle perforate. Fl. Jun–Jul.

Shrublands. S Xizang (Gyirong, Nyalam) [Bangladesh, E, NW, and S India, Myanmar, Nepal, Thailand].

Stephania glabra is regarded as endangered in some parts of its range because of its overuse as a medicinal plant (Chhetri et al., Curr. Sci. 89: 267. 2005).

17. *Stephania dentifolia* H. S. Lo & M. Yang, Guihaia 8: 318. 1988.

齿叶地不容 chi ye di bu rong

Herbaceous vines, glabrous. Roots large and tuberous. Branches fleshy, containing red juice, longitudinally striate. Petiole 2–4 cm; leaf blade conspicuously peltate, obovate in outline, 2–4(–8) × 2.5–4.4(–9) cm, slightly fleshy, base truncate or slightly rounded, margin undulately toothed, apex obtuse or mucronate, palmately 8–10-veined, slightly raised abaxially. Male inflorescences compound umbelliform cymes, axillary, solitary or paired; peduncle slender, 0.8–2.5 cm; umbellet pedicels 4–6, 0.3–1 cm; bracts and bracteoles linear-cuneate, 2–2.5 mm, glabrous or very shortly hispid. Male flowers: sepals 6 in 2 whorls, outer whorl elliptic, ca. 1.7 × 0.9–1 mm, without claw, abaxially with very short hairs along midrib; petals 3, fleshy, ca. 0.8 × 1.4 mm, with tubercles inside; synandrium ca. 0.9 mm.

Female inflorescences condensed into capitula; peduncle slender, 1–1.5 cm; bracts filamentous, 1–3 mm. Female flowers: sepal 1, minute; petals 2, fleshy. Fruits unknown. Fl. Jun–Jul.

- SW Yunnan.

18. *Stephania cephalantha* Hayata, Icon. Pl. Formosan. 3: 12. 1913 [*“cepharantha”*].

金钱调乌龟 jin qian diao wu gui

Stephania disciflora Handel-Mazzetti; *S. tetrandra* S. Moore var. *glabra* Maximowicz.

Herbaceous vines, usually 1–2 m or longer, glabrous. Roots tuberous, sometimes irregular, brown, with many projecting lenticels. Branchlets slender, purplish red. Petiole slender, 1.5–7 cm; leaf blade triangular-oblate to rotund, 2–6 × 2.5–6.5 cm, membranous or papery, base rounded or subtruncate, margin entire or subrepand, apex with a finely mucronate acumen, palmately 7–9-veined. Male inflorescences often in axillary panicles, capitate, with discoid receptacle, peduncle filamentous, 1–2 cm; female inflorescences similar, solitary and axillary, peduncle thicker, 1–2 cm. Male flowers: sepals 4 or 6(or 8), spatulate or subcuneate, 1–1.5 mm; petals 3 or 4(–6), rotund or broadly obovate, ca. 0.5 mm; synandrium shorter than sepals. Female flowers: sepals 1 or 2, occasionally 3(–5), ca. 0.8 mm or longer; petals 2(–4), fleshy, smaller than sepal. Drupes red, broadly rotund, ca. 6.5 mm. Fl. Apr–May, fr. Jun–Jul.

- Village margins, open fields, forest margins. Anhui, Fujian, Guangdong, Guangxi, E and S Guizhou, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, ?Shanxi, E and S Sichuan, Taiwan, Zhejiang.

19. *Stephania viridiflavens* H. S. Lo & M. Yang, Bull. Bot. Res., Harbin 2(1): 42. 1982.

黄叶地不容 huang ye di bu rong

Deciduous and herbaceous vines. Stems slightly woody at base. Petiole subequal to or longer than leaf blade, often twining at base; leaf blade triangular-rounded to rotund, length and width usually 8–15(–20) cm, less than 8 cm when on lateral branches, papery, grayish yellow when dry, both surfaces glabrous, base subtruncate, rounded, or slightly emarginate, margin entire or irregularly repand, seldom horny on one side or both sides, apex mucronate or slightly obtuse, palmately 11–14-veined, slightly raised abaxially and bright yellow when dry. Inflorescences compound umbelliform cymes, axillary or on short axillary branches with reduced or no leaves; male peduncle usually longer than petioles, apex with few to 10 linear or sometimes foliaceous bracts; umbellet pedicels 5–12, 1.5–5 cm; cymelets many fascicled on end of umbellet pedicel, slightly condensed. Male flowers: sepals 6 in 2 whorls, greenish yellow, outer whorl elliptic or rhombic-elliptic, rarely obovate-cuneate, 2–2.2 × 1.4–1.6 mm, apical margin often involute, inner whorl similar, sometimes broadly obovate, to 2 mm wide; petals 3, thick, fleshy, orangish yellow, 1.1–1.2 × ca. 1.5 mm, margin with both sides involute, abaxially concave, with many verruculose or lobed processes, apex slightly emarginate; synandrium 0.5–0.7 mm. Female inflorescences condensed to

capitula; peduncles usually much shorter than petioles, slightly stout; umbellet pedicel, cymelet pedicels, and pedicels very short. Female flowers: sepal 1, minute; petals 2, slightly larger. Drupes red, broadly obovate; endocarp 5–6 mm.

- Limestone hills. C and SW Guangxi, S Guizhou, SE Yunnan.

The huge, irregularly globose rootstock of *Stephania viridiflavens* contains abundant rotundine, which is used medicinally in Guangxi and Yunnan.

20. *Stephania brachyandra* Diels in Engler, Pflanzendr. 46 (IV.94): 275. 1910.

白线薯 bai xian shu

Deciduous and herbaceous vines. Stems slightly twining, light gray or slightly brown when dry, longitudinally striate, glabrous. Petiole longer than or subequal to leaf blade; leaf blade peltate, insertion 1.5–3 cm from base, triangular or subrounded, 8–18 cm, width subequal to length, thinly papery, both surfaces glabrous or abaxially slightly puberulent along veins, base subtruncate to subrounded, margin undulate to subentire, apex obtuse or sometimes mucronate, palmately 10-veined, raised abaxially, reticulation slender and visible. Inflorescences compound umbelliform cymes, axillary or on short axillary branches with reduced leaves. Male inflorescences slightly slender; peduncle 3–7 cm; umbellet pedicels 5–7, 1.5–3 cm; cymelets slightly dense. Male flowers: pedicel ca. 0.5 mm; sepals 6, outer whorl 1–1.3 mm, inner whorl obovate or broadly obovate, 1.7–2.2 mm, relatively broader; petals 3(or 4), fleshy, very broad, 0.8–1 × 1.5–1.9 mm, margin involute, imbricate; synandrium 0.5–0.7 mm. Female inflorescences condensed to capitula; umbellet pedicel and cymelet pedicel absent when blooming. Female flowers: sepal usually 1, ovate-lanceolate, ca. 1 mm; petals 2, rotund, ca. 0.6 mm. Fruiting pedicel not fleshy. Drupes red, broadly obovate; endocarp 9–10 × ca. 8 mm. Fl. May–Jun, fr. Jun–Aug.

Ravine sides in forests; ca. 1000 m. SE Yunnan [Myanmar].

The tuberous rootstock of *Stephania brachyandra* contains the alkaloid isocorydine.

21. *Stephania yunnanensis* H. S. Lo, Bull. Bot. Res., Harbin 2(1): 45. 1982.

云南地不容 yun nan di bu rong

Herbaceous and deciduous vines, 4–5 m, glabrous. Stems and leaves containing red juice. Petiole subequal to or slightly longer than leaf blade; leaf blade soft, triangular-rounded to triangular-oblanceolate, 5–11 cm, length subequal to or slightly longer than width, thinly papery, both surfaces glabrous, base subtruncate or slightly emarginate, apex mucronate or obtuse, entire or undulate, palmately (9 or) 10-veined, raised abaxially, together with reticulation brown when dry. Inflorescences compound umbelliform cymes. Male inflorescences axillary or 2 or 3 borne on short axillary branches, slightly fleshy and slender; peduncle 2–6 cm, or longer; umbellet pedicels 4–8, up to 2.5 cm; bracts lanceolate-linear, 1.5–2.5 mm, occasionally 1–3 foliaceous, up to 1.5 cm. Male flowers: sepals 6 in 2 whorls, with purplish stripes, outer whorl smaller, obovate to oblanceolate,

1.2–1.6 mm, apex mucronate, inner whorl rhombic-cuneate, 2–2.2 × ca. 1.8 mm, base abruptly clawed below middle; petals 3, conchiform, ca. 1 × 1.8–2 mm. Female flowers and inflorescences unknown. Infructescences compound umbelliform; peduncle slightly slender, 5–7 cm; umbellet pedicels 7–11, 1–2.5 cm; fruiting pedicel not fleshy, ca. 5 mm. Drupes red; endocarp obovate-rounded, 6–7 mm.

- Limestone hills, shrublands at ditch sides. Yunnan.

Stephania yunnanensis is regarded as over-harvested for medicinal usage (Annex 2 of Identification and Conservation of Important Plant Areas for Medicinal Plants in the Himalaya, Plantlife).

- 1a. Sepals abaxially glabrous 21a. var. *yunnanensis*
- 1b. Sepals abaxially hispidulous 21b. var. *trichocalyx*

21a. *Stephania yunnanensis* var. *yunnanensis*

云南地不容(原变种) yun nan di bu rong (yuan bian zhong)

Sepals abaxially glabrous.

- Limestone hills. Yunnan (Gejiu).

The tuberous roots contain the alkaloids rotundine and sinomenine, which have a calming, muscle-relaxing effect.

21b. *Stephania yunnanensis* var. *trichocalyx* H. S. Lo & M. Yang, Guihaia 8: 313. 1988.

毛萼地不容 mao e di bu rong

Pedicels puberulent. Sepals abaxially hispidulous; petals with tubercles inside. Fl. Jun.

- Shrublands at ditch sides. Yunnan (Nanjiang).

22. *Stephania lincangensis* H. S. Lo & M. Yang, Guihaia 8: 311. 1988.

临仓地不容 lin cang di bu rong

Herbaceous vines, glabrous except inflorescences. Roots tuberous, huge. Stems becoming black when dry. Petiole slightly longer than leaf blade; leaf blade oblate or subtriangular in outline, 5–7 × 5–7.5 cm, papery, abaxially dark gray, adaxially black, base subtruncate or slightly emarginate, occasionally cordate, margin usually dentate, apex usually mucronate, palmately 9–11-veined, conspicuous abaxially. Male inflorescences compound umbelliform cymes, axillary, seldom few on short axillary branches; peduncle slender, 2–6 cm; umbellet pedicel usually 3–5, slender, 0.8–1.5 cm, sometimes sparsely hispidulous; bracts and bracteoles linear, 1.5–2 mm, usually hispidulous. Male flowers: sepals 6, subelliptic, ca. 1.2 × 1 mm, margin involute when blooming; petals 3, ca. 0.7 × 1 mm, with 2 glands at base inside; synandrium shorter than petals. Female flowers and fruits unknown. Fl. Jun.

- Shrublands on sunny slopes. Yunnan (Lincang).

23. *Stephania kuinanensis* H. S. Lo & M. Yang, Bull. Bot. Res., Harbin 2(1): 46. 1982.

桂南地不容 gui nan di bu rong

Herbaceous vines, up to 3 m, glabrous. Stems and branches longitudinally striate. Petiole usually shorter than leaf blade,

rarely slightly longer; leaf blade triangular-rotund, length and width 7–9(–10 or more) cm, papery, base subtruncate to slightly rounded, margin entire or occasionally sparsely dentate, apex mucronate, palmately 9- or 10-veined, fine reticulation very clear. Male inflorescences compound umbelliform cymes, axillary, solitary or few on short axillary branches with reduced leaves, slightly fleshy; peduncle slender, 1–4 cm; umbellet pedicels 6 or 7, ca. 1 cm; bracts linear. Male flowers (not fully mature): sepals light green, outer whorl 3, oblanceolate, ca. 1.5 × 0.6 mm, inner whorl obovate, ca. 1.5 × 0.9 mm; petals 3, fleshy, orangish yellow, broadly cuneate, ca. 0.8 mm wide, inside with 2 glands at base; synandrium ca. 1 mm, anthers 6 or 7. Young female inflorescences capitate. Female flowers unknown. Infructescences axillary; peduncle straight, 4–6.5 cm; umbellet pedicels 1 cm or shorter; fruiting pedicel straight, 2–3 mm, not fleshy. Drupes red, obovate; endocarp ca. 6.5 × 5.5 mm, with columnar tubercles apically obtuse.

- Wastelands. Guangxi (Longzhou).

The tuberous rootstock of *Stephania kuinanensis* is relatively small, less than 10 cm in diam., and contains the alkaloids L-dicentrine and rotundine.

24. *Stephania dicentrifera* H. S. Lo & M. Yang, Bull. Bot. Res., Harbin 2(1): 48. 1982.

荷包地不容 he bao di bu rong

Herbaceous and deciduous vines, ca. 3 m or longer. Stems and branches purplish brown when dry, longitudinally striate. Petiole subequal to or sometimes much longer than leaf blade; leaf blade triangular-rotund, length and width 8–15 cm, softly papery, black or grayish brown when dry, both surfaces glabrous, base subtruncate or rounded, margin entire to sparsely dentate, apex mucronate, sometimes obtuse with a finely mucronate acumen, palmately 10- or 11-veined, together with reticulation conspicuous on both surfaces, relatively more conspicuous abaxially. Inflorescences compound umbelliform cymes, usually axillary or sometimes on short axillary branches. Male peduncle 2.5–5 cm; umbellet pedicels 5–10, ca. 1(–2) cm; bracts linear-lanceolate. Male flowers: sepals 6 in 2 whorls, light yellow, outer whorl 3, oblanceolate to obovate, ca. 1.5 mm, inner whorl rhomboidal, 1.5–1.7 × 1.2–1.5 mm, base abruptly clawed below middle; petals 3, greenish yellow, broadly cuneate, ca. 0.7 × 0.8–1 mm, inside with 2 glands; synandrium ca. 0.7 mm, anthers usually 6. Female inflorescences with peduncle 3–7 cm; umbellet pedicels up to more than 10, 3–4 mm, fleshy, black when dry. Female flowers: sepal 1, minute; petals 2, broadly ovate-rounded, ca. 0.6 mm; carpel glabrous. Drupes with pedicel fleshy, red; endocarp broadly obovate, ca. 6 mm, with columnar tubercles apically swollen and capitate. Fl. Jun–Jul, fr. Sep–Oct.

- Stony places in forests. E and W Yunnan (Fengqing, Lincang).

The tuberous rootstock of *Stephania dicentrifera* contains large amounts of the alkaloid L-dicentrine and small amounts of rotundine.

An unpublished IUCN report listed this species as vulnerable: VU(A1c,2c;B2c).

25. *Stephania macrantha* H. S. Lo & M. Yang, Guihaia 8:

309. 1988.

大花地不容 da hua di bu rong

Herbaceous vines with huge tuberous roots, glabrous except for flowers. Branches ± brown when dry, longitudinally sulcate. Petiole 5–11 cm; leaf blade broadly ovate-rotund, 8–13 × 8–11 cm, subpapery, purplish brown when dry, base cordate or subtruncate, margin horned or horned dentate, apex mucronate or subacuminate, sometimes apiculate, palmately 9–11-veined, conspicuous on both surfaces. Male inflorescences compound umbelliform cymes, axillary; peduncle 2–4 cm; umbellet pedicels 4 or 5, 0.6–2 cm, usually without bract and bracteole, rarely with a linear bracteole on flowering pedicel; flowering pedicel 2–5 mm. Male flowers: sepals 6, subcuneate, with long claw ca. 3 × 1.5 mm, abaxially with transparent papillary hairs; petals 3, broadly cuneate, ca. 1.4 mm long and wide, with tuberculate processes inside; synandrium with a slender stipe ca. 0.7 mm. Female flowers and fruits unknown. Fl. May.

- Shrublands on limestone hills; ca. 1400 m. Yunnan (Biyang).

26. *Stephania officinarum* H. S. Lo & M. Yang, Guihaia 8: 310. 1988.

药用地不容 yao yong di bu rong

Herbaceous vines, glabrous. Roots tuberous, huge. Branches becoming purplish black, longitudinally striate. Petiole slightly longer or shorter than leaf blade, base geniculate; leaf blade peltate, insertion 3–4 cm from margin, rotund, 10–12.5 cm in diam., thinly papery, base rounded, apex rounded or inconspicuously mucronate, palmately 8–10-veined, often dichotomously branching, fine reticulation clearly seen abaxially. Male inflorescences compound umbelliform cymes, axillary, solitary or many on short axillary branches; peduncle slightly fleshy, slender when dry, 2–4(–5) cm; umbellet pedicel usually less than 1 cm, usually without bracts and bracteoles; flowering pedicels 4–6 mm. Male flowers: sepals 6, submembranous, outer whorl broadly elliptic, ca. 2 × 1.5 mm, base attenuate, inner whorl broadly rhomboidal, ca. 2.1 × 2.1 mm, both glabrous; petals 3, plump, fleshy, 0.8–1 × 1.8–2 mm, with verruculose processes; synandrium with short stipe, ca. equal to petal in height. Female inflorescences and flowers unknown. Drupes not mature, with fleshy stalk, broadly obovate. Fl. summer.

- Yunnan (Gengma, Lincang).

The tuberous rootstock of *Stephania officinarum* contains large amounts of the alkaloids isocorydine and 1-tetrahydropalmatine.

27. *Stephania dolichopoda* Diels in Engler, Pflanzenr. 46 (IV.94): 282. 1910.

大叶地不容 da ye di bu rong

Herbaceous vines. Branches stout, glabrous. Petiole 10–20 cm or slightly longer; leaf blade triangular-rotund, sometimes undulately lobed, length and width 10–19 cm or slightly larger, thinly papery, glabrous on both surfaces, base subtruncate, margin entire or undulate, apex obtuse to acutely acuminate, palmately 9–12-veined, reticulation slightly conspicuous. Inflores-

cences compound umbelliform cymes, axillary or on short axillary branches, slightly fleshy. Male peduncle 2–5 cm or longer; umbellet pedicels 5–7, 0.5–1.5 cm; cymelet pedicels pubescent. Male flowers: sepals 6, obovate-rhombic, 1.5–1.7 × 0.8–1.1 mm, base abruptly clawed below middle, apical margin involute, abaxially pubescent; petals 3, fleshy, broadly cuneate, ca. 0.7 mm, margin with sides thickened, imbricate, apex repand or inconspicuously 2-lobed; synandrium slightly shorter than or subequal to petals. Female inflorescences with peduncle 2–6(–12) cm; umbellet pedicel short. Female flowers: sepal 1, elliptic-ovate, ca. 1 mm or slightly longer; petals 2, rotund, ca. 0.7 mm. Drupes obovoid; endocarp 5–6 × 4–5 mm. Fl. summer, fr. autumn.

Forest margins, streamsides; 900–1100 m. SW Guangxi, S Yunnan [NE India].

28. *Stephania mshanica* H. S. Lo & B. N. Chang, Bull. Bot. Res., Harbin 2(1): 50. 1982.

马山地不容 ma shan di bu rong

Vines. Stems and branches relatively stout, longitudinally striate. Petiole usually shorter than leaf blade, rarely slightly longer; leaf blade triangular-rotund, 8–18 cm, length subequal to or slightly shorter than width, papery, base subtruncate, rarely slightly rounded or emarginate, margin entire or repand dentate, sometimes horny, apex often mucronate, obtuse with a finely mucronate acumen, often palmately (9 or)10(or 11)-veined, relatively stout, fine reticulation brown abaxially when dry, very conspicuous. Inflorescences compound umbelliform cymes, axillary or on short axillary branches with reduced leaves, slightly fleshy. Male peduncle 3–8 cm; umbellet pedicel 5–8, 3–3.5 cm; bracts linear or occasionally foliaceous. Male flowers: sepals 6 in 2 whorls, yellowish green, narrowly elliptic to sublanceolate, 1.9–2 × ca. 0.6 mm; petals orangish yellow, broadly cuneate, 0.6–0.7 mm, base thickened, imbricate, apex subtruncate or slightly repand; synandrium ca. 1 mm. Female inflorescences condensed to capitula; peduncle relatively stout; umbellet pedicel extremely short when blooming and slightly extended when fruiting. Female flowers: sepal 1, minute and scalelike; petals 2, orangish yellow, slightly large. Drupes red, broadly obovoid; endocarp 7.5–8 × ca. 6 mm, with columnar ornamentation, each row of 18–20. Fl. May, fr. Aug.

• Rock fissures on limestone mountains. Guangxi (Du'an, Masha, Yishan).

The tuberous rootstock of *Stephania mshanica* is huge and contains a large amount of the alkaloid L-dicentrine.

An unpublished IUCN report listed this species as vulnerable: VU(A1c,2c;B2c).

29. *Stephania micrantha* H. S. Lo & M. Yang, Bull. Bot. Res., Harbin 2(1): 52. 1982.

小花地不容 xiao hua di bu rong

Herbaceous vines, glabrous. Stems and branches slender, longitudinally striate. Petiole slender, usually longer or much longer than leaf blade; leaf blade triangular-oblate to rotund, repand or 3–5-lobed, 3.5–7.5 × 4–8 cm, papery, fine reticulation densely papuliferous, base subtruncate or emarginate, margin

entire, apex obtusely rounded or abruptly acuminate, palmately 9- or 10-veined, slender. Male inflorescences compound umbelliform cymes, axillary or few on short branches twining and slightly fleshy; peduncle slightly slender, usually 1–2(–4) cm; umbellet pedicel 4–7, 0.3–1 cm; bracts linear; cymelets slightly dense. Male flowers: sepals 6 in 2 whorls, outer whorl oblanceolate, inner whorl obovate, 1.3–1.5 mm; petals 3, orangish yellow, conchiform, 0.6–1 mm, base slightly thickened, without gland, apex truncate or subtruncate; synandrium ca. 0.7 mm, anthers 6. Female inflorescences only seen in early stage, capitate; peduncle slightly stout, ca. 1 cm; umbellet pedicel and cymelets very short. Female flowers unknown. Drupes red, obovoid; endocarp 6–7 × 4–5 mm, with columnar ornamentation, each row of 20–25. Fl. Apr–May, fr. Jul.

• Limestone mountains. Guangxi (Longzhou).

30. *Stephania longipes* H. S. Lo, Bull. Bot. Res., Harbin 2(1): 54. 1982.

长柄地不容 chang bing di bu rong

Herbaceous and deciduous vines, glabrous. Branches and leaves containing red juice, light brown when dry; branchlets longitudinally striate. Petiole very long, rarely less than 2 × as long as leaf blade; leaf blade triangular-rotund, 9–15 × 8–14 cm, papery, dark green when dry, base subtruncate to slightly emarginate, margin horned- or repand dentate, apex acute, sometimes slightly obtuse and minutely cuspidate, rarely entire, palmately 10- or 11-veined, reticulation not raised but brown and conspicuous. Inflorescences compound umbelliform cymes, axillary. Male inflorescences slightly fleshy; peduncle 3–4 cm; umbellet pedicels 5–7, ca. 1.5 cm, very flattened, barred and transparent when dry; pedicel 3–5 mm. Male flowers: sepals 6–8, margin membranous and transparent, purplish brown near midrib when dry, cuneate, 1.2–1.5 mm; petals 3 or 4, slightly fleshy, broadly cuneate and slightly rounded, 0.8–1 mm, flat; synandrium with very short stalk or subsessile. Female inflorescences with peduncle 4–11 cm; umbellet pedicels 10–12, 8–15 mm; cymelet pedicel ca. 3 mm. Female flowers: sepal 1, minute; petals 2, minute; carpel glabrous. Infructescences with conspicuous umbellet pedicels slightly sparse; fruiting pedicels not fleshy. Drupes ?obovoid; endocarp 5–6 × 3.5–4 mm. Fl. Jun.

• Shrublands, rock fissures. SW Yunnan.

31. *Stephania dielsiana* Y. C. Wu, Bot. Jahrb. Syst. 71: 174. 1940.

血散薯 xue san shu

Herbaceous and deciduous vines, 2–3 m. Root tuberous, huge, exposed, brown, prominently lenticellate. Branches slightly stout, containing red juice, often purplish red, glabrous. Petiole subequal to or slightly longer than leaf blade; leaf blade triangular-rotund, 5–15 × 4.5–14 cm, papery, both surfaces glabrous, base slightly rounded to subtruncate, apex with mucronate acumen, palmately 8–10-veined, reticulation slender, purple. Inflorescences compound umbelliform cymes, axillary or on short axillary branches with reduced leaves. Male inflorescences with 1–3 orders of branching; cymelets with pedicels

often many inserted at end of umbellet pedicel. Male flowers: sepals 6, with purple stripes, obovate to oblanceolate, ca. 1.5 mm, inner whorl slightly wider; petals 3, fleshy, often purple or slightly orange, conchiform, ca. 1.2 mm. Female inflorescences subcapitate; cymelets almost sessile. Female flowers: sepal 1; petals 2, smaller than in male. Drupes red, obovoid, rather flat, ca. 7 mm. Fl. early summer.

• Forests, forest margins, stony places at streamsides. Guangdong, Guangxi, S Guizhou, S Hunan.

32. *Stephania succifera* H. S. Lo & Y. Tsoong, Acta Phytotax. Sin. 16(1): 36. 1978.

小叶地不容 xiao ye di bu rong

Deciduous vines, 2–5 m, glabrous. Root tuberous, huge, exposed, brown and rough on surface, light brownish yellow inside. Branches and leaves containing red juice. Petiole usually 3–5(–8) cm; leaf blade rotund to triangular-rounded, length and width 5–9 cm, papery, densely papillate or adaxially inconspicuously papillate, base truncate or slightly emarginate, apex cuspidate, obtuse, with a finely mucronate acumen, palmately ca. 10-veined. Inflorescences compound umbelliform cymes, axillary or on short axillary branches with reduced or no leaves; peduncle 6–8 cm; umbellet pedicel 0.5–2 cm, slightly curved at end, with a few linear bracteoles; both cymelet pedicel and flower pedicels very short. Male flowers: sepals 6 in 2 whorls, outer whorl oblanceolate-spatulate, ca. 1.2 mm, inner whorl broader, abaxially papillate; petals 3, purple, conchiform, with basal sides inflexed, slightly shorter than sepal; synandrium ca. 0.5 mm, anthers 6. Female inflorescences unknown. Female flowers unknown. Infructescences slightly dense compound umbelliform cymes; umbellet pedicel usually less than 1 cm. Endocarp obovoid, ca. 6 × 5 mm, with columnar ornamentation short, apically slightly curved and hooklike. Fl. Mar.

• Stony places in forests. Hainan.

33. *Stephania hainanensis* H. S. Lo & Y. Tsoong, Acta Phytotax. Sin. 16(1): 39. 1978.

海南地不容 hai nan di bu rong

Vines with old branches slightly woody. Branches and leaves containing pale yellow or white juice; branches stout, longitudinally sulcate, glabrous. Petiole stout, usually subequal to or slightly shorter than leaf blade; leaf blade triangular-rounded, length and width 10–16 cm, sometimes smaller, thinly papery, base rounded to subtruncate, margin repand or sparsely horned serrate, apex acutely acuminate or subentire, palmately 10- or 11-veined, with clear papilla on fine reticulation. Male inflorescences compound umbelliform cymes, often several on short axillary branches, leafless and twining; peduncle 3–7 cm; umbellet pedicels 3–5, 2–4.5 cm; cymelets 3–5-flowered; bracteoles narrowly lanceolate; pedicel 1–3 mm. Male flowers: sepals usually 6(or 8), yellowish green, outer whorl spatulate-cuneate, ca. 2.5 mm, inner whorl slightly wider; petals 3(or 4), orangish yellow, 1.5–2 × 2–2.5 mm, one deeply concave; synandrium columnar, ca. 1 mm. Female inflorescences condensed to capitula; peduncle 2.5–5 cm, conspicuously swollen apically. Female flowers zygomorphic; sepal 1, subovate, ca.

0.4 mm; petals 2, fleshy, broadly ovate to conchiform, slightly larger than sepals; fruiting pedicel slightly fleshy. Drupes red, broadly obovoid; endocarp ca. 1 × 0.8 mm, with columnar ornamentation conspicuously curved and hooklike. Fl. Mar–May.

• Hainan.

The tuberous rootstock of *Stephania hainanensis* contains a large amount of the alkaloid rotundine.

34. *Stephania kwangsiensis* H. S. Lo, Acta Phytotax. Sin. 16(1): 30. 1978.

广西地不容 guang xi di bu rong

Herbaceous and deciduous vines, sometimes with old stems slightly woody at base. Branches terete, longitudinally striate, glabrous, 2–3 mm in diam. Petiole 4–9 cm, twining at base; leaf blade triangular-rounded to rotund, length and width subequal, 5–12 cm or slightly longer, papery, abaxially greenish white, when dry becoming purplish red or sometimes purplish black, adaxially dark green when fresh, both surfaces glabrous, margin entire or horned serrate, palmately 10- or 11-veined, reticulation slightly conspicuous. Inflorescences compound umbelliform cymes, axillary. Male peduncle 2–7 cm; umbellet pedicels 6–10, 0.5–2 cm; cymelets many, cymosely condensed close to terminal of umbellet pedicel. Male flowers: sepals 6 in 2 whorls, light green, outer whorl spatulate-oblanceolate or obovate, 1.5–1.6 × 0.4–0.6 mm, inner whorl broadly ovate, 1.2–1.5 mm, abaxially densely papillate, with 2 large glands inside; synandrium 0.7–1 mm, anthers 4. Female inflorescences relatively stout; umbellet pedicel short, 3–4 mm. Female flowers: sepal 1(or 2), subovate, ca. 0.3 mm; petals 2(or 3), broadly ovate or broadly ovate-rounded, 0.4–0.8 mm; carpel glabrous. Drupes red; endocarp obovoid, 5–6 × 4–5.5 mm. Fl. May.

• Limestone mountains. Guangxi, SE Yunnan.

The tuberous roots contain a large amount of the alkaloid rotundine.

An unpublished IUCN report listed this species as vulnerable: VU(A1c,2c;B2c).

35. *Stephania excentrica* H. S. Lo, Acta Phytotax. Sin. 16(1): 33. 1978.

江南地不容 jiang nan di bu rong

Herbaceous and twining vines, glabrous. Roots tuberous, shortly clavate or fusiform. Branches brown, longitudinally striate. Petiole often very long, 7–10(–14) cm; leaf blade peltate, insertion 1–2 cm from margin, triangular or triangular-rotund, length and width 5–10(–13) cm, papery, base slightly emarginate or repand cordate, rarely subtruncate, margin entire, occasionally irregularly repand, apex obtuse, ?cuspidate, palmately 9- or 10-veined, reticulation thin and dense, becoming brown when dry. Male inflorescences axillary or on short axillary branches with reduced leaves; peduncle 2–5 cm, slightly fleshy, apex bracteolate; umbellet pedicel slender, 1–3 cm; cymelets with pedicels 5–8-fascicled at end of umbelliform pedicel. Male flowers: sepals 6 in 2 whorls, light green, free, broadly ovate or broadly rotund, ca. 1.2 mm; petals 3, broadly

cuneate or conchiform, ca. 0.5×0.7 – 0.9 mm, with 2 large cushion-shaped glands inside; synandrium slightly longer than petals. Female inflorescences axillary and similar to male but umbellet pedicel relatively stout, less than 1 cm. Female flowers: sepal often 1, broadly ovate, ca. 1 mm; petals usually 2, rotund, ca. 0.5 mm in diam. Fruiting pedicel fleshy. Drupes red; endocarp rotund, ca. 6 mm in diam. Fl. Jun.

• Shrublands along forest margins or roads. W Fujian (Wuyi Shan), N and W Guangxi, Guizhou (Guiping), SW Hubei, NW Hunan, Jiangxi (Jinggangshan), C, E, and SE Sichuan.

36. *Stephania ebracteata* S. Y. Zhao & H. S. Lo, *Guihaia* 10: 181. 1990.

川南地不容 chuan nan di bu rong

Vines, 2–3 m or longer, glabrous. Roots tuberous, huge, grayish brown outside, densely tuberculate. Stems twining, yellowish green when dry, longitudinally striate, soft, hollow. Petiole usually much longer than lamina, 15–25 cm, swollen at both ends; leaf blade conspicuously peltate, triangular-rounded, 10 – 18×9 – 18 cm, papery, base truncate, rounded, or slightly cordate, margin entire or repand, rarely horned, apex obtuse, apiculate, palmately 9- or 10-veined. Male inflorescences axillary; peduncle 2–5 cm, without bracts or occasionally with a leafy bract; umbellet pedicels 4–7, 1–3 cm; cymelets with pedicels many, corymbosely arranged. Male flowers: sepals 5 or 6, connate at base, light yellowish green, outer whorl obovate-elliptic, 1.7 – 2×1 – 1.2 mm, inner whorl broadly ovate, 1.8 – $2 \times$ ca. 1.5 mm, base clawed, lobes auricled at each side; petals 3, fleshy, often conchiform, ca. 1.4 mm high, with 2 large glands inside; synandrium ca. 0.8 mm. Female flowers unknown. Infructescences with peduncle 2.5–6 cm, with fleshy pedicel. Drupes red, rotund, flattened, ca. 9 mm; endocarp obovate-rotund, ca. 7×6 mm. Fl. Aug–Sep.

• Ditch sides; ca. 2500 m. Sichuan (Miyi).

37. *Stephania miyiensis* S. Y. Zhao & H. S. Lo, *Guihaia* 10: 183. 1990.

米易地不容 mi yi di bu rong

Vines. Roots tuberous, fusiform or irregularly clavate, yellowish brown, with tuberculate lenticels. Stems twining, longitudinally striate, up to 1 cm thick at base, solid. Petiole 7–20

cm; leaf blade peltate, insertion 1.5–4 cm from margin, broadly rotund to triangular-rotund, length and width 7–18 cm, papery, base truncate, rounded, or slightly cordate, apex with finely mucronate acumen, palmately 10–12-veined. Male inflorescences composed of umbelliform cymes, axillary or sometimes on leafless old branches; peduncle 1.5–6 cm; umbellet pedicels 4–9; bracts filamentous; cymelets and flowers with pedicels. Male flowers: sepals 6 in 2 whorls, outer whorl ovate or obovate-lanceolate, 1.8 – 2.2×0.9 – 1.1 mm, inner whorl broadly rotund, 1.8 – 2.2×1.3 – 1.8 mm, base clawed, lobes auricled at each side; petals 3, fleshy, cuneate or broadly cuneate, ca. 1.2×1.8 mm, concave abaxially, with 2 large glands inside; synandrium ca. 1.6 mm. Female flowers unknown. Drupes with pedicel fleshy, red; endocarp rotund, 5–6.5 mm in diam.; condyle not perforate.

• Sichuan (Miyi).

